

COSTAR starNET Pro

User's Manual

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Chapter 1 — Introduction

This document describes installation and operation of COSTAR starNET Pro software, which is designed to be used with network cameras, network video transmitters and digital video recorders (DVRs).

NOTES:

- The software included in this product contains some Open Sources. You may obtain the corresponding source code which we have to distribute according to the license policy. Go to Client Menu - About page for more information. This product includes software developed by the University of California, Berkeley and its contributors, and software developed by the OpenSSL Project for use in the OpenSSL Toolkit (<http://www.openssl.org/>). Also, this product includes cryptographic software written by Eric Young (eay@cryptsoft.com), and software written by Tim Hudson (tjh@cryptsoft.com).
- Covered by one or more claims of the patents listed at patentlist.accessadvance.com.

1.1 Features

COSTAR starNET Pro is a software that controls monitoring of live video and playback of recorded video.

- Remote monitoring of live images
- Remote monitoring of live images in multiple Client systems through a streaming service (the number of channels that can be streamed equals the number of channels that can be recorded unless streaming WIBU-Keys have been added)
- Stable streaming by using the load balancing function in installation with more than one streaming server
- Video analytics of live images through a video analytics service
- Up to 64 simultaneous connections to the COSTAR starNET Pro system
- Software upgrades and multiple systems setup remotely (supported only for devices which provide the functions)
- Display of system log information (supported only for devices which use the DirectNET protocol)
- Map monitoring of live images
- Centralized system operation and management and event handling
- Decompression algorithm for H.264, H.265, MPEG-4 and M-JPEG
- Enhanced security using the SSL function
- Two-way audio communication and audio broadcasting
- Enhanced security by setting up different authorities for each user group
- Controllable with a network keyboard
- Text-in and alarm function via TCP networking
- Operation in a low bandwidth environment
- Intuitive GUI
- The following are supported only for DVRs:
 - Playback of video recorded in DVRs
 - Remote control of panic recording
- Number of services and devices that can be registered and channels that streaming, video analytics and video wall are available for:
 - Service Registration: One monitoring service, 64 streaming services, 64 video analytics services, 64 backup services, 8 video wall services, the same number of failover services as administration, monitoring, recording and video wall services. The number of streaming services that can be registered differs depending on the type and number of WIBU-Keys purchased. RTP Streaming, backup, video wall, - and failover services are sold separately.

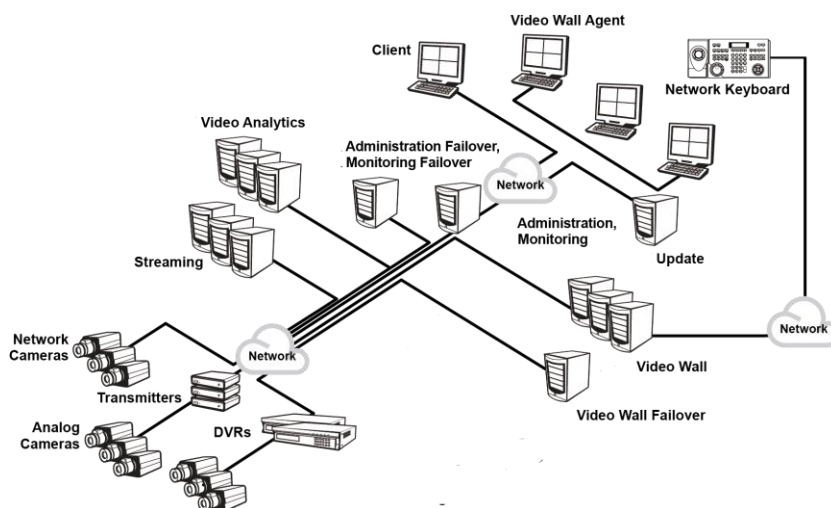
- Device Registration: Maximum of 1,024 devices including devices which do not use the DirectNET protocol (The devices which do not use the DirectNET protocol can be registered as the maximum number within available streaming channels. For example, if your COSTAR starNET Pro software supports eight-channel streaming, up to eight devices that do not use the DirectNET protocol can be registered.)
- Streaming: The number of channels that can be streamed equals the number of channels that can be recorded unless streaming WIBU-Keys have been added (maximum of 512 to 2,048 channels depending on the type and number of the WIBU-Keys when WIBU-Keys have been added).
- Video Analytics: Up to 64 channels per video analytics service are available.

NOTES:

- Ask your dealer or distributor about the number of channels that can be recorded or streamed using your COSTAR starNET Pro software. If the device is a four-channel network video transmitter which uses the DirectNET 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 streaming and video analytics.
- Several types of WIBU-Keys are available and support different numbers of channels for streaming, or backup. You can increase the number of channels by buying additional WIBU-Keys.
- The COSTAR starNET Pro Backup software is supported to allow you to build better surveillance systems. Ask your dealer or distributor about purchasing the software and details about it.
- The information in this manual is believed to be accurate as of the date of publication even though explanations of some functions may not be included. 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.

1.2 System Diagram

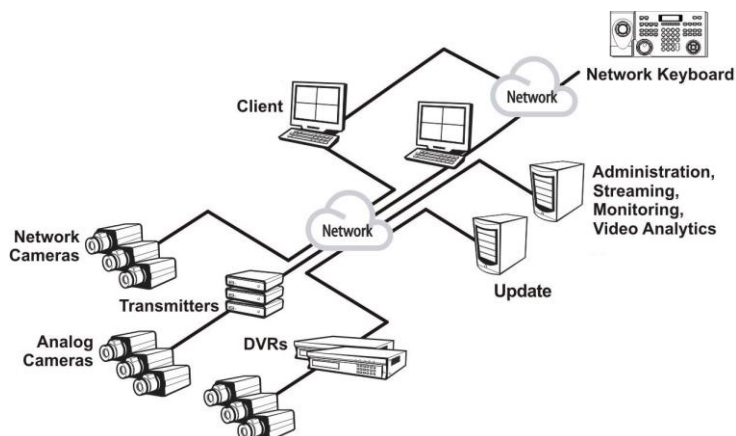
Multi-Server



NOTES:

- The administration service and monitoring service can run on separate PCs.
- The update service can run on a client PC or a PC with other COSTAR starNET Pro service programs installed.

Single-Server



NOTES:

- When 256 or more devices are registered, it might take several minutes or longer to change the settings of the Setup program.
- It is suggested that you run the streaming and video analytics services on separate PCs.
- The update service can run on a client PC or a PC with other COSTAR starNET Pro service programs installed.

Chapter 2 — Installation

2.1 Product Information

Package Contents

- Installation CD
- User's Manual
- License Key (WIBU Key or Product Serial Number)

NOTES:

- In case that WIBU Key (USB Dongle) is used for License Key, up to eight WIBU-Keys can be recognized by one administration server.
- If a WIBU-Key is disconnected from an administration server, the COSTAR starNET Pro program will not operate properly.
- Stop running all services before connecting or disconnecting a WIBU-Key.

System Requirements

Server System

- Operating System: Microsoft® Windows® 7 (Home Premium, Professional, Ultimate), Microsoft® Windows® 8 (Pro, Enterprise), Microsoft® Windows® 8.1 (Pro, Enterprise), Microsoft® Windows® 10 (Home, Pro), Microsoft® Windows® 11 (Home, Pro), Microsoft® Windows® Server 2012/2016/2019
- CPU: Intel Core i5-3570 3.30GHz/Intel Xeon E3 or faster (4cores or more)
- RAM: 4GB or more
- Hard Disk Drive: 2 GB or more free space for each service (for example, 4 GB or more free space when installing administration and monitoring services)
- LAN: Gigabit Ethernet or faster

Client System

Recommended Requirements

- Operating System: Microsoft® Windows® 10 (Home, Pro), Windows Server 2016 or higher
- CPU: Intel® Core™ i7-7700 3.6GHz or faster
- RAM: 8GB or more
- VGA: NVIDIA GeForce GTX1060 or Quadro P2000 or higher (1920x1080x32bpp or higher), Multi-monitor
- Hard Disk Drive: 6GB or more free space
- LAN: Gigabit Ethernet or faster

Minimum Requirements

- Operating System: Microsoft® Windows® 7 x86 (64 Bit) (Home Premium, Professional, Ultimate) (Windows XP, Windows Vista are not supported)
- CPU: Intel® Core™ i3-2100 3.1GHz or faster
- RAM: 2GB or more
- VGA: NVIDIA GeForce GT730 (1280x1024x24bpp 60Hz) or Intel® HD Graphic 530 or higher
- Hard Disk Drive: 4GB or more free space
- LAN: 10/100 Mbps Ethernet or faster

NOTES:

- The client system that is installed in a 32-bit operating system could have a problem that the video is not displayed, because of a memory shortage. Ask your dealer or distributor about details about it.
- Using 6 monitors on Videowall Agent with products under VGA 1GB may result in problems due to memory shortage. Ask your dealer or distributor for details about it.
- Some functions which use the Internet Explorer may not operate depending on the OS version. Ask your dealer or distributor for details.

FishEye Client-Side Dewarping Recommended Requirements

- Operating System: Microsoft® Windows® 7 64-bit (Home Premium, Professional, Ultimate)
- CPU: Intel Core™ i7-3770 3.40 GHz or faster
- RAM: 8GB or more
- VGA: AMD Radeon™ HD 7700 or NVIDIA GeForce GTX650 or higher (1280x1024, 32bpp), multi monitor
- Hard Disk Drive: 6 GB or more free space
- LAN: Gigabit Ethernet or faster

Video Analysis/Person Match Server Recommended Requirements

- Operating System: Microsoft® Windows® 10 64-bit (Home Premium, Professional)
- CPU: Intel Core™ i7-8700 3.20 GHz or faster
- RAM: 8GB or more
- VGA: NVIDIA GeForce GTX1070Ti 8GB (1920x1080, 6Mbps, 30ips 16 channels supported) / NVIDIA GeForce RTX 2060 Super 8GB (640x360, 0.1Mbps, 5ips 64 channels supported)
- Hard Disk Drive: 6 GB or more free space
- LAN: Gigabit Ethernet or faster
- Independent installation of video analysis or person match service

NOTES:

- In this document, the “server or server system” refers to a PC on which a COSTAR starNET Pro service is running. The “client system” refers to a PC running the Client program.
- The COSTAR starNET Pro service is installed and operates in 32-bit or 64-bit compatibility mode.
- It is recommended to add a new unformatted hard disk drive to ensure stable recording. If you are setting up a hard disk drive which contains data, however, you are to delete partition(s) and the file system in advance after formatting. Refer to the PC/server's user manual or consult with the PC/server manufacturer for details about how to format or delete the partition(s) and file system.

2.2 Installation

NOTES:

- It is recommended to install the streaming and video analytics services on separate PCs for better performance of video monitoring and playback.
- Disable your PC's Windows power saving function: *Start* menu → *Power Options* → set both *Turn off the display* and *Put the computer to sleep* to *Never* (*Power Options* → *Power Schemes* tab → set both *Turn off monitor* and *Turn off hard disks* to *Never* when using the Microsoft® Windows® XP operating system).

CAUTION: If an older version of COSTAR starNET Pro 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.

WARNING: Upgrading the firmware or software may introduce compatibility issues with third party products.

Server System

Administration Server

1. Insert the software CD in the administration server.
2. Run the setup.exe file in the Setup folder 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:

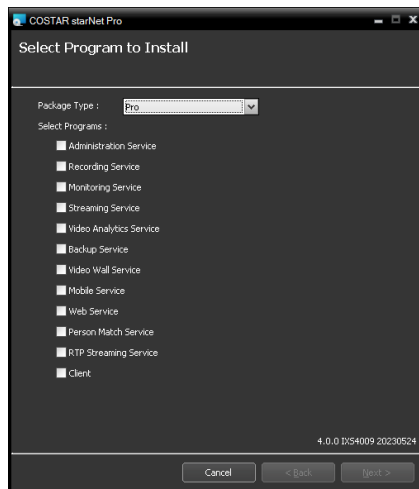
- To properly display the selected language, your PC's operating system should be set to support the selected language.
- To change the COSTAR starNET Pro program's language after the software has been installed, select *Language Selector* in the *COSTAR starNET Pro* → *Utility* folder of the *Start*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



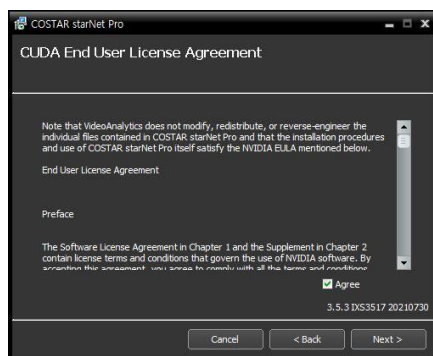
4. When the following screen appears, select *Install* and click *Next*.



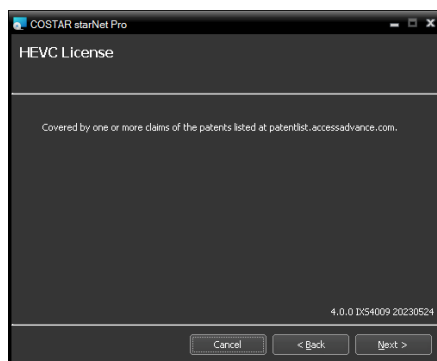
5. Select the services to install and click **Next**.



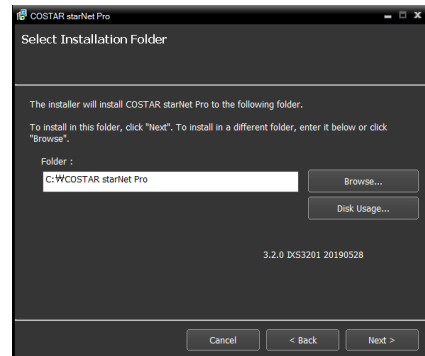
6. In the case of installing Video analytics Service and Person Match Service, check the **Agree** box under the CUDA End User License Agreement and click **Next**.



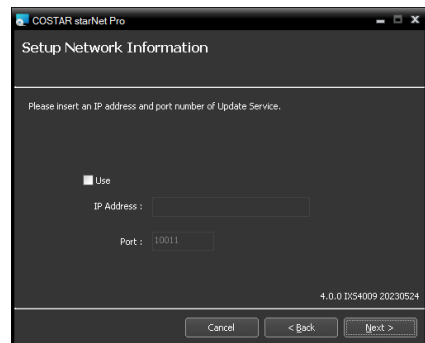
7. Check the HEVC License and click **Next**.



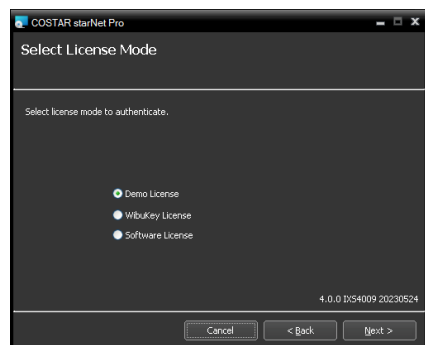
8. Designate the folder path to install the services. Clicking the **Disk Cost...** button shows the available and required disk space for each hard disk drive for the installation. Then click **Next**.



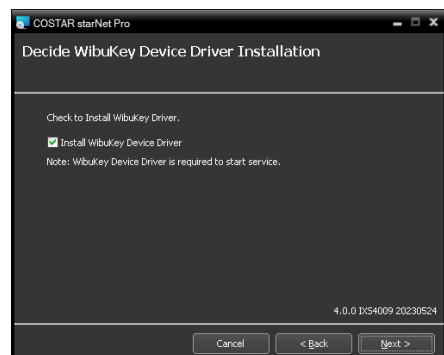
9. If you use the update service, it is required to enter the IP address and port number of the update server when installing the administration service. You can change the settings in the Service Manager program after completing installation. Refer to 2.3 Automatic Upgrade, Update Service Setup (p.19) for details.

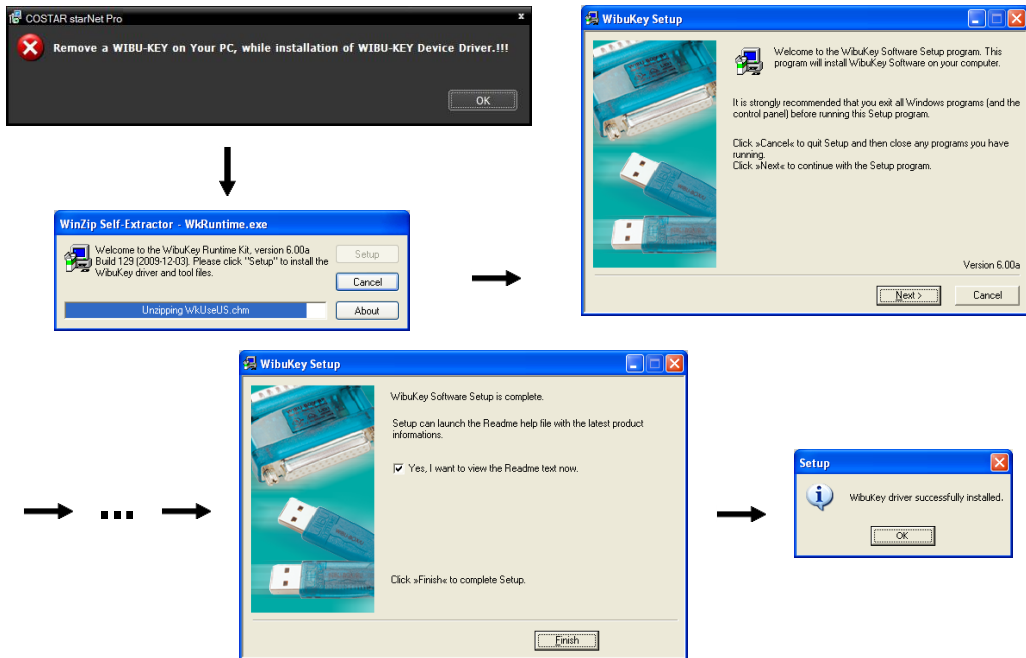


10. Select a license mode and click **Next**. You can change the settings in the Service Manager program after completing installation. Refer to 2.3 Automatic Upgrade, Update Service Setup (p.19) for details.



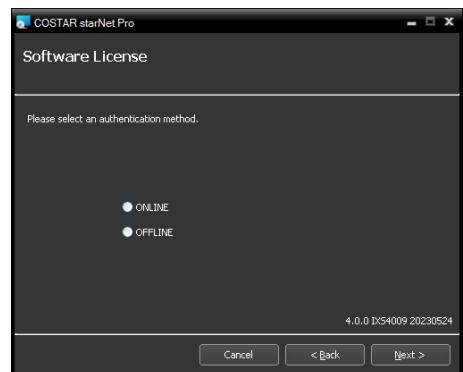
11. Select **Demo License** and click **Next** to use the demo license authentication. Demo license authentication requires no further license related process.
12. Disconnect the WIBU-Key from the server if a WIBU-Key is connected. Then install the WIBU-Key device driver following the instructions.



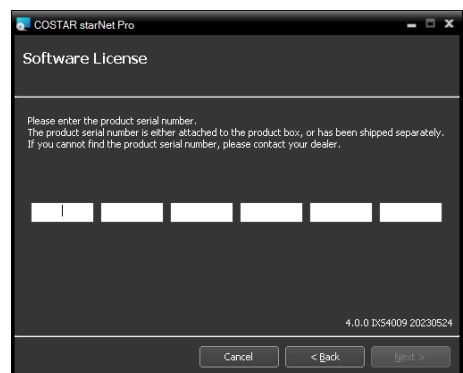


13. In order to use a software license authentication, select **Software License Authentication** mode and click **Next**. If the network connection to the authentication server is not available, select **OFFLINE**.

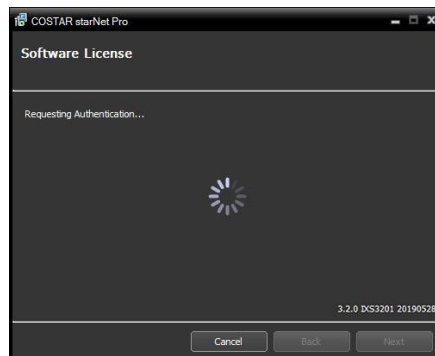
NOTE: The software license authentication is supported for the VMWare ESXi and Hyper-V products only. Ask your dealer for details.



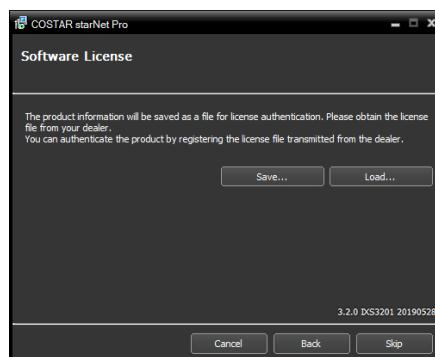
14. Enter the product serial number and click **Next**. The serial number is either attached to the product box or enclosed in the product box. If you cannot find the product serial number, please contact your dealer.



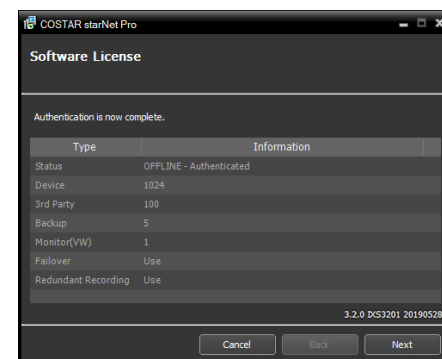
15. Online authentication requests authentication file from the remote authentication server through a network connection. If the network connection is not available due to network failure, select **Skip** and go on to the next step. You can authenticate with a license tool after completing installation.



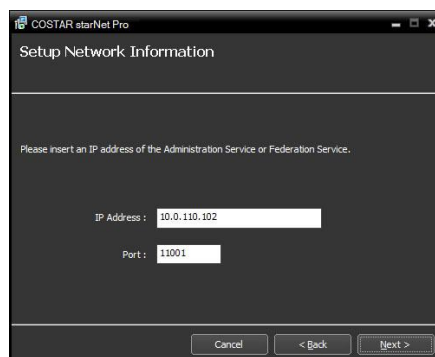
16. The offline authentication is available by registering the license file transmitted from the dealer in the exchange with the product information file.



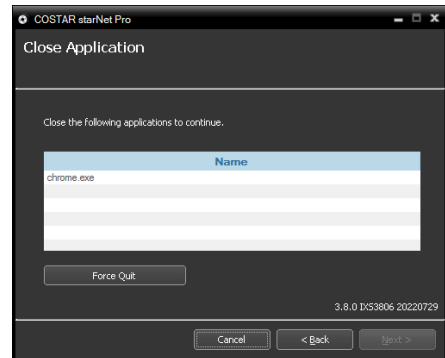
17. Current license information is displayed after the authentication is completed.



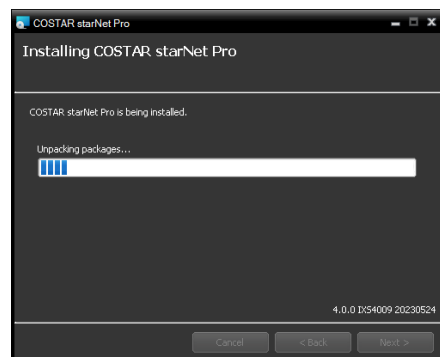
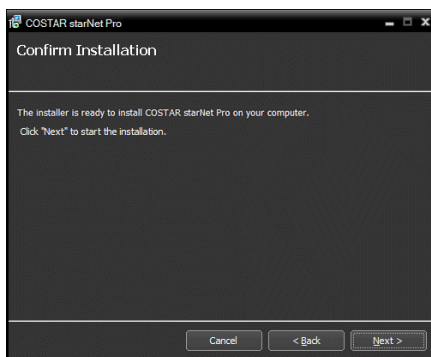
18. If the service is installed on separate PCs, it is required to enter the IP address and port number of the administration server when installing the monitoring service. You can change the settings in the Service Manager program after completing installation if necessary. When the installation is complete, the monitoring service is connected to the administration service via the network if both services are operating.



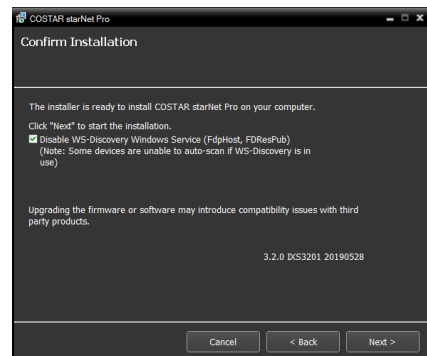
19. Close the application before installation. The **Next** button will become active only when the application is closed. Click the **Force Quit** button to close the programs. In this case, unsaved data may be lost.



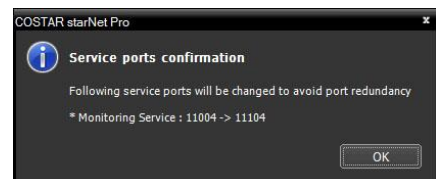
20. When the following screens appear, click **Next**.



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 COSTAR starNET Pro program cannot auto-scan devices using ONVIF™ Conformance protocol when scanning devices for device registration.



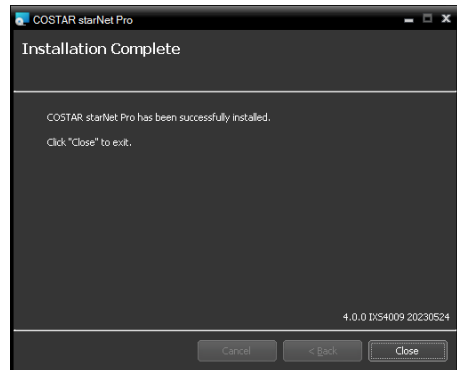
NOTE: The following screen appears when the port number of the service being installed is already in use, and the screen displays the port number that will be changed. The changed port number will be applied when the service starts operating after installation.



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.

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

NOTE: After successfully installing WIBU-Key device driver, select whether to restart the PC.



22. Connect WIBU-Keys to the administration server.

Streaming Server / Video Analytics Server

1. Insert the software CD in the server.
2. Run the **setup.exe** file in the **Setup** folder 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:

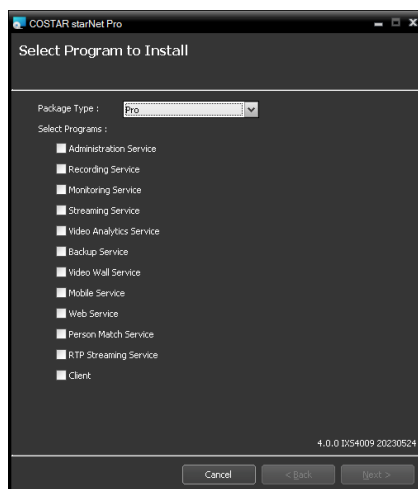
- To properly display the selected language, your PC's operating system should be set to support the selected language.
- To change the COSTAR starNET Pro program's language after the software has been installed, select *Language Selector* in the *COSTAR starNET Pro* → *Utility* folder of the *Start*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



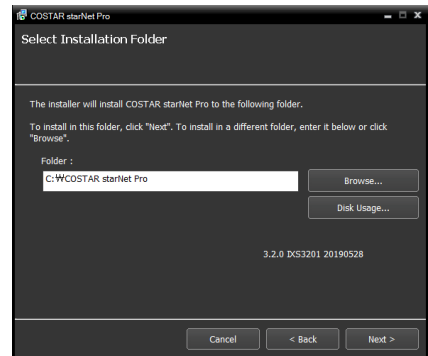
4. When the following screen appears, select **Install** and click **Next**.



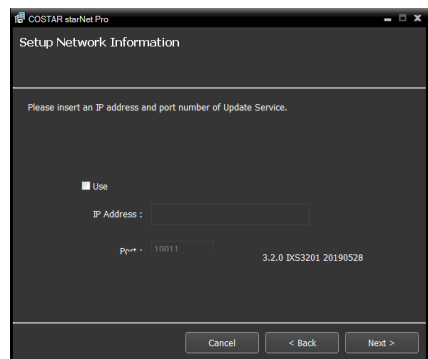
5. Select a service to install and click **Next**.



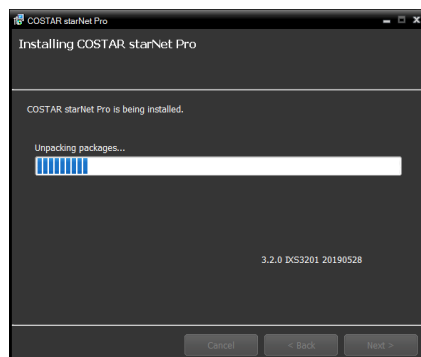
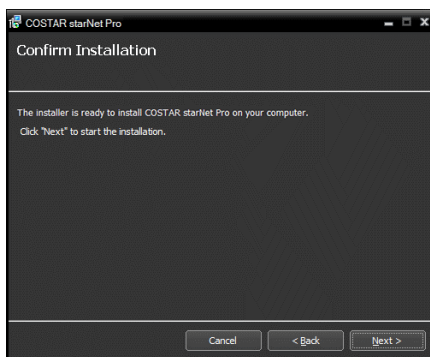
6. Designate the folder path to install the service. Clicking the **Disk Cost...** button shows the available and required disk space for each hard disk drive for the installation. Then click **Next**.



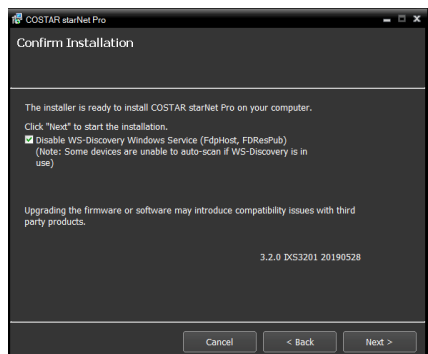
7. Enter the IP address and port number of the administration server and click **Next**. You can change the settings in the Service Manager program after completing installation. When the installation is complete, the installed service is connected to the administration service via the network if the services are operating.



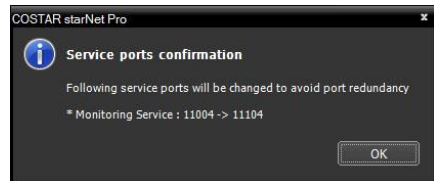
8. When the following screens appear, click **Next**.



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 COSTAR starNET Pro program cannot auto-scan devices using ONVIF™ Conformance protocol when scanning devices for device registration.




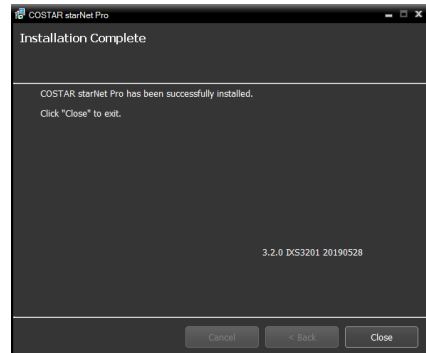
NOTE: The following screen appears when the port number of the service being installed is already in use, and the screen displays the port number that will be changed. The changed port number will be applied when the service starts operating after installation.



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.

- 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.



- Connect WIBU-Keys to the administration server.

Client System

- Insert the software CD in the Client PC.
- Run the setup.exe file in the Setup folder 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.

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

NOTES:

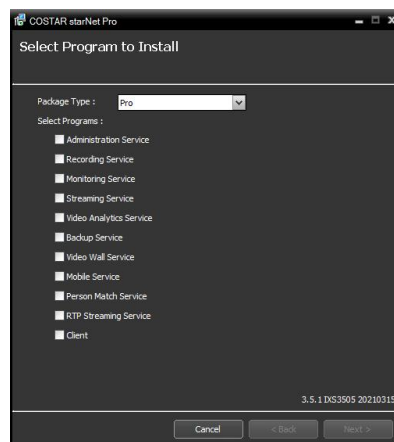
- To properly display the selected language, your PC's operating system should be set to support the selected language.
- To change the COSTAR starNET Pro program's language after the software has been installed, select *Language Selector* in the *COSTAR starNET Pro* → *Utility* folder of the *Start*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



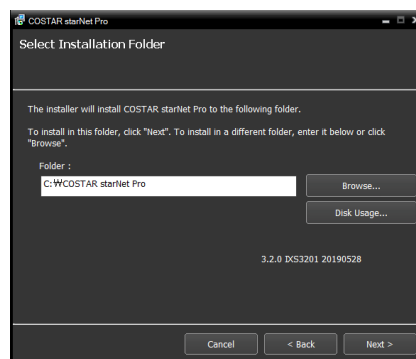
4. When the following screen appears, select **Install** and click **Next**.



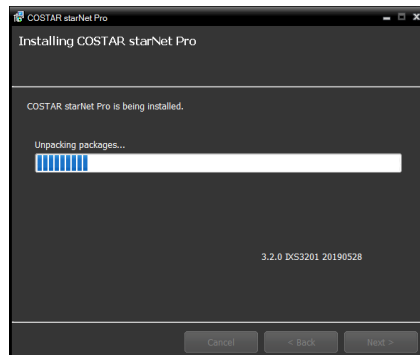
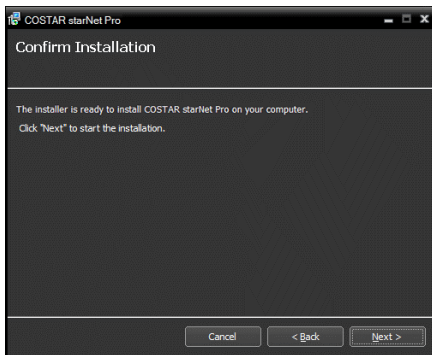
5. Select **Client** and click **Next**.



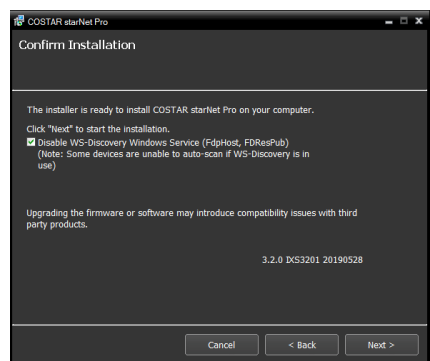
6. Designate the folder path to install the Client program. Clicking the **Disk Cost...** button shows the available and required disk space for each hard disk drive for the installation. Then click **Next**.



7. When the following screens appear, click Next.

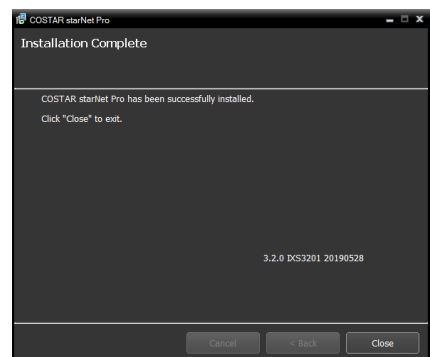


NOTE: The following screen appears when using Microsoft® Windows® Vista or later operating systems. It is recommended that you check the *Disable WS-Discovery Windows Service (fdPHost, FDResPub)* box. If you do not check the box, the COSTAR starNET Pro program cannot auto-scan devices using ONVIF™ Conformance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



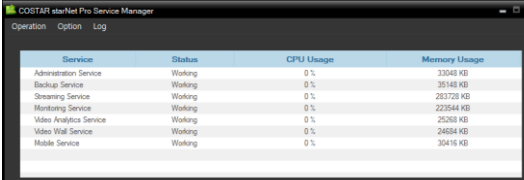
2.3 Automatic Upgrade

You can upgrade all services automatically by running the update service and designating the installation file of the software version to upgrade.

WARNING: Upgrading the firmware or software may introduce compatibility issues with third party products.

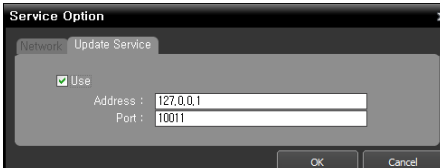
Update Service Setup

1. Run the Service Manager program in the administration server.



Service	Status	CPU Usage	Memory Usage
Administration Service	Working	0 %	33948 KB
Backup Service	Working	0 %	35148 KB
Streaming Service	Working	0 %	283728 KB
Monitoring Service	Working	0 %	223544 KB
Video Analysis Service	Working	0 %	25268 KB
Video Wall Service	Working	0 %	246284 KB
Mobile Service	Working	0 %	30416 KB

2. Select Administration Service and click Option menu. Then select Update Package and select Update Service tab. Check the Use box and enter the IP address and port number of the update server.



Service Option

Network: Update Service

☒ Use

Address : 127.0.0.1

Port : 10011

OK Cancel

Update Service Installation

1. Insert the software CD in the update server.
2. Run the `setup.exe` file in the Update folder 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.

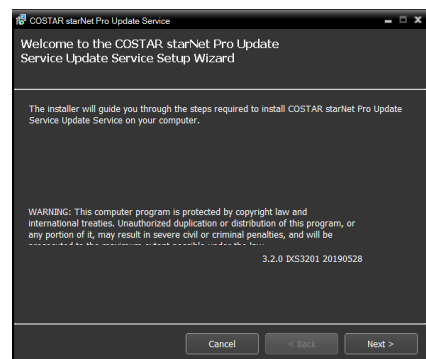
3. Select the language in which to run the program and then click OK.

NOTES:

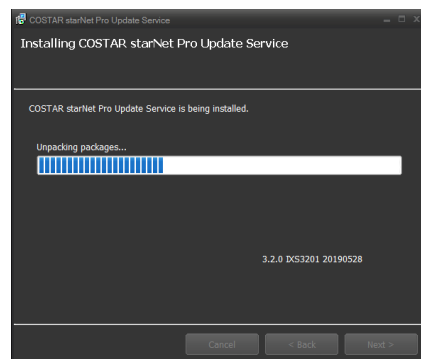
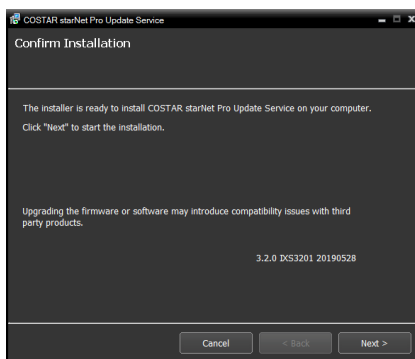
- To properly display the selected language, your PC's operating system should be set to support the selected language.
- To change the COSTAR starNET Pro program's language after the software has been installed, select *Language Selector* in the *COSTAR starNET Pro* → *Utility* folder of the *Start*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



4. When the following screen appears, select *Install* and click *Next*.

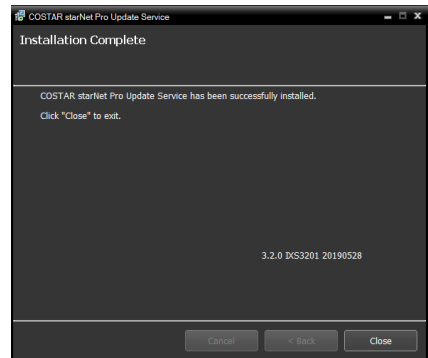


5. When the following screens appear, click *Next*.



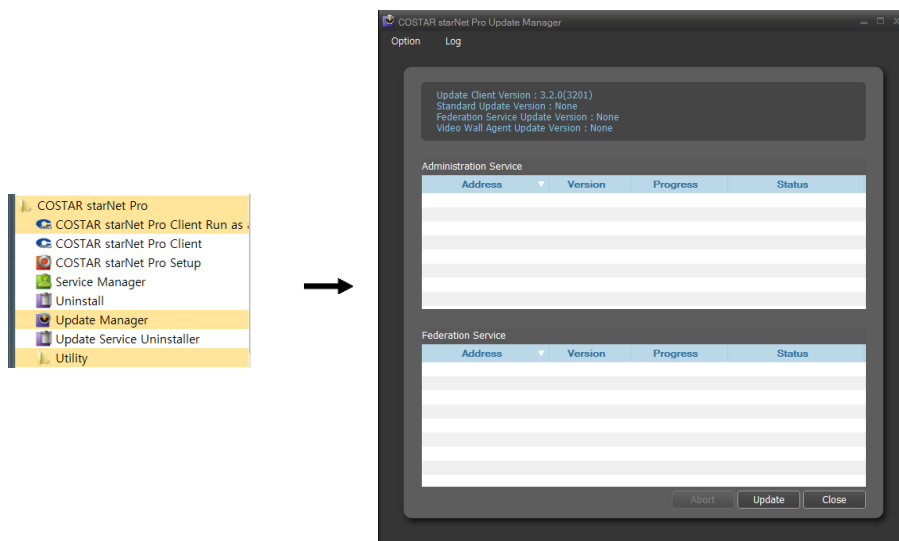
NOTE: *.NET Framework* and the *Visual C++ Runtime Libraries* are installed automatically, and it may take some time. This installation step will be skipped if the programs are already installed on your computer.

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

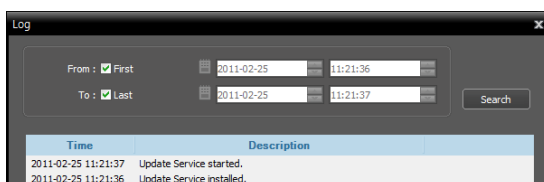


Upgrade

1. Go to the Start Menu in the update server → Click COSTAR starNET Pro → Run the Update Manager program.

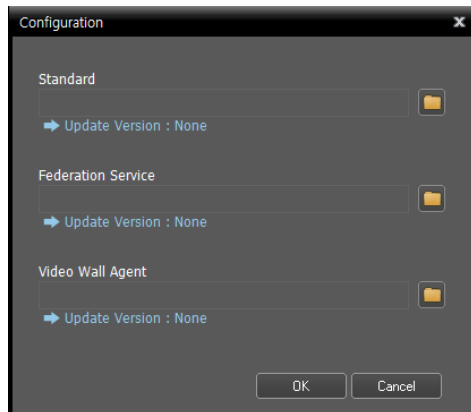
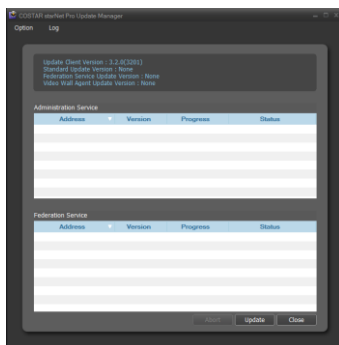


- **Option:** Designates the upgrade file or sets up the port number of the update server.
 - **Update Package:** Designates the folder path of the upgrade installation file.
 - **Port Setup:** Sets the port number of the update server.
- **Log:** Selecting Show Log allows you to check and search the 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.

2. Click the Option menu and select Update Package.



Click the  button and designate the folder path of the upgrade installation file. Click the OK button.

- Click the **Update** button at the bottom of the **Update Manager** screen. For a Client system with no COSTAR starNET Pro service program installed, clicking the **Update** button upgrades the Client program. For server systems, each service connects to the update service periodically and automatically upgrades if necessary.

2.4 Uninstall

- Stop running the services and Client program first.

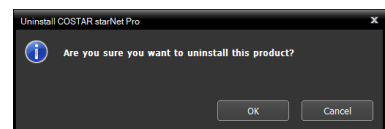
NOTE: The COSTAR starNET Pro software might not be uninstalled correctly if you uninstall it while the services or Client program is running.

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

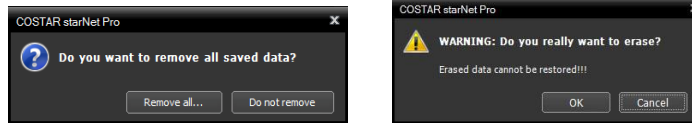
- Go to the Start Menu, and click COSTAR starNET Pro. Click Uninstall COSTAR starNET Pro.

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

- Click **Yes** when the following screen appears.



- 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. If a recording service has been installed, the message “Including recorded data” is displayed on the bottom.



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

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

Chapter 3 — Getting Started

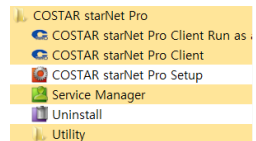
The COSTAR starNET Pro software consists of Service Manager, Setup and Client programs, and services should be running on the COSTAR starNET Pro servers for the COSTAR starNET Pro program to operate. Refer to Chapter 4 — System Overview (p. 37) for details about Service Manager, Setup and Client programs.

NOTE: In this document, the “server or server system” refers to a PC on which the COSTAR starNET Pro 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 Running Services

NOTE: A “service” in the COSTAR starNET Pro program is a process that runs in the background and performs a specified operation.

When the services are installed, the services run automatically. You can also start or stop running the services manually. Go to the Start Menu → Click COSTAR starNET Pro → Run the Service Manager program.



Administration Server

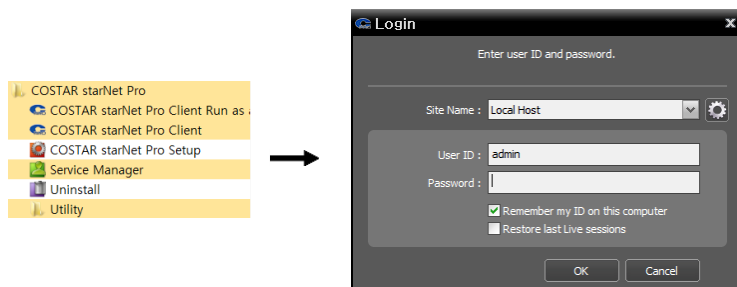
Service	Status	CPU Usage	Memory Usage
Administration Service	Working	0 %	32048 KB
Backup Service	Working	0 %	35148 KB
Streaming Service	Working	0 %	263728 KB
Monitoring Service	Working	0 %	222544 KB
Video Analytics Service	Working	0 %	25258 KB
Video Wall Service	Working	0 %	24654 KB
Mobile Service	Working	0 %	30416 KB


Check the status of services. If any of the services are not listed as Working under Status, start the services manually. Refer to 4.2 Service Manager (p. 41) for details about the Service Manager program.

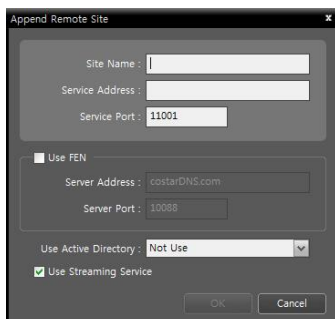
3.2 Log In

You are required to log in to the administration service as follows when running the Setup and Client programs.

Go to the Start Menu → Click COSTAR starNET Pro → Run the COSTAR starNET Pro Setup or COSTAR starNET Pro Client program and enter login information.



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



- **Site Name, Service Address, Service Port:** Designate the name of the administration service and enter the IP address and port number of the administration server (default: 11001).
- **Use Active Directory:** Select to log in using the Active Directory account.
- ☒ **Use Streaming Service:** Select to use streaming service for live monitoring (supported only for the Client program).

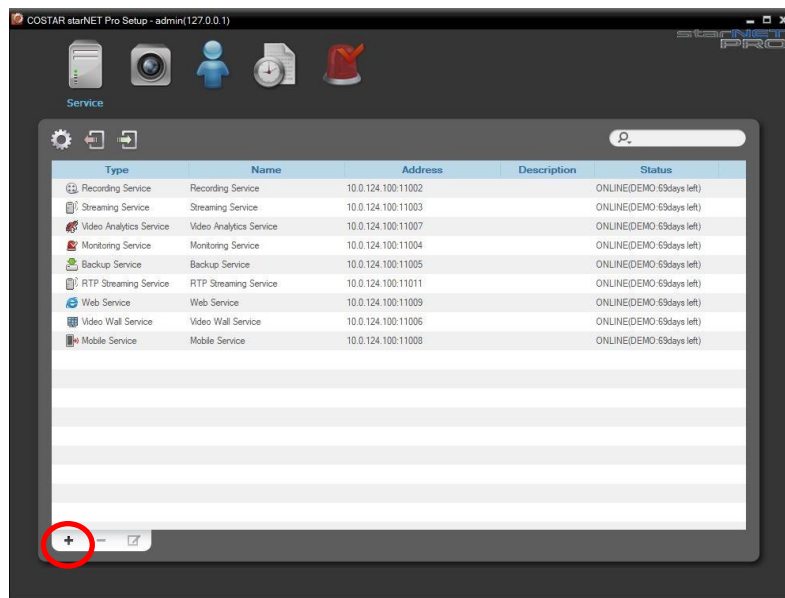
- **User ID, Password:** Enter your user ID and password. The default user ID is **admin** and default password is **12345678**. You can change the user ID and password in the User menu. Refer to **Chapter 15 — User Management** (p. 163) for details.
- **Remember my ID on this computer:** Check the box 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).

3.3 Registering Services

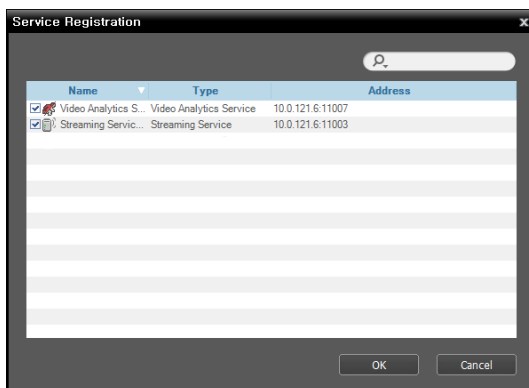
You must register monitoring, streaming and video analytics services on the administration service to start the COSTAR starNET Pro program. Services that are installed on the administration server are registered on the administration service automatically.

Go to the **Start Menu** → Click **COSTAR starNET Pro** → Run the **COSTAR starNET Pro Setup** program and enter login information.

Select the **Service** menu, and then register monitoring, streaming and video analytics services following the procedures below.



1. Click the **+** button at the bottom. The **Service Registration** window appears, and a list of available services is displayed with information about each service.

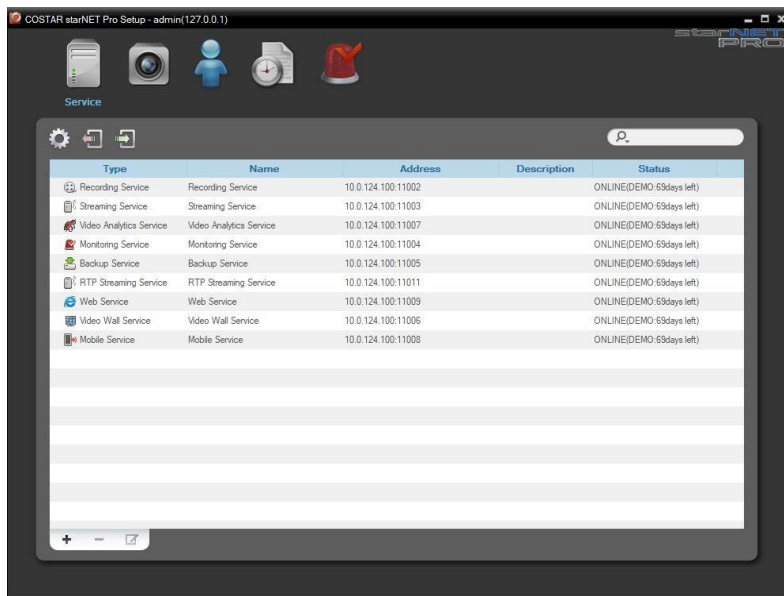


- **Name:** Displays services that are currently connected to the administration service via the network.
- **Type:** Displays the service type.
- **Address:** Display the IP address and port number of each server.

NOTES:

- Only the services of which the administration server information (*Service Manager* → *Option* → *Server Option*) matches the currently connected administration server are available.
- You cannot register more than one monitoring service on one administration service.

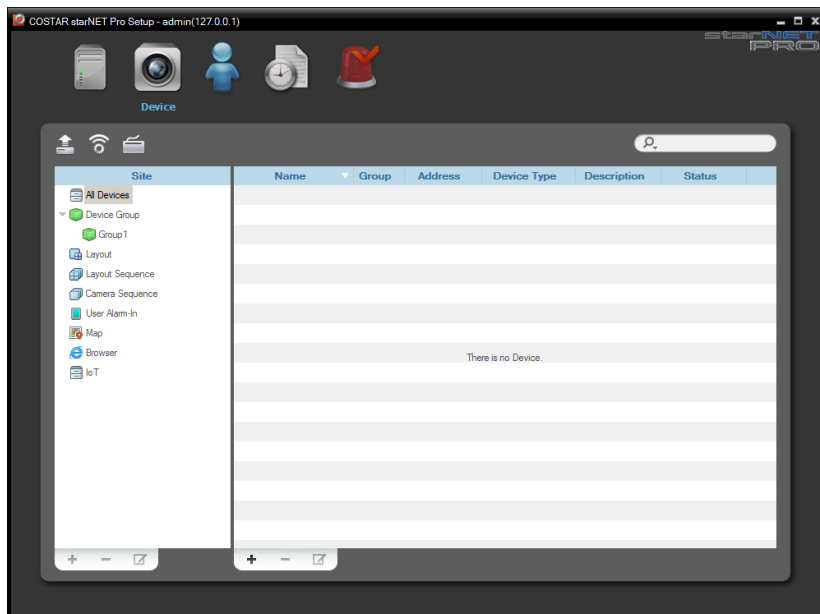
2. Select monitoring, streaming and video analytics services to register on the COSTAR starNET Pro system, and the selected services are displayed in the service list.



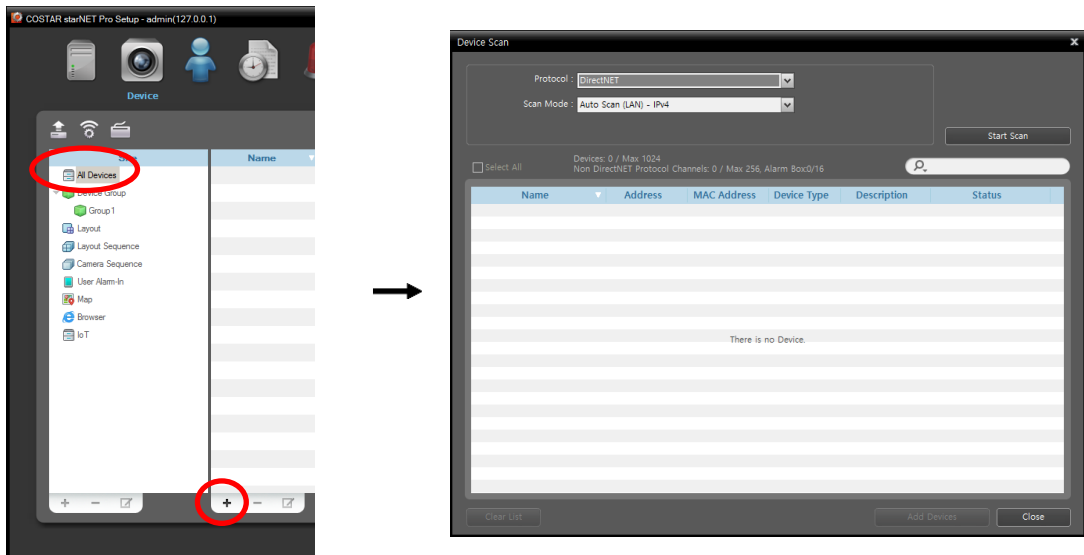
3.4 Registering Devices

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



Go to the Start Menu → Click COSTAR starNET Pro → Run the COSTAR starNET Pro Setup program and enter login information.



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.



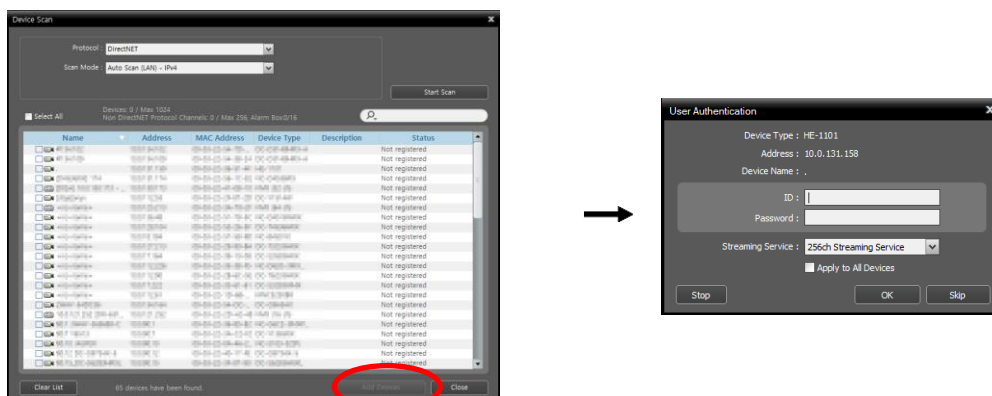
- **Protocol:** Select the protocol or manufacturer of the device to scan. Event related functions may not be supported depending on the protocol that the device uses and the device model (supported protocols: DirectNET protocol, some versions of the Axis, Panasonic BB, Panasonic WV (DG), Baster, Mobotix, Pelco, RTSP/STP, Protocol-H, IQinVision, Sony, and ONVIF™ Conformance protocols). Some other functions may not be supported depending on the settings of the device. Ask your dealer or distributor for details.
- **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 administration server, the COSTAR starNET Pro 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 (not supported for some models of DVRs). 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.
- **FEN:** Allows you to enter the device FEN name registered on the FEN server if the device uses the FEN function. Ensure the FEN server information on which the device is registered is correct (**Service menu** →  (**System Setup**) button). If the FEN 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.
- **Device Information File:** Allows you to import an .xml file which has device connection information and lists the devices. Ask your dealer or distributor for details about the .xml file.
- **URI:** Allows you to enter URI (Uniform Resource Identifier). (supported only for the RTSP/RTP protocol)
- **Mobile Devices:** Allows you to select a user to access via mobile devices. Only users selected by this function can access COSTAR starNET Pro through mobile devices.
-  : 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 COSTAR starNET Pro 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 DirectNET 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's user manual about enabling the ONVIF™ Conformance protocol in the device, as procedures may differ for each model.
- If a device uses the DirectNET protocol and is set up in DirectIP™ mode, then you cannot add the device. In this case, clicking the device allows you to change its mode and reboot the device. After rescanning, you can add the device.
- If the device uses the Protocol-H protocol and is registered in the *Auto Scan (LAN)* mode, *Auto Scan (LAN)* mode changes to *IP Address* mode automatically after the registration.
- If a device is higher than 2304x1296 and the COSTAR starNET Pro service is installed in 32-bit mode, then you cannot add the device. In this case, COSTAR starNET Pro system should be installed in 64-bit mode.

3. Click the Add Devices button at the bottom.

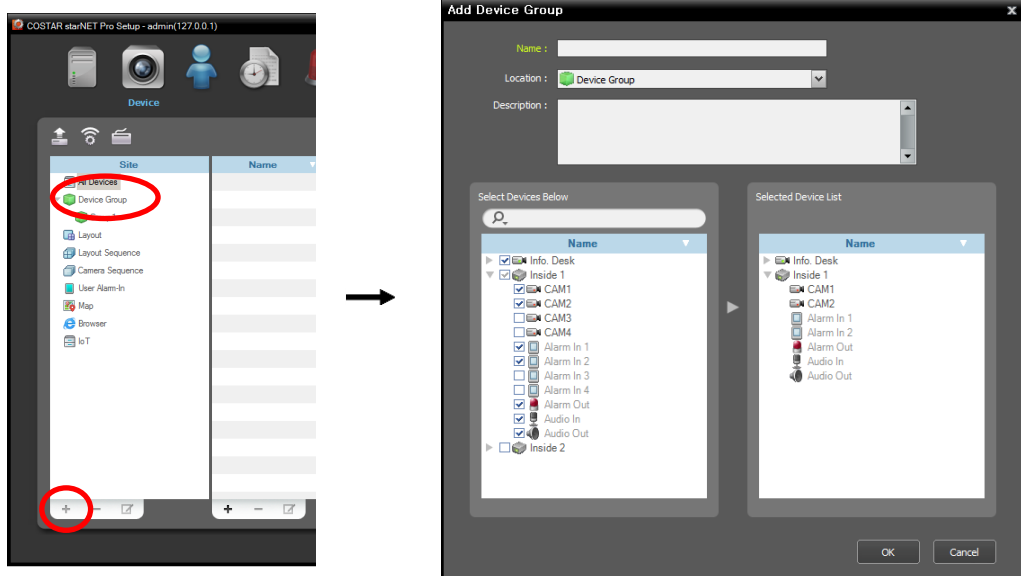


- **Name, Address, Device Type:** Displays the name, IP address and type of the selected device. The name will be updated automatically depending on the settings of the device.
- **ID, Password:** Enter the user ID and password which you set in the device in order to connect to that device remotely. The connection to the device is allowed only to the users under the Administrator group of the device.
- **Streaming Service:** Select whether or not to use the streaming service for monitoring video from the device. If you use the streaming service, the COSTAR starNET Pro program transmits video from the device to the client system through the streaming server, and it allows multiple users to monitor video simultaneously. The number of channels that can be streamed equals the number of channels that can be recorded unless streaming WIBU-Keys have been added. When you register more than one streaming service by buying additional WIBU-Keys, the COSTAR starNET Pro program chooses any one of the streaming services depending on the system load of the streaming server. Refer to Chapter 11 — Streaming (p. 123) 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:

- The number and type of registered devices can be different depending on the type of licenses.
- 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 DirectNET protocol, all four cameras are automatically registered even if some of the four cameras are disabled.

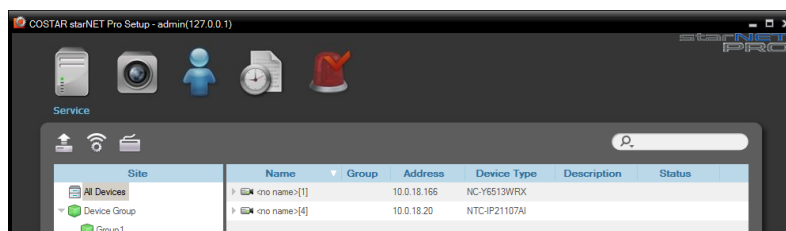
4. Click Device Group in the Site panel, and then the + button at the bottom of the Site panel. The Add Device Group window appears.




- **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.

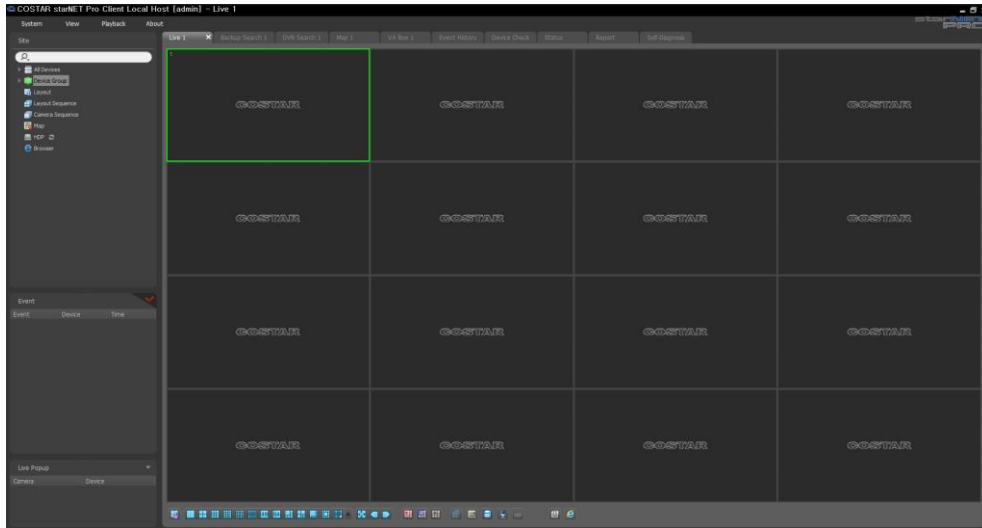
5. Check that the device was added to the device group correctly. Click **Device Group** in the **Site** panel and then the arrow button (▶) beside **Device Group**. Clicking the registered group displays the list of devices added to the device group. Refer to [Appendix – Network Disconnection Log](#) (p. 251) for details about the network disconnection log.



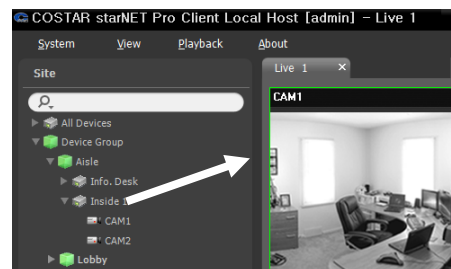
Selecting the registered device group, and then the  button at the bottom of the Site List panel displays the Edit Device Group window and allows you to edit the selected device group. Refer to [Chapter 14 — Device Management](#) (p. 137) for details.

3.5 Live Video Monitoring

Go to the **Start Menu** → Click **COSTAR starNET Pro** → Run the **COSTAR starNET Pro Client** program and enter login information.

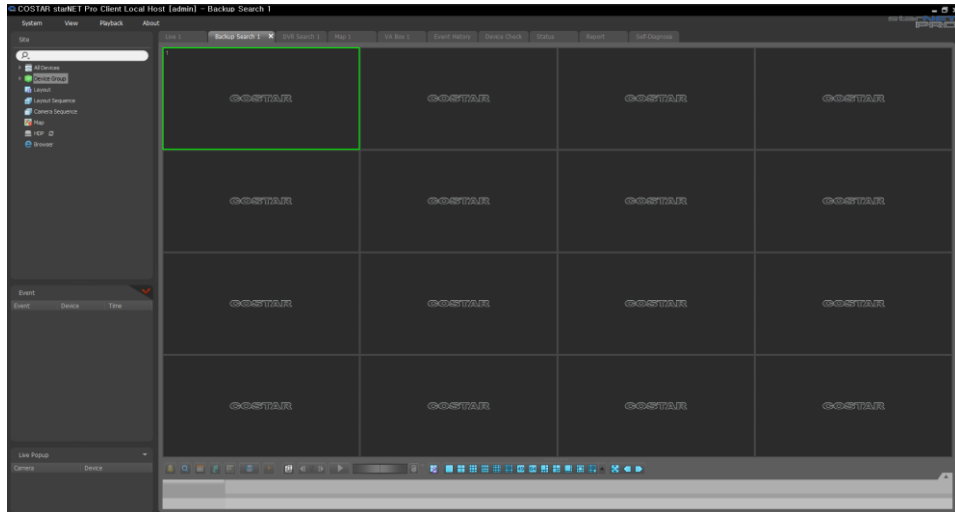


1. Check that the devices were added to a device group in the **Site** list.
2. Click the **Live** tab on the tab panel → Select a site to connect to from the **Site** list, and drag and drop it on the Live screen. Live video from the selected site is displayed on the screen. Refer to Chapter 5 — Live Video Monitoring (p. 76) for details.



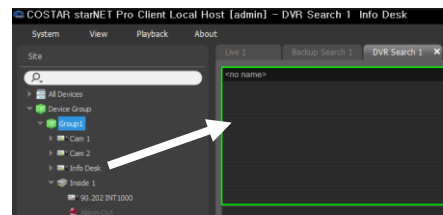
3.6 Playing Recorded Video

Go to the **Start Menu** → Click **COSTAR starNET Pro** → Run the **COSTAR starNET Pro Client** program and enter login information.



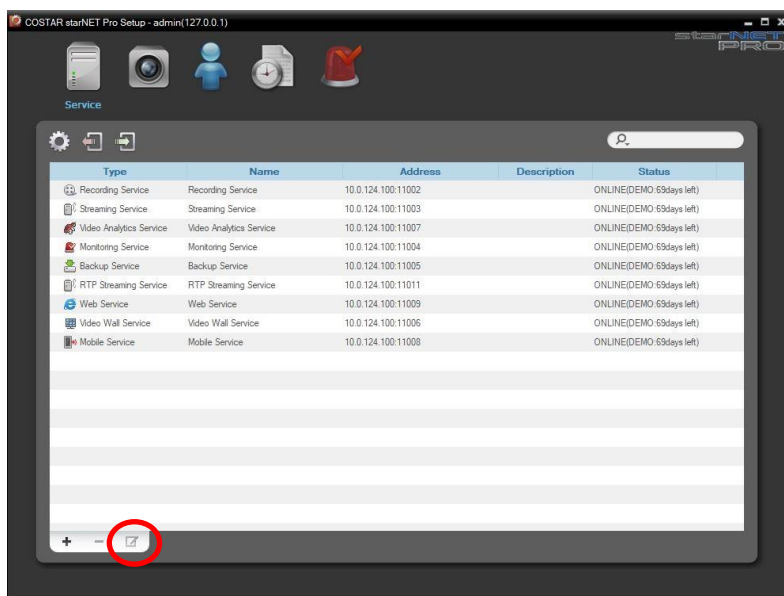
1. Check that the devices were added to a device group in the **Site** list.


2. Click the **DVR Search** tab on the tab panel → Select a site to connect to from the **Site** list and drag and drop it on the **DVR Search** screen. Recorded video from the selected site is displayed on the screen. Refer to **Chapter 7 — Recorded Video Playback & Exportation** (p. 105) for details.

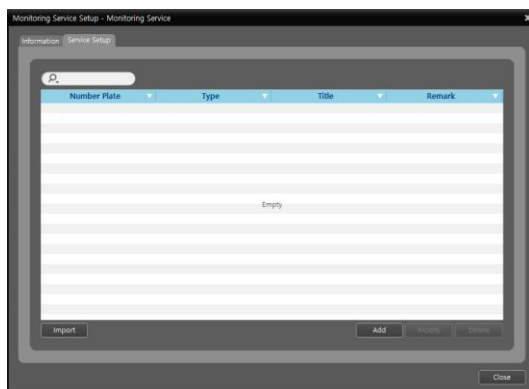


3.7 Setting up ANPR DenyList/AllowList

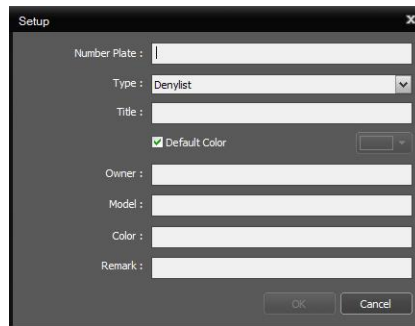
Go to the Service Menu and complete the following process to set up the ANPR DenyList or AllowList.



1. Select a monitoring service and click the  button at the bottom. The Setup – Monitoring Service window appears. Select the Service Setup tab.



2. Click **Add** or **Import** to register a DenyList or AllowList. Refer to ANPR List CSV File Example (p.271) for details about CSV file.



The image shows a 'Setup' dialog box with the following fields and controls:

- Number Plate :** A text input field.
- Type :** A dropdown menu currently showing 'Denylist'.
- Title :** A text input field.
- Default Color :** A checked checkbox followed by a color selection button.
- Owner :** A text input field.
- Model :** A text input field.
- Color :** A text input field.
- Remark :** A text input field.
- Buttons:** 'OK' and 'Cancel' buttons at the bottom right.

Chapter 4 — System Overview

The COSTAR starNET Pro software consists of the following programs:

- **Service Manager:** Controls the operation of services or displays system log. Refer to 4.2 **Service Manager** (p. 41) for details.
- **Setup:** Allows you to add service, devices and users, event management schedules and storage. Refer to 4.3 **Setup** (p. 48) 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 4.4 **Client** (p. 59) for details.

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

- **Problem Reporter, Secret Key:** You will use them following the directions of your dealer or distributor when your dealer or distributor requests.
- **Language Selector for Client:** Use it to change the COSTAR starNET Pro Client/Setup program's language.
- **Language Selector for Service(Run As Admin):** Use it to change the COSTAR starNET Pro service's language.
- **License Tool:** Use it for the software license authentication.

4.1 License

The COSTAR starNET Pro software supports demo, WIBU Key and software license.

The demo license lasts for 70 days in maximum, and the software or WIBU Key license authentication before the expiration date is necessary to use continuously.

WIBU Key License

When running with the WIBU Key license, the number of devices and services that can be registered differ according to the number and type of WIBU Keys connected to the administration server. Some of the services require WIBU Keys connected to the system with the other installed service instead of the administration service. Ask your dealer or distributor for details about it.

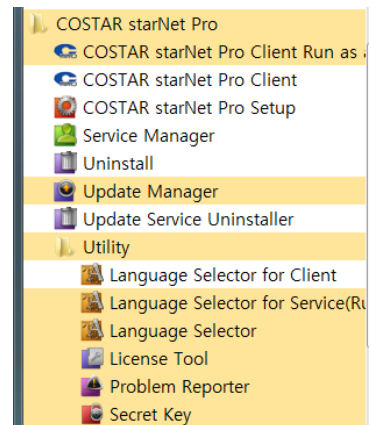
- The number of services that can be registered is as follows:
 - One monitoring service, one to four streaming services, 32 video analytics services, 64 backup services, 8 video wall services, the same number of failover services as administration, monitoring, and video wall services. The number of streaming and failover services that can be registered is the same as the number of streaming service of WIBU-Key. RTP Streaming, backup, video wall, and failover services are sold separately.

Software License

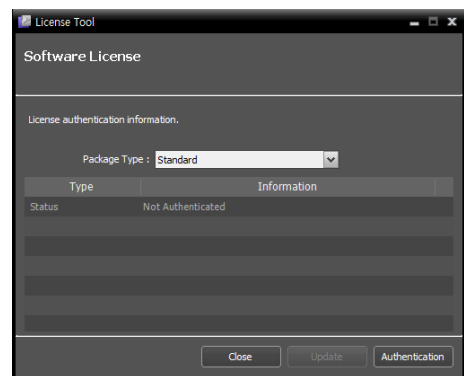
The software license authentication is supported for the VMWare ESXi and Hyper-V products only. Ask your dealer or distributor for details about it.

Software License Authentication

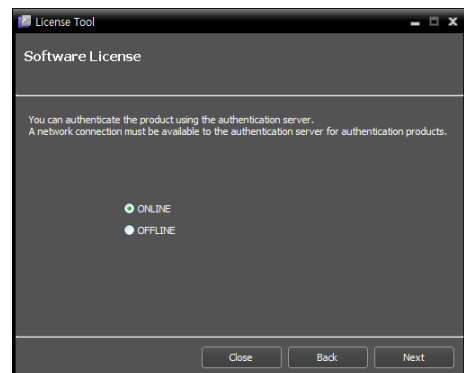
1. Go to the Start Menu → Click COSTAR starNET Pro → Run the License Tool program.



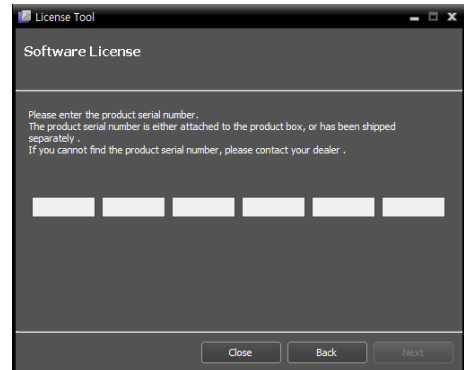
2. License Tool displays the installed COSTAR starNET Pro software package. Select a package to get the software license authentication and click Authentication.
- Package Type: Displays the installed COSTAR starNET Pro software package.



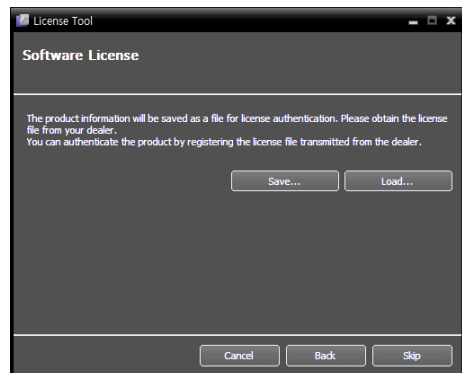
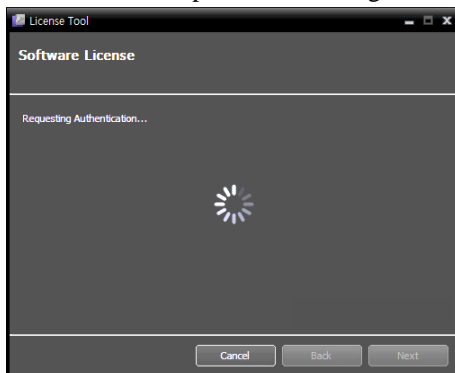
3. Select a software license authentication mode and click Next.



4. Enter the product serial number and click Next. The serial number is either attached to the product box or enclosed in the product box. If you cannot find the product serial number, please contact your dealer.

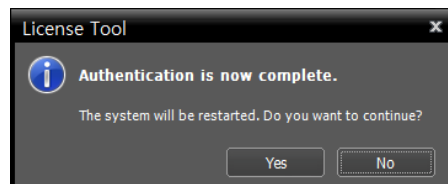
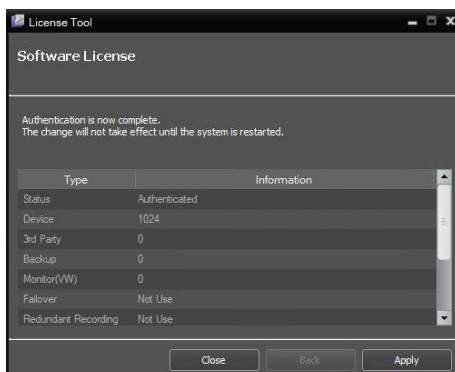


5. Authenticate the product according to the selected authentication mode.



- Online authentication requests authentication file from the remote authentication server through a network connection.
- Offline authentication is available by registering the license file transmitted from the dealer in the exchange for the product information file.

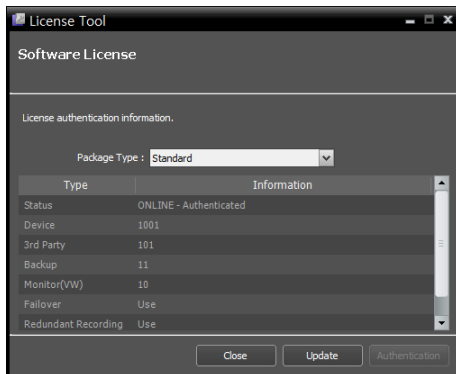
6. Current license information is displayed after the authentication is completed.



NOTE: Restart to apply the license, after the product authentication is completed.

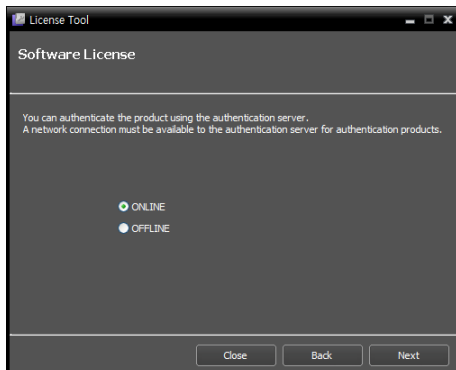
Software License Update

1. Run the License Tool program to display the installed COSTAR starNET Pro software package. Select a package to update the software license and click **Update**.



- **Package Type:** Displays the installed COSTAR starNET Pro software package.

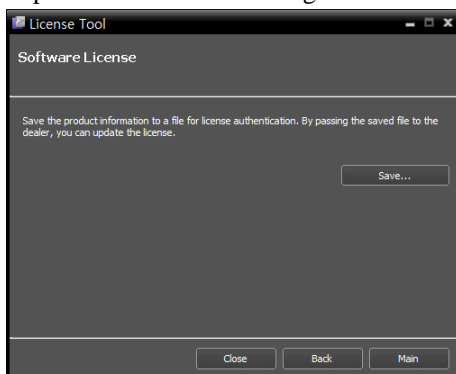
2. Select a software license authentication mode and click **Next**.



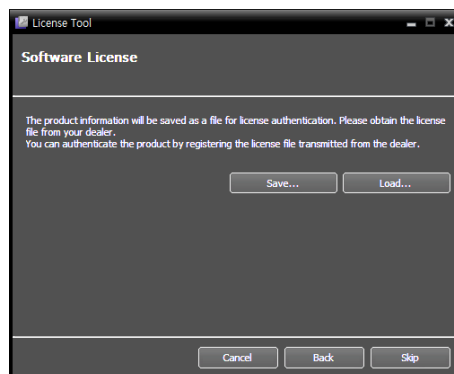
- **Online:** Online authentication requests license authentication from the remote authentication server through a network connection.
- **Offline:** Offline authentication is available by registering the license file transmitted from the dealer. Ask your dealer or distributor for details about it.

NOTE: If the authentication mode is changed, it is required to get the product authentication again through the changed mode.

3. Update the license according to the selected authentication mode.



- Online authentication requests authentication file from the remote authentication server through a network connection.

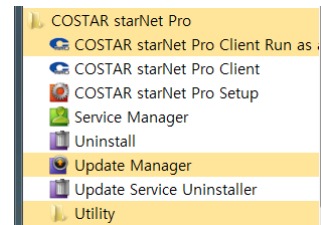


- Offline authentication updates the license by registering the license file transmitted from the dealer in the exchange for the product information file.

4. Current license information is displayed after the authentication is completed.

4.2 Service Manager

Services should be running on the system to operate the COSTAR starNET Pro program. Go to the Start Menu → Click COSTAR starNET Pro → Run the Service Manager program.



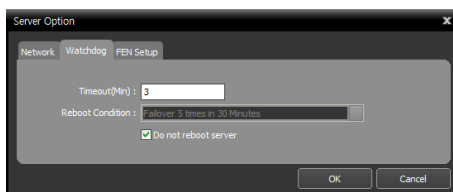
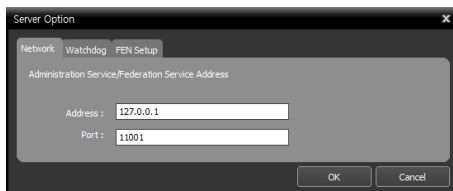
Administration Server



- 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 all 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 all services to apply the changes.
- **Option**
 - **Server Option:** Sets up the information for connection to the administration service from the current server. Also, you can change the watchdog and FEN setting.



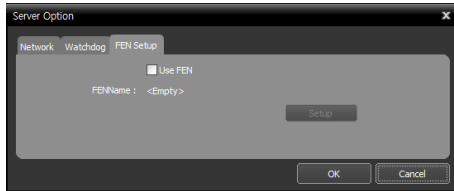
Network Tab

- **IP, Port:** Enter the IP address and port number of the administration server.

CAUTION: If the IP address or port number of the administration server is wrong, the COSTAR starNET Pro program will not work.

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.



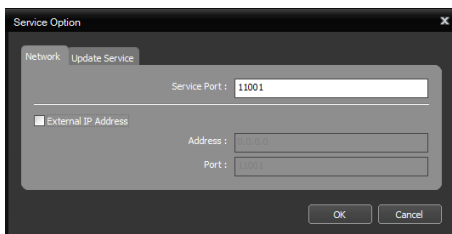
FEN Tab

- **FENName:** Register a FEN name. The “External IP address” setting is not available when iFENName is registered.

NOTE: “Watchdog” in the COSTAR starNET Pro 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.

Administration Service

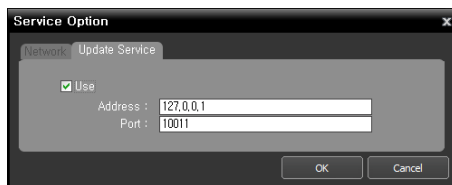


Network Tab

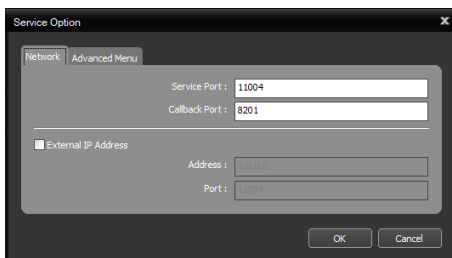
- **Service Port:** Enter the port number for connection to the service.

Update Service Tab

- **Use:** Check the box if you want to use the update service and enter the IP address and port number of the update server. The administration service connects to the update service periodically to check if an upgrade is available and automatically upgrades if necessary.

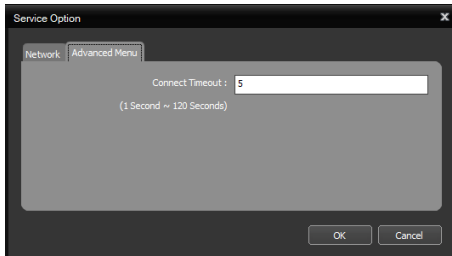


Monitoring Service



Network Tab

- **Service Port:** Set up the port number for connection to the service.
- **Callback Port:** Set up the port number to receive a callback message from the device. The port number you enter should match the port number set on the device for remote callback.
- **External IP Address:** Set up the external IP address and port number for connection to the selected service from an external network.



Advanced Menu Tab

- **Connect Timeout:** Set timeout to connect the device.

Recording Service

The top screenshot shows the 'Service Option' dialog box with the 'Network' tab selected. It contains the following fields:

- Service Port: 11002
- RTP Incoming Port Range: 8000 ~ 8999
- Attachment Port: 11102
- ☐ External IP Address
- Address: [Empty]
- Port: [Empty]

The bottom screenshot shows the 'Service Option' dialog box with the 'Advanced Menu' tab selected. It contains the following fields:

- Storage Timeout(min): 300
- (0 Second ~ 1200 Seconds)
- Finger Print: Legacy

Network Tab

- **Service Port:** Enter the port number for connection to the service.
- **RTP Incoming Port Range:** Enter 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 Client system or port numbers of other streaming programs. If an RTP port number conflicts with others, COSTAR starNET Pro program recording/ streaming/video analytics function may not be available.
- **Attachment Port:** Enter the port number for receiving still images.
- **External IP Address:** Enter the external IP address and port number for connection to the service from an external network.

Advanced Menu Tab

- **Storage Timeout(min):** Specifies the amount of time to wait for storage initialization. It can be set up to 1200 seconds.
- **Finger Print:** Set the encryption method. Recording performance may deteriorate when MD5 or SHA256 is selected.

Streaming Service / Video Analytics Service

The screenshot shows the 'Service Option' dialog box with the 'Network' tab selected. It contains the following fields:

- Service Port: 11003
- Incoming Port Range: 9000 ~ 9999
- ☐ External IP Address
- Address: [Empty]
- Port: [Empty]

- **Service Port:** Enter the port number for connection to the service.
- **Incoming Port Range:** Enter 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 Client system or port numbers of other streaming programs. If an RTP port number conflicts with others, COSTAR starNET Pro program streaming/video analytics function may not be available.
- **External IP Address:** Enter the external IP address and port number for connection to the service from an external network.

RTP Streaming Service

- **Service Port:** Set up the port number for connection to the RTP Streaming service.
- **RTP Incoming Port Range:** Enter 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 Client system or port numbers of other streaming programs. If an RTP port number conflicts with others, COSTAR starNET Pro program recording/ streaming/video analytics function may not be available.
- **RTSP Port:** Set up the RTSP port number (Default: 554) for RTP Streaming service. Make sure not to use the port number which conflicts the other streaming service program's RTSP port number.
- **External IP Address:** Set up the external IP address and port number for connection to the selected service from an external network.

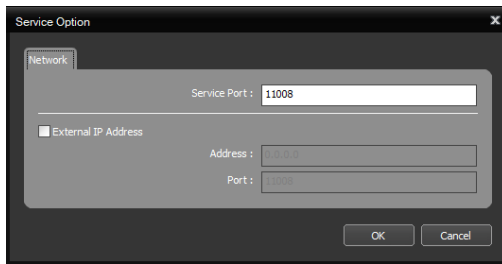
Video Wall Service

- **Service Port:** Set up the port number for connection to the Video Wall service.
- **Network Keyboard Port:** Enter the port number for connection to the video wall service by using the network keyboard.
- **External IP Address:** Set up the external IP address and port number for connection to the selected service from an external network.

Person Match Service

- **Service Port:** Set up the port number for connection to the Person Match service.
- **Web Port:** Enter the port number for connection to the Person Match service on the Person Match tab.
- **Callback Port:** Sends data to the connected client through the callback port. It is set automatically when entering the web port.
- **External IP Address:** Set up the external IP address and port number for connection to the selected service from an external network.

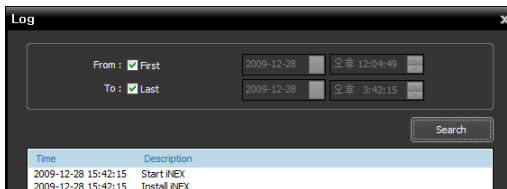
Mobile Service



The 'Service Option' dialog box has a 'Network' tab. It contains a 'Service Port' field with the value '11008'. Below it is a checkbox for 'External IP Address'. If checked, there are 'Address' and 'Port' fields. At the bottom are 'OK' and 'Cancel' buttons.

- **Service Port:** Set up the port number for connection to the Mobile service.
- **External IP Address:** Set up the external IP address and port number for connection to the selected service from an external network.

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



The 'Log' dialog box shows log search options. It has 'From' and 'To' sections. 'From' has a radio button for 'First' (selected) and a date/time field showing '2009-12-28' and '12:04:49'. 'To' has a radio button for 'Last' (selected) and a date/time field showing '2009-12-28' and '3:42:15'. A 'Search' button is on the right. Below is a table of log entries.



Time	Description
2009-12-28 15:42:15	Start INEX
2009-12-28 15:42:15	Install INEX

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

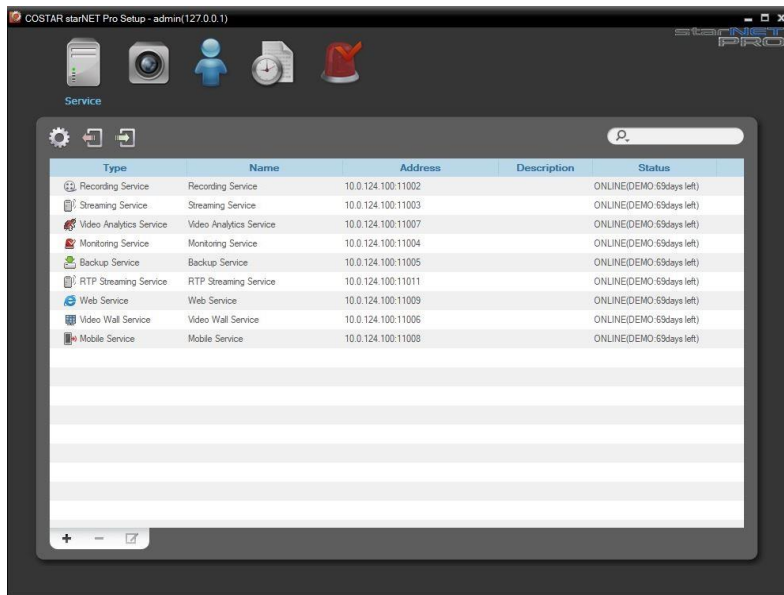
- **Service:** Displays the list of services supported by the current server.
 - **Administration Service:** Manages information of services, devices, users and schedules for operating the COSTAR starNET Pro program. When the administration service is not working, the COSTAR starNET Pro program does not work.
 - **Monitoring Service:** Notifies live events and callback events detected at the device registered in the administration service to the Client system. Only one monitoring service can be registered on an administration service.
 - **Streaming Service:** Streams images from devices to multiple client systems simultaneously.
 - **Video Analytics Service:** Enables video analytics function.
 - **Person Match Service:** By using the COSTAR starNET Pro VA function, it allows you to search for the person the person you are looking for.
 - **RTP Streaming Service:** Relays video and audio data of devices connected to the streaming service using the RTSP protocol.
 - **Backup Service:** Back up the recorded videos.
 - **Mobile Service:** Supports live video monitoring service on mobile phone.
- **Status:** Displays the working status of each service.
 - **Starting:** Indicates the service started running.
 - **Opening DB:** Indicates the COSTAR starNET Pro system is opening the database files.
 - **Initializing:** Indicates the service is being initialized.
 - **Working:** Indicates the service is working properly. You can operate the services and Client program.
 - **Stopping:** Indicates the service is being stopped.
 - **Stopped:** Indicates the service was stopped by a user. You cannot operate the services and Client program, and the system does not record.
 - **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. 41) for details about Watchdog settings.
 - **Initialize Storage:** Initializes the storage space of recording and backup services.
 - **Video Analytics Engine Initialization:** Initializes the engine of VA service and Person Match service.
- **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 COSTAR starNET Pro system.

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

Run the COSTAR starNET Pro Setup program.

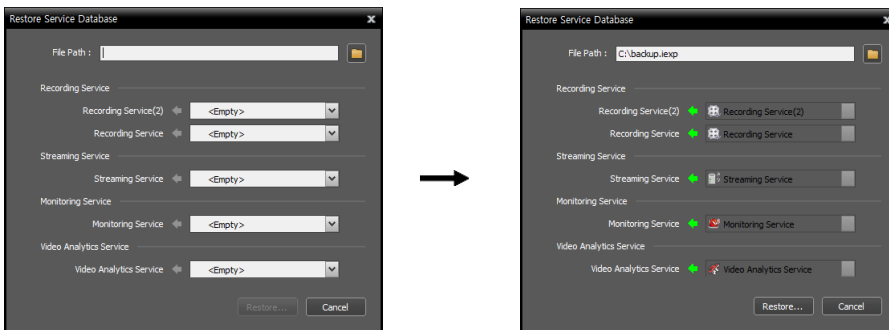







Service Database Backup

Click the  (Service Database Backup) button → Set up the password for the backup file when saving → 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 → Select a file and enter the corresponding password → Services that are connected to the current administration service 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 administration service, the services in the setup file will be applied automatically → Click the Import button at the bottom → The COSTAR starNET Pro 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 .
- When the type or number of the services to the left and right of the  icon differs.

4.3 Setup

Go to the Start Menu → Click COSTAR starNET Pro → Run the COSTAR starNET Pro Setup program and enter login information. Refer to 3.2 Log In (p. 26) for details about the login.



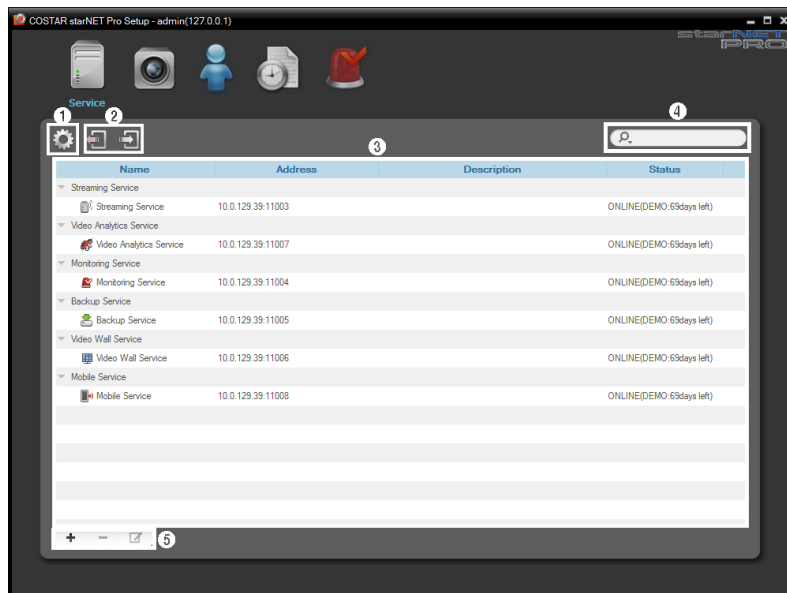
- **Service:** Allows you to register and manage services and storage. Refer to Service (p. 49) for details.
- **Device:** Allows you to register and manage sites. Refer to Device (p. 55) for details.
- **User:** Allows you to register and manage users or user groups. Refer to User (p. 56) for details.
- **Event Management:** Allows you to set up event management schedules. Refer to Event Management (p. 58) for details.

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



- No monitoring service is registered.

Service

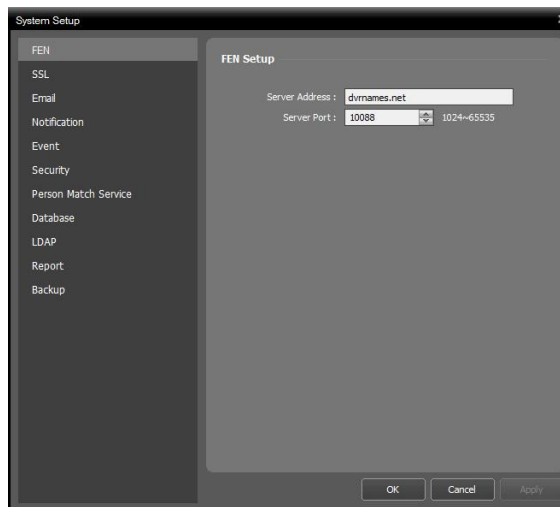
The Service menu allows you to register and manage services and storage.



- ① (System Setup): Sets up COSTAR starNET Pro system information.
 - FEN: Allows you to enter information of the FEN server on which a device is registered if there is a device that uses FEN function. If this setting is not correct, registration of the device and connection to the device will not be made.
 - SSL: Allows you to enhance the security of data transferred between services of the COSTAR starNET Pro program by using the SSL (Secure Sockets Layer) protocol. Using the SSL function might cause congestion in the COSTAR starNET Pro system depending on the security level. Log in to the COSTAR starNET Pro 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 COSTAR starNET Pro Setup and COSTAR starNET Pro Client programs are logged out.
 - Email: Allows you to enter the SMTP server information. The COSTAR starNET Pro system can send an email to preset Client users when an event is detected or to specific recipients when any services are disconnected from the administration service. Refer to 16.1 Setting up Event Management Schedule (p. 178) for details.
- ② (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 COSTAR starNET Pro system. Refer to 4.2 Service Manager, Service Database Backup/Restore (p. 47) for details.

- ③ **Service List:** Displays list of services supported in the COSTAR starNET Pro program. Clicking the arrow button (▶) beside each service displays the list and information about services registered in the COSTAR starNET Pro 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 administration service. 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.

System Setup

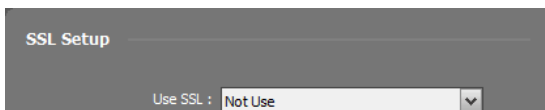


FEN



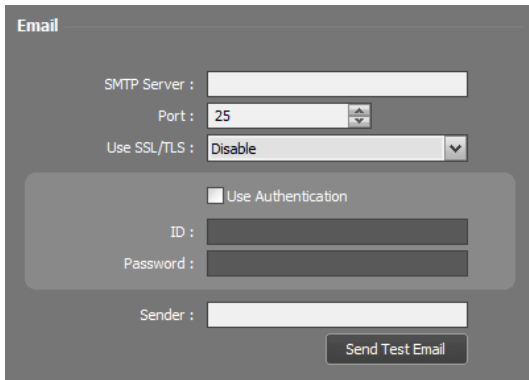
This allows you to set the FEN server for registering a device that uses FEN function. If this setting is not correct, registration of the device and connection to the device will not be made.

SSL



This allows you to enhance the security of data transferred between services of the COSTAR starNET Pro program by using the SSL (Secure Sockets Layer) protocol. Using the SSL function might cause congestion in the COSTAR starNET Pro system depending on the security level. Log in to the COSTAR starNET Pro 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 COSTAR starNET Pro Setup and COSTAR starNET Pro Client programs are logged out.

Email

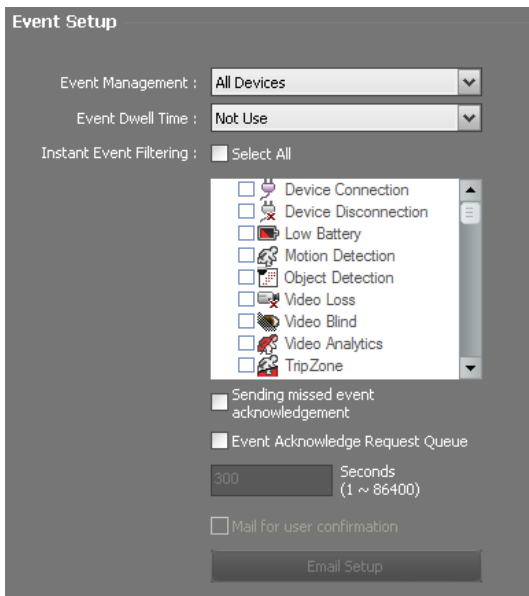


The Email configuration window includes the following fields and options:

- SMTP Server : [Text Input]
- Port : 25 [Dropdown]
- Use SSL/TLS : Disable [Dropdown]
- ☐ Use Authentication
- ID : [Text Input]
- Password : [Text Input]
- Sender : [Text Input]
- Send Test Email [Button]

This allows you to enter the SMTP server information. The COSTAR starNET Pro system can send an email to preset Client users when an event is detected or to specific recipients when any services are disconnected from the administration service. Refer to 16.1 Setting up Event Management Schedule (p. 175) for details.

Event



The Event Setup window includes the following fields and options:

- Event Management : All Devices [Dropdown]
- Event Dwell Time : Not Use [Dropdown]
- Instant Event Filtering : ☐ Select All
- ☐ Device Connection
☐ Device Disconnection
☐ Low Battery
☐ Motion Detection
☐ Object Detection
☐ Video Loss
☐ Video Blind
☐ Video Analytics
☐ TripZone
- ☐ Sending missed event acknowledgement
- ☐ Event Acknowledge Request Queue
- 300 Seconds (1 ~ 86400)
- ☐ Mail for user confirmation
- Email Setup [Button]

Set up the Event Management schedule option.

- **Event Management**
 - **Monitoring Devices:** Notices of events detected at the currently monitoring cameras in the Live or Map panel.
 - **All Devices:** Notices of events detected at cameras registered on the administration service.
- **Event Dwell Time:** The administration service does not notify you of the same type of events detected for the same camera within the specified period of time after the first event occurs.
- **Instant Event Filtering:** The administration service does not notify Client of the selected event even if the event is detected, except for Event Management schedule.

- ☒ **Sending missed event acknowledgement:** Saves event acknowledgement if a recipient user has not logged on, and notifies the missed acknowledgement when the user logs on.
- ☒ **Event Acknowledge Request Queue:** If a recipient user does not check the received event for the preset period of time, the event is forwarded to the monitoring group's user. Refer to Chapter 15 — User Management, Advanced Setup (p. 172) for details about the monitoring group. Refer to Chapter 16 — User Management (p. 190) for details about the event forwarding.
- ☒ **Mail for user confirmation:** Sends a confirmation mail to the user when event acknowledgment is forwarded.

Notification

Notification

Recipient : +

☐ Notification service connection

☐ Notification of Disk Almost Full

99 %

☐ Notification of Disk Bad

50 %

☐ Notification of Record Storage Error

The COSTAR starNET Pro system can send email notifications about the status of the storage hard disk or service disconnections.

- **Recipient:** Clicking the **+** button at the bottom allows you to enter email addresses of the recipients.
- ☒ **Notification of service disconnection:** Sends an email to the recipients when any services are disconnected from the administration service.
- ☒ **Notification of Disk Almost Full:** Sends an email to the recipients when the system detects that the defined percentage of the hard disk storage space is being used.
- ☒ **Notification of Disk Bad:** Sends an email to the recipients when the system detects the defined percentage of physical bad sectors on the hard disk.
- ☒ **Notification of Record Storage Error:** Sends an email to the recipients when the system detects errors (internal loss) in the record storage.

Security

Security

☒ Allow the Client to Log In with Version Mismatch.

☒ Allow Login with Default Password

☒ Use the option of 'No Password'

☒ Use the same ID

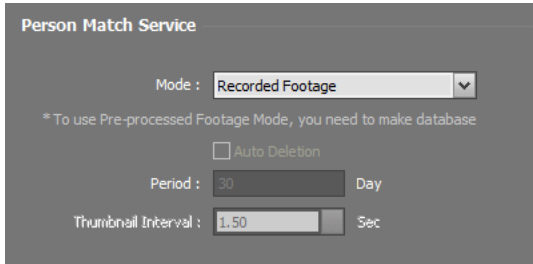
☐ Auto Logout

5 Minute

Set up the security option.

- ☒ **Allow the Client to Log In with Version Mismatch.:** Sets the login allowance when the Client version is unmatched with the administration service.
- ☒ **Allow Login with Default Password:** Sets the login allowance with default password used when you create account.
- ☒ **Use the option of 'No Password':** Enables or disables No Password option in the password change screen when logging into Client if the password is expired or Allow Login with Default Password is unchecked.
- ☒ **Use the same ID:** Allows using the same ID to access at the same time.
- ☒ **Auto Logout:** Allows automatic logout when there is no action for the specific amount of time.

Person Match Service



Person Match Service

Mode :

* To Use Pre-processed Footage Mode, you need to make database

☐ Auto Deletion

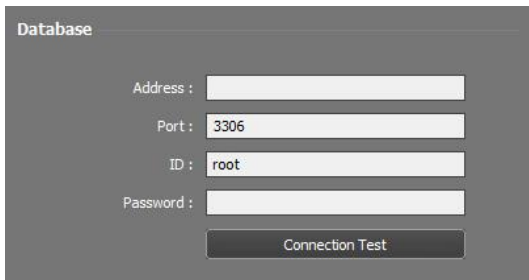
Period : Day

Thumbnail Interval : Sec

Set up the Person Match service option.

- ☒ **Mode:** Select a footage mode for Person Match search.
 - **Recorded Footage:** Search for Person Match within recorded footage.
 - **Pre-processed Footage:** Search for Person Match within footage saved in the Person Match database.
- ☒ **Auto Deletion:** Select to automatically delete the saved meta data.
- **Period:** Set up the period for the auto deletion option.
- **Thumbnail Interval:** Set up the interval of metadata to be stored in the Person Match database.

Database



Database

Address :

Port :

ID :

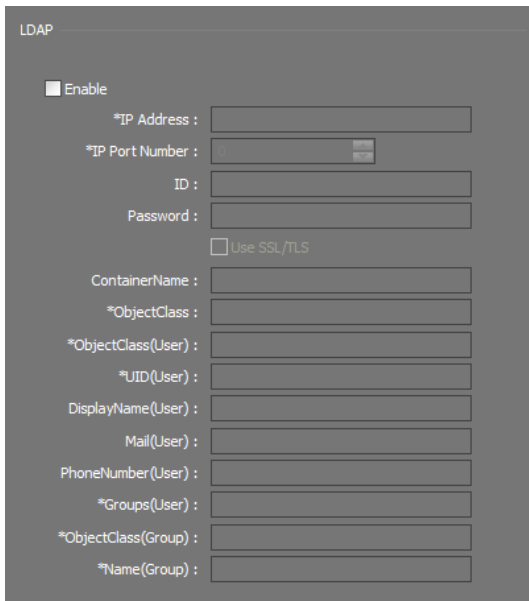
Password :

Set up the database option.

- **Address, Port, ID, Password:** Enter the database server address, port, ID and password.
- **Connection Test:** Tests the database server connection.

NOTE: mariaDB 10.4 must be installed in the DB server in prior.

LDAP



LDAP

☐ Enable

*IP Address :

*IP Port Number :

ID :

Password :

☐ Use SSL/TLS

ContainerName :

*ObjectClass :

*ObjectClass(User) :

*UID(User) :

DisplayName(User) :

Mail(User) :

PhoneNumber(User) :

*Groups(User) :

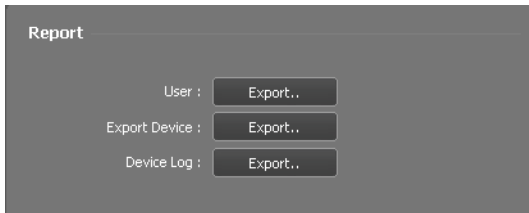
*ObjectClass(Group) :

*Name(Group) :

Set up the LDAP options.

- ☒ **Enable:** Enables the LDAP option.
- **IP Address:** Enter the IP address of the LDAP server.
- **IP Port Number:** Enter the port number of the LDAP server.
- **ID/Password:** Enter the ID/password for the LDAP server.

Report

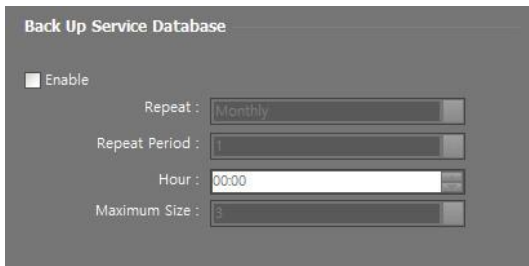


The 'Report' window contains three rows of controls. Each row has a label on the left and an 'Export..' button on the right. The labels are 'User :', 'Export Device :', and 'Device Log :'. The buttons are 'Export..', 'Export..', and 'Export..' respectively.

Set up the report options.

- **User:** Report the user information as an xml file.
- **Device Export:** Report the device information as a file.
- **Device Log:** Report the debug log of the device as a file.

Backup



The 'Back Up Service Database' window has a title bar and several controls. At the top left is a checkbox labeled 'Enable'. Below it are four rows of controls, each with a label and a dropdown menu. The labels are 'Repeat :', 'Repeat Period :', 'Hour :', and 'Maximum Size :'. The dropdown values are 'Monthly', '1', '00:00', and '3' respectively.

Set up the backup options.

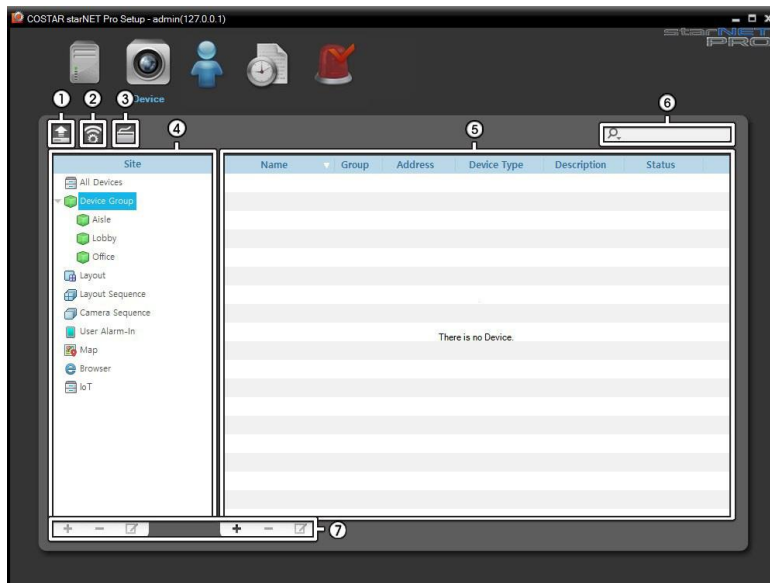
When this option is enabled, ISS setting is automatically saved according to the configured repeat and time settings.

The path is created under the folder, ISSinstallationpath\Server\Profile\DbMirrors.

Maximum Size refers to the number of backups.

Device

The Device menu allows you to register and manage sites.

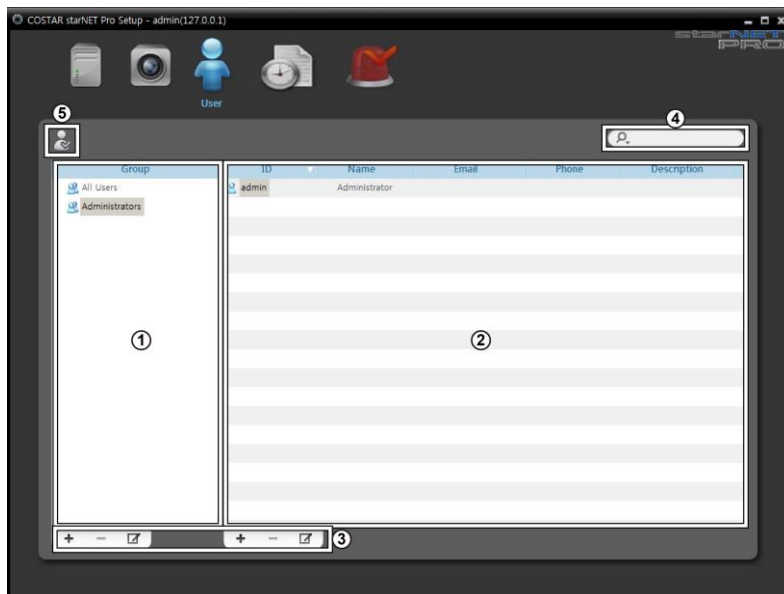




- ① (Multiple Firmware Upgrade): Allows you to upgrade software for several devices at the same time. Refer to 14.2 Managing Devices, Changing Device's Setting Remotely(p. 162) for details.
- ② (Multiple Remote Setup): Allows you to change settings of several devices at the same time using a setup file. Refer to 14.2 Managing Devices, Changing Device's Setting Remotely(p. 162) 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 25— Controlling With a Network Keyboard (p. 257) for details.
- ④ **Site Panel:** Displays site group lists supported by the COSTAR starNET Pro program.
- ⑤ **Site List Panel:** Displays the list and information about sites registered in each group. Refer to Appendix – Network Disconnection Log (p. 269) 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.
- 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 COSTAR starNET Pro system considers the device as a new device (network video devices only). Refer to Chapter 14 — Device Management (p. 147) for details about registering a device or device group, or Chapter 5 — Live Video Monitoring (p. 76) for details about registering a layout or sequence.

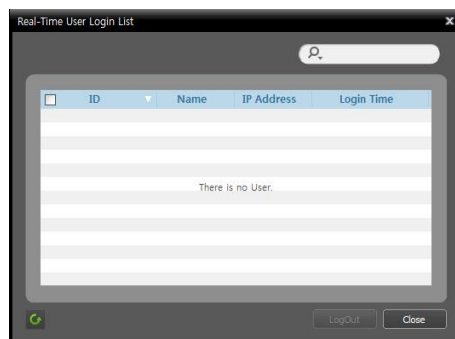
NOTE: In this document, a “site” refers to a device group, layout or sequence registered on the administration service.

User

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

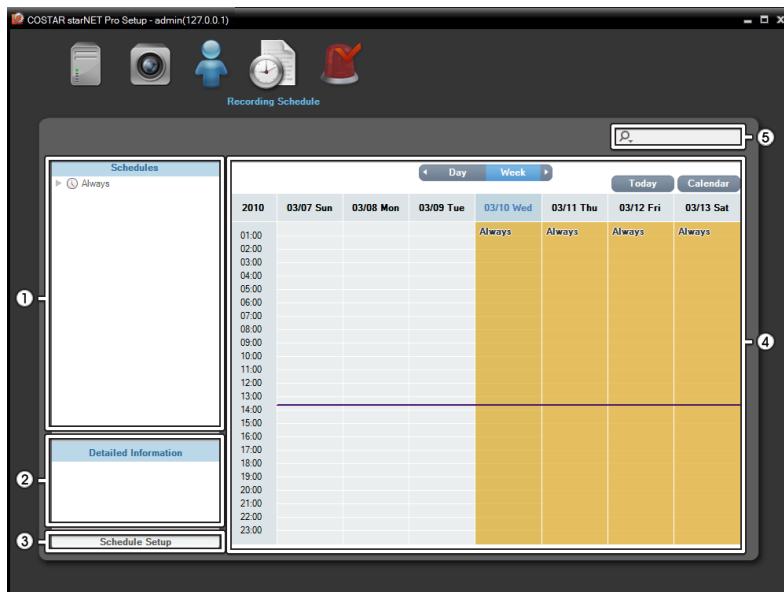


- ① **Group Panel:** Displays a user group list. The Administrators group has authority to perform all functions, and the authority settings cannot be edited.
- ② **User List Panel:** Displays the list and information about users registered in each group.
- ③  (Incremental Search): Allows you to search 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.
- ⑤ **Real-Time User Login List:** Allow you to check users on Client in real-time and you can log out any user from the list.



Recording Schedule

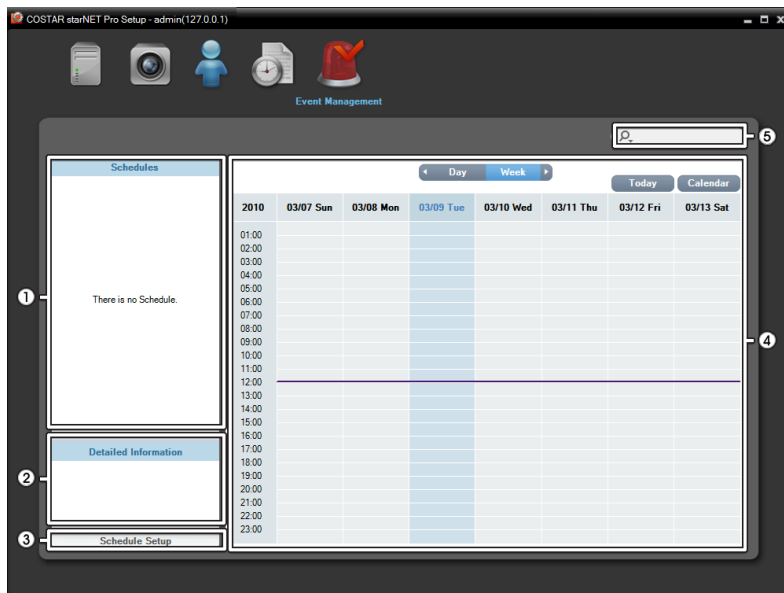
The Recording Schedule menu allows you to set up the schedule for recording.



- ① **Schedule Panel:** Displays a registered schedule list. The COSTAR starNET Pro 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 create and manage recording schedules for scheduled recording or configure the settings for instant recording.
- 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 **[Magnifying Glass Icon]** (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

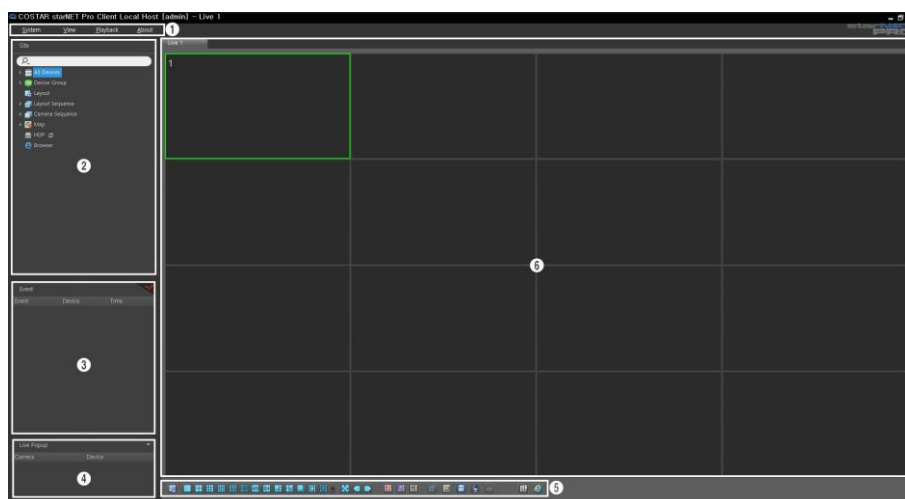
The Event Management menu allows you to set up event management schedules.



- ① **Schedule Panel:** Displays a registered schedule list. The COSTAR starNET Pro 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 16.1 Setting up Event Management Schedule (p. 178) 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 **[P] (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.

4.4 Client

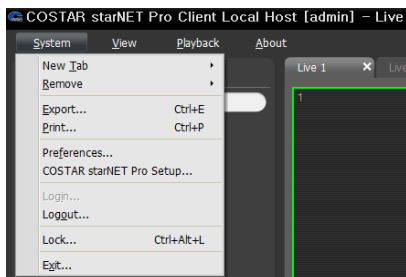
Go to the Start Menu → Click COSTAR starNET Pro → Run the COSTAR starNET Pro Client program and enter login information. Refer to 3.2 Log In (p. 26) for details about the login.



- ① **Menu:** Allows you to control the Client program. Refer to [Menu](#) (p. 60) 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. 61) for details.
- ③ **Instant Event List:** Displays live and callback events from registered devices. Refer to [Chapter 8 — Event Handling](#) (p. 124) for details. Clicking the ♥ button displays the **Event Manager** panel. Refer to [16.1 Setting up Event Management Schedule](#) (p. 178) for details. Event related functions may not be supported depending on the protocol that the device uses and the device model. Ask your dealer or distributor for details.
- ④ **Live Popup List:** Displays the list of live popup screens currently displayed on the monitor. Refer to [16.2 Managing Events, Live Popup](#) (p. 193) 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. 76) or [Chapter 7— Recorded Video Playback & Exportation](#) (p. 107) for details.
- ⑥ **Panel:** Allows you to select which panel to use. Refer to [Panel](#) (p. 62) for details.

Menu

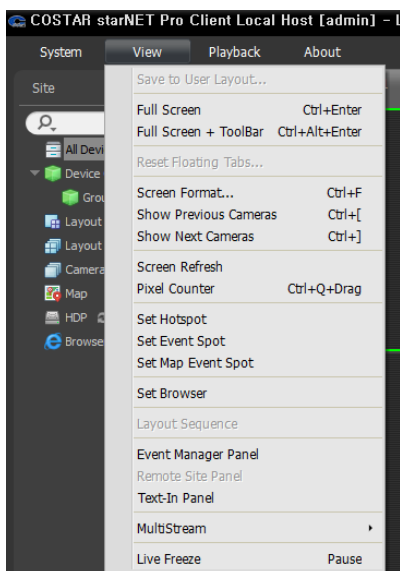
System



- **New Tab:** Adds panels. A maximum of 12 panels are supported for Live, 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 – maximum 8 panels, 2 for each panel, in a 32-bit system). One of each is supported for Event, Event History, Report, Self-Diagnosis and Status panels.
- **Remove:** Removes selected devices or cameras or all cameras from Live or DVR Search 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. 60) for details.
- **COSTAR starNET Pro Setup:** Runs the Setup program.
- **Login, Logout:** Logs in or logs out the Client program.
- **Lock:** Locks Costar starNET Pro Program. Once the program is locked, it will no longer be accessible and a password entry field will appear. Enter password to unlock.
- **Exit:** Exits or restarts the Client program.

View

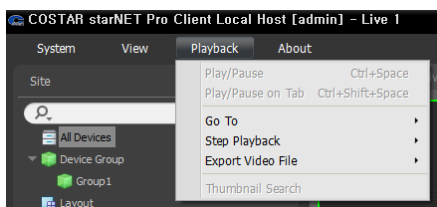


- **Save to User Layout:** Registers the screen division and device connection status of the selected Live or Plays panel as a user layout.
- **Full Screen:** Displays the selected Live or Play panel in full-screen format.
- **Full Screen + Toolbar:** Displays the selected Live or Play panel in full-screen 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.
- **Screen Refresh:** Refresh the video in the screen pane in the Live or Plays tab.
- **Pixel Counter:** Shows the information of the pixel of the selected area in Live or Plays.
- **Set Hotspot:** Sets up a selected camera screen as a hotspot screen. Refer to 5.1 Monitoring Video, Hotspot Setup (p. 78) 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. 78) 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. 78) for details.
- **Browser:** Sets up the selected screen as a browser screen. Refer to Chapter 5 — Live Video Monitoring, Browser Screen Setup (p. 79) for details.

- **Layout Sequence:** Starts or stops the layout sequence. Refer to 5.1 Monitoring Video, Layout Sequence Monitoring (p. 83) for details.
- **Event Manager Panel:** Displays an event manager panel. Refer to Chapter 16 — Event Management (p. 175) for details.
- **Remote Site Panel:** Displays or hides a site list in the floating panel or full screen. Not every panel supports this function.
- **Text-In Panel:** Shows the text-in panel. It also displays the text results on the panel.
- **MultiStream:** Desired stream can be selected if multi-stream mode is enabled for the live video of the device.
- **Live Freeze:** Freezes all screens of the selected live tab.

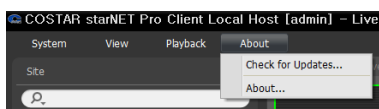
Playback



- **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. 106) for details.
- **Step Playback:** Moves the video forward or backward in the frame or time unit.

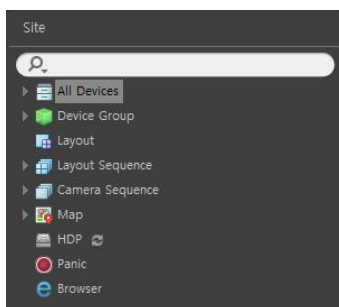
- **Export Video File:** Exports recorded video as a self-player file (.exe) or an AVI file (.avi).
- **Thumbnail Search:** Displays snapshot of images recorded during the event-based recording (event and pre-event) in the Play panel. Refer to 7.1 Playing back Recorded Video, Thumbnail Search (p. 111) for details.

About



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

Site List

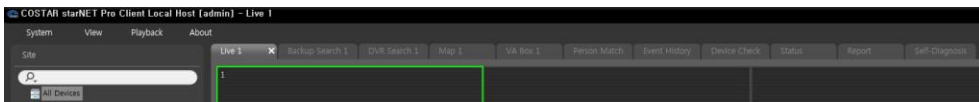


Displays the list of registered sites.

- **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 administration service. 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. 76) or 7.1 Playing back Recorded Video (p. 105) for details.

- **Layout:** Displays the list of registered layout groups and 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. 76) or 7.1 Playing back Recorded Video (p. 107) 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. 83) 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. 85) 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. 86) for details.
- **Browser:** Displays the list of registered browsers. Clicking a browser in the list, and dragging and dropping it in the desired location on the screen launches the web browser. Refer to 5.3 Launching Browser (p. 88) for details.
- **Panic:** Displays the list of devices if there is any device for which panic recording has been done (supported only when Panic Recording on Local Client PC is selected). Refer to 6.1 Setting up Panic Recording (p.105) for details.

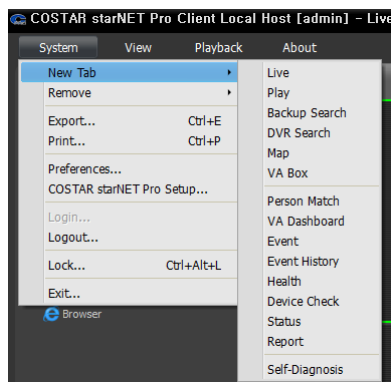
Panel



- **Live:** Displays live images. Refer to 5.1 Monitoring Video (p. 76) for details.
- **Backup Search:** Allows you to play backed-up video from a backup server. Refer to the COSTAR starNET Pro Backup user's manual for details. This is supported only when Backup Services are registered in the COSTAR starNET Pro program. Ask your dealer or distributor about purchasing the COSTAR starNET Pro Backup software.
- **DVR Search:** Allows you to play back video recorded in DVRs, Client system, or SD (SDHC) memory cards inserted to network cameras using the DirectNET protocol. Refer to Chapter 7 — Recorded Video Playback & Exportation (p. 107) for details.
- **Map:** Displays maps. Refer to 5.2 Map Monitoring (p. 86) for details.
- **VA Box:** Displays video analytics results using devices connected with VA box. Refer to Chapter 21— VA Box (p. 236) for details.
- **Person Match:** Displays the Person Match search results using Person Match service. Refer to Chapter 22— Person Match Service (p. 240) for details.
- **Event History:** Displays log entries of events displayed on the Event Manager panel. Refer to Chapter 16 — Event Management (p. 178) for details.
- **Report:** Displays log entries of the COSTAR starNET Pro program. Refer to Chapter 10 — Log Search (p. 131) for details.
- **Device Check:** Displays the results of self-diagnostics for the devices registered on the administration service (supported only for devices which use the DirectNET protocol). Refer to 9.2 Device Check (p. 127) for details.
- **Status:** Displays the status of a desired device in real-time (supported only for devices which use the DirectNET protocol). Refer to 9.3 Status Monitoring (p. 128) for details.
- **Self-Diagnosis:** Displays the status of a recorder's system, network and camera status (supported only for devices which support the self-diagnosis). Refer to 9.3 Status Monitoring (p. 128) 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.

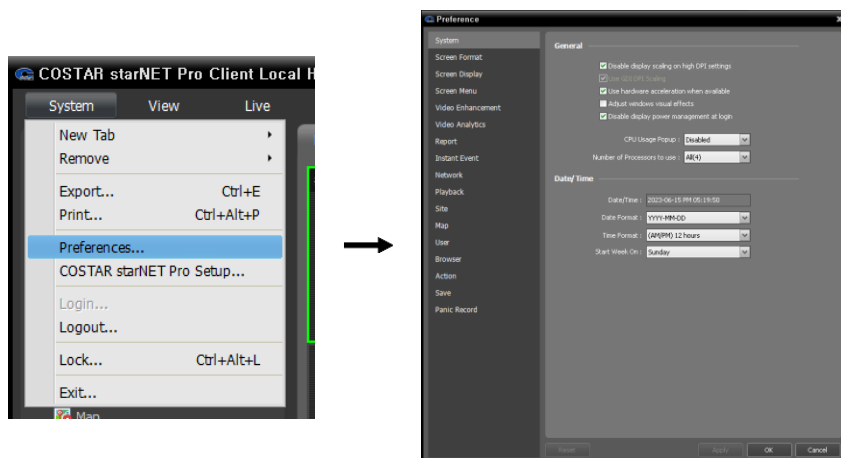
Floating/Docking Panel

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.

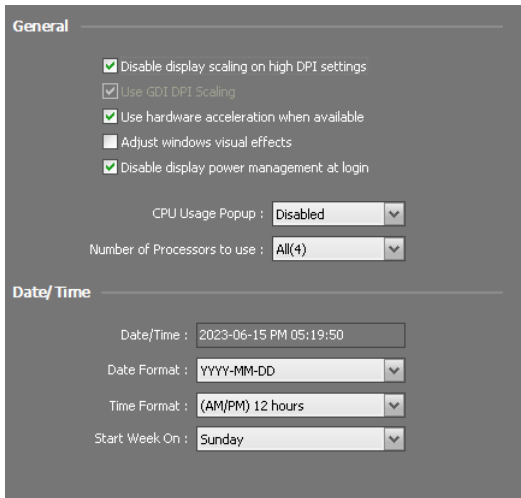
- Maximizing a floating panel: Clicking the window maximize/restore button in the upper-right corner of the floating panel maximizes or restores the window. Only one of each panel type can be maximized.
- Displaying/hiding a site list in the floating panel: Clicking the right mouse button in the camera 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 supported for not 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.



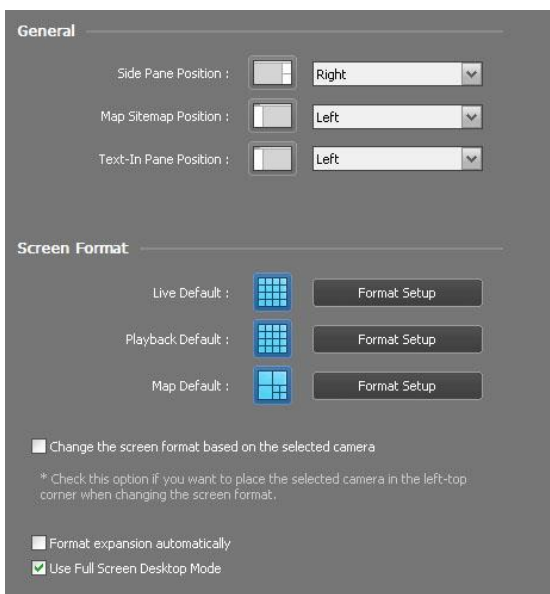
System



- ☒ **Disable display scaling on high DPI settings:** Uncheck to change the size of the client program according to the DPI scale.
- ☒ **Use GDI DPI Scaling:** Makes text more visible on high DPI displays. This function is activated only when the operating system supports Use GDI DPI Scaling and Disable display scaling on high DPI settings function is disabled.
- ☒ **Use hardware acceleration when available:** Use this function in an environment that meets certain conditions.
- ☒ **Adjust windows visual effects:** Choose whether to change the window visual effects settings.

- ☒ **Disable display power management at login:** Uncheck to apply the display power management option.
- **CPU Usage Popup:** An alert message will pop up when the CPU usage of the Client system exceeds the assigned percentage.
- **Number of Processors to use:** Set up the number of processors to use during the COSTAR starNET Pro program running. It allows you to limit the CPU usage for the COSTAR starNET Pro program running.
- **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.

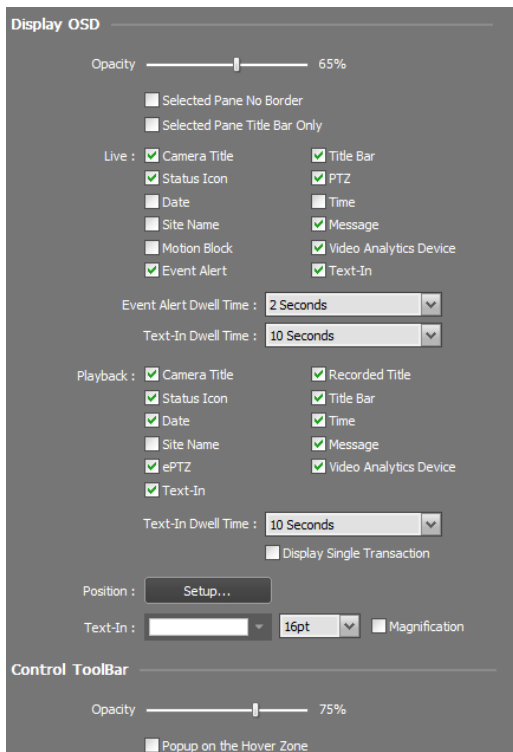
Screen Format



- **Side Pane Position, Map Sitemap Position, Text-In Pane Position:** Set up the position of side panels, the position of the root map list in the Map panel, and the position of the text-in panels.
- **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.
- ☒ **Format expansion automatically:** The screen format changes automatically corresponding the number of connected camera when the number of connected camera increases.

- ☒ **Use Full Screen Desktop Mode:** The selected tab is added to the Client screen of the task bar in full screen mode. When minimizing the Client screen, the full screen tab is not minimized.

Screen Display



- **Display OSD:** Sets up the OSD display setting and information to be displayed on a camera screen.
 - **Opacity:** The slide bar allows you to adjust the opacity of OSD (On Screen Display).
 - ☒ **Selected Pane No Border:** Does not display a border on a currently selected camera screen during monitoring or playback.
 - ☒ **Selected Pane Title Bar Only:** Displays the title bar on a currently selected camera screen during monitoring or playback.
 - **Live, Playback:** Sets up OSD information to be displayed.
 - ☒ **Camera Title:** Displays the camera name set in the COSTAR starNET Pro program.
 - ☒ **Title Bar:** Separates the title display area from an image display area at the top.
 - ☒ **Recorded Title:** Displays the camera name which was set up during recording.

- ☒ **Status Icon:** Displays status OSD.
 - (Orange): Panic recording
 - PTZ mode
 - Camera sequence mode
 - Zoom mode
 - Two-way audio communication mode
 - Image effect mode
 - Color control mode (Play image only)
 - Freeze mode (Live image only)
- ☒ **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 administration server.
- ☒ **Event Alert, Event Alert Dwell Time:** 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 DirectNET protocol).
- ☒ **ePTZ:** Displays the guide GUI (Graphic User Interface) when you control PTZ in the fisheye camera.
- ☒ **Site Name:** Displays the device name. This will be displayed only when the device name is different from the camera title.
- ☒ **Message:** Displays a screen message. Refer to **Network** (p.67) for details about the screen message.
- ☒ **Video Analysis Device:** Displays the video analysis information as default.

- ☒ **Text-In:** Displays the text-in information on the screen when a text-in event occurs in the device or COSTAR starNET Pro system (1x1 screen format only). This feature is supported only for devices which use the DirectNET protocol.
- **Text-In Dwell Time:** Allows you to set text-in dwell time for each live/playback.
- ☒ **Display Single Transaction:** Displays only single text-in (transaction) for playback.
- **Position:** Allows you to change the position of the OSD, OSD text size and OSD margin.
- **Text-In:** Allows you to change the color and size of the text-in.
- **Control Toolbar:** Adjusts the opacity of the control toolbar on the camera screen.
- ☒ **Popup on the Hover Zone:** Toggles on/off the toolbar by a mouse cursor position in the hover zone.



Camera Title,
Status Icon, Date/Time



Event Alert

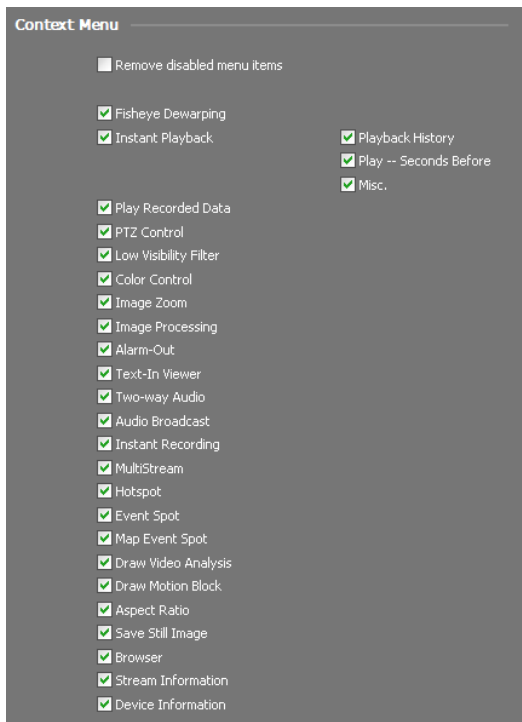


Motion Block



Control Toolbar

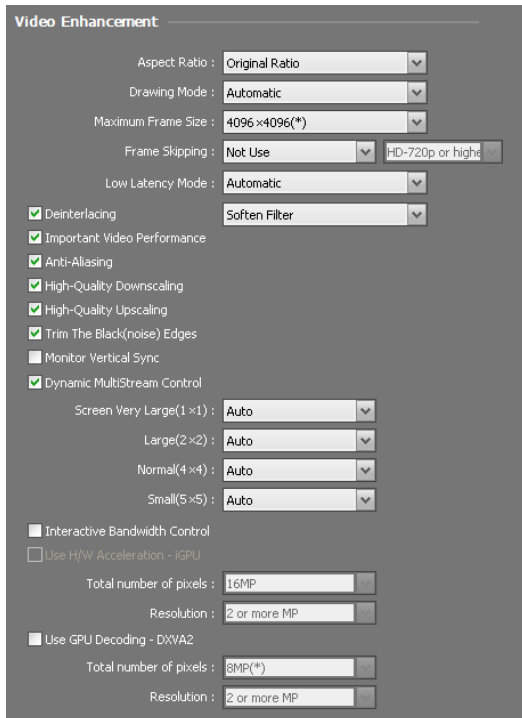
Screen Menu



Enable or disable menu items of the context menu on the Live tab.

- **Remove disabled menu items:** Remove disabled menu items from the context menu.

Video Enhancement

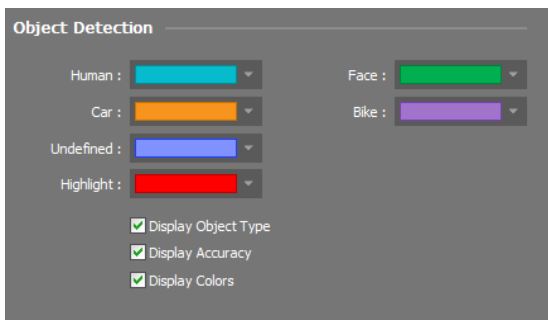


- **Aspect Ratio:** Select the proper image aspect ratio.
 - **Original Ratio:** Fits images within the screen size while maintaining their original ratio.
 - **Fit to Screen:** Fits images to the screen size regardless of the aspect ratio.
 - **Fit to Screen (Smart):** Fits images according to the extra spaces, to the “Fit to Screen” or “Actual Size”.
 - **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, Draw Video Analytics.
 - **Actual Size (x1):** Displays images in their original size.
- **Drawing Mode:** Select the drawing mode standard to display video on the screen. The color quality or display performance of video might be affected depending on the drawing mode standard selected.

- **Maximum Frame Size:** Select the maximum frame size to display on screen.
- **Frame Skipping:** Select the frame skipping to enhance video performance if the video exceeds the decoding specification.
- **Low Latency Mode:** Minimizes frames to be decoded in parallel to reduce DPB (Decoded Picture Buffer). (This feature requires high specification as it reduces buffering, parallel processing and post processing.)
- ☒ **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.
- ☒ **Important Video Performance:** Gives priority to display speed over the display quality on the screen when displaying video.
- ☒ **Anti-Aliasing:** Enhances image display quality of video on the screen by eliminating stair-stepping (aliasing) effects in the enlarged image.
- ☒ **High-Quality Downscaling/Upscaling:** Keeps the display quality on the screen when downscaling/upscaling video.
- ☒ **Trim The Black (noise) Edges:** Trims the black line (noise) displayed at the edge of the image.
- ☒ **Monitor Vertical Sync:** Improves tearing artifact caused when the monitor’s scanning line retracing speed is slow (1x1 screen format only). This might increase the CPU load.
- ☒ **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 COSTAR starNET Pro 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.
- ☒ **Use H/W Acceleration – iGPU/NVIDIA:** Enables hardware acceleration in the COSTAR starNET Pro program. It may enhance processing of HD (high-definition) video. This option is available only when hardware acceleration is enabled in your PC. H/W Acceleration – NVIDIA is activated when the NVIDIA graphic card is mounted.
- ☒ **Use GPU Decoding – DXVA2:** Enables GPU decoding in the COSTAR starNET Pro program. It may enhance processing of HD (high-definition) video. This option is available only when GPU decoding is enabled in your PC.

Video Analysis



- **Color Settings:** Set the color of the image analysis result overlaid on the image by object type.
- **Display Object Type:** Displays the object type in the image analysis result.
- **Display Accuracy:** Displays the accuracy of the video analysis results.
- **Display Colors:** Displays the colors of the video analysis results.

Report



- **Number of results displayed on the 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).
- **Update Interval:** Allows you to set up the status update interval in the Device Check panel. Refer to 11.1 Device Check (p.117) for details about the device check function.
- **Connection Retry Count:** Set up the maximum number of connection retries.
- **Status Request Timeout:** Set up the maximum waiting time for device status request.
- ☒ **Save problem status as:** Save the log of the selected problem items as PDF or CSV according to the update interval. Set up the storage folder with a title and password(PDF only).

- ☒ **Popup problem status notification:** Display a popup notification when a problem occurs from the selected problem items according to the update interval. The popup notification displays issue related information, and click Self-Diagnosis to start the self-diagnosis.
- **Popup Timeout:** Set the time for automatic closing of the problem status popup window. Select Infinite for a user to manually close the popup.

Instant Event

Instant Event

☒ Use Event Panel

Time Range : 1 Hour

* 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 (1024~65535)

Live Text-In Time Range : 1 Hour

Event Sound

☐ Motion Detection : \\WINEX\WClient\WEventSound.wav

☐ Object Detection : \\WINEX\WClient\WEventSound.wav

☐ Video Loss : \\WINEX\WClient\WEventSound.wav

☐ Video Blind : \\WINEX\WClient\WEventSound.wav

☒ Auto disable when Two-way Audio is on.

Event Spot

Event monitoring dwell : 20 Sec

Minimum monitoring dwell : 2 Seconds

Intercom

Call Request Receiving : Notification

- ☒ **Use Event Panel:** Displays the Instant Event List panel. Unchecking the box hides the panel.
- **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 COSTAR starNET Pro 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.

- **Live Text-In Time Range:** Set up the length of time for a text-in data to be displayed when a text-in event occurs. You can check the text-in data in the text-in viewer window within the time range since the text-in event occurred.
- **Event Sound:** Set up to sound by playing back an audio file when an event is notified in the Instant Event list. 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.
 - ☒ **Auto disable when Two-way Audio is on:** Set up to automatically turn off the event sound when using the two-way audio.
- **Event Spot:** Video from the event-detected camera is displayed on the event spot screen when an event is notified in the Instant Event list.
 - **Event monitoring dwell:** Set up the duration for video to be displayed on the 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 expires.
- **Intercom:** When the intercom call is received, when an event is detected, a pop-up screen appears.
 - **Not Use:** Do not specify the setting when a call request is received.

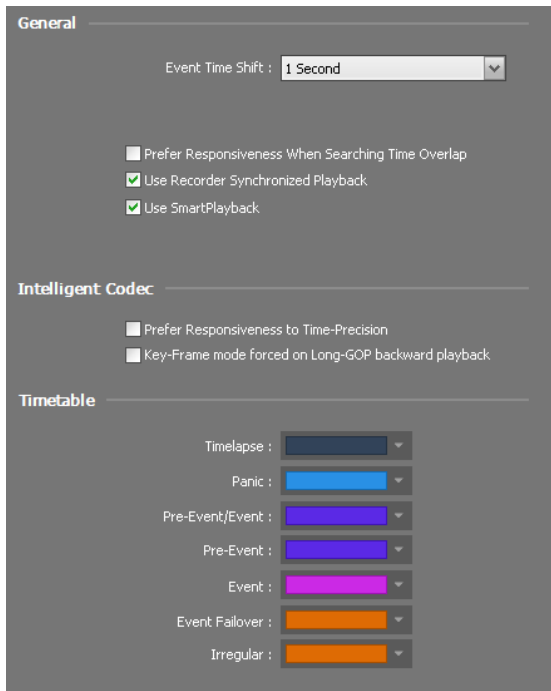
- Notification: Display the intercom notification popup.
- Intercom Popup: Display the intercom popup.

Network

The screenshot shows the 'Network' configuration window with three tabs: 'General', 'RTP', and 'Network Keyboard'.
General Tab:
 - 'Buffering for HD Live' is set to 'Short term(*)'.
 - 'Live image no frames detect interval' is set to '10 seconds'.
 - 'Disconnection Message' has a 'Setup...' button.
RTP Tab:
 - 'RTP Incoming Port Range' is set from '7000' to '7999'.
 - 'Don't display broken frames' has two options: 'Live' (unchecked) and 'Playback' (unchecked).
 - 'Buffering Frame Count' is set to '3'.
Network Keyboard Tab:
 - 'Use Network Keyboard' is checked.
 - 'Control Port' is set to '8010'.
 - 'Use large mouse cursor' is checked.
 - 'Use the arrow buttons to select a pane.' is unchecked.
 - 'Use MFZ camera control' is unchecked.

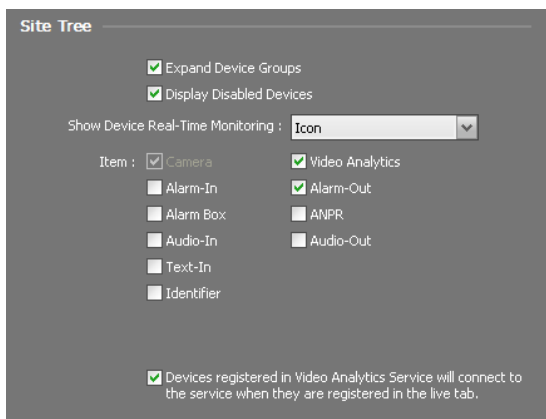
- ☒ **Buffering for HD Live:** Displays images on the screen more smoothly by using short term/long term buffering when monitoring HD video images (supported only for devices with codec information on the frame). Buffering may be delayed or real-time monitoring may decrease depending on the network environment.
- **Live image no frames detect interval:** Set up the interval to check video frame transfer from a device to the COSTAR starNET Pro system. A message will be displayed on the camera screen when no video frame is transferred during the period.
- **Disconnection Message:** Allows you to change the text of the screen message displayed when a device is disconnected or the screen message displaying the camera status when you connect to the device. Click the **Setup** button, check the box beside each message and change the text.
- **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.
 - ☒ **Use large mouse cursor:** Enlarges the mouse cursor size.
 - ☒ **Use arrow buttons to select a pane:** Allows you to select a pane with arrow buttons on a Network Keyboard.
 - ☒ **Use MFZ camera control:** Allows you to control MFZ camera's Focus and Zoom functions by using a joy stick and a shuttle.

Playback



- **Event Time Shift:** Set up to search the frame before the specific time based on the event-related frame time.
- ☒ **Prefer Responsiveness When Searching Time Overlap:** When searching for a section in which many segments exist, the search is performed by limiting the number of the latest segment.
- ☒ **Use Recorder Synchronized Playback:** Set up to playback the recorded images on the recorder.
- ☒ **Use SmartPlayback:** Set up to repeatedly playback the recorded images on the recording server and failover server, on the same Play tab.
- ☒ **Prefer Responsiveness to Time-Precision:** Displays the closest time frame possible while reducing the loss of responsiveness, preferred than time-precision, when performing the GoTo function on a Long-GOP image.
- ☒ **Key-Frame mode forced on Long-GOP backward playback:** Set up to play the key-frame only on Long-GOP backward playback.
- **Timetable:** Specify the color to be displayed in the timetable for each recording format.

Site



- ☒ **Expand Device Groups:** Displays the devices in the device group of the Site list when monitoring video or playing recorded video.
- ☒ **Display Disabled Devices:** Displays or hides the disabled devices from the Site list.
- **Show Device Real-Time Monitoring:** Displays real-time monitoring as an icon or a green overlay.
- **Item:** Displays or hides the list of input/output devices supported by the device in the Site list when monitoring video or playing recorded video.
- ☒ **Devices registered to Video Analytics Service will connect to the service when they are registered in the live tab.:** Immediately connects to the Video Analytics Service and starts the video analysis after the drag&drop on the live tab, even if Draw Video Analysis is not selected.

Map

Map Setup

☒ Use Live Popup Panel
☒ Use Event Sound Multiple Play

* The following default setting applies to the runtime map. After running the map, the setting can be changed by using the control toolbar or context menu.

Focusing Event : ☒ Motion Detection ☒ Object Detection
☐ Video Loss ☐ Video Blind
☒ Video Analytics ☐ Face Detection
☒ TripZone ☒ Auto Tracking
☐ Tampering ☒ Audio Detection
☒ Alarm-In ☒ Network Alarm-In
☒ Text-In ☒ Alarm-Out
☒ IoT ☐ Path Sequence

☐ Activate Auto Focusing
Focusing Duration : 5 Seconds
Focus Minimum Dwell : 3 Seconds
Zoom Finder : Auto

Map Event Spot

Event monitoring dwell : 20 Sec
Minimum monitoring dwell : 2 Seconds

Instant Viewer

Duration : 10 Seconds

- ☒ **Use Live Popup Panel:** Displays the Live Popup List panel. Unchecking the box hides the panel.
- ☒ **Use Event Sound Multiple Play:** Simultaneously plays each camera's sound file when events occur at multiple camera sites at the same time. Uncheck the box to play the first event's sound file.
- ☒ **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 expires.
- **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

- ☒ **Auto run COSTAR starNET Pro Client at Windows startup:** The Client program automatically runs when logging onto Windows.
- ☒ **Load user specific layout:** Select the user layout when running the COSTAR starNET Pro program.
- ☒ **Startup Full Screen:** Starts the Client program in full screen.

- ☒ **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.

Browser

- **URL Start Page:** Enter the URL (Uniform Resource Locator) address of the default web browser on a browser screen.
- ☒ **Fit to Pane:** Displays the web page by fitting it to the browser screen size.
- **Enable Popup:** Enables Displays the web page by fitting it to the browser screen size.
- **Popup All New Window:** Displays the popup screen of the web page on a separate screen.

Action

The screenshot shows the 'Action' configuration window with four tabs: General, Live Popup, Instant Viewer, and Fisheye.

- General:**
 - ☒ Use Ctrl+Popup Pane Drag
 - ☒ Use Multiple Two-way Audio
 - ☐ Use Listen when changing to Format 1 x1
 - ☐ Enable PTZ Automatically
- Live Popup:**
 - Left Button: [Dropdown]
 - Double-click: [Maximize or Restore] [Dropdown] [More]
 - ☐ Turn (e)PTZ Functions On
 - ☒ Disable Time Out
 - Tab Name: [Live 1] Pane: [1] [Dropdown]
- Instant Viewer:**
 - [N/A] [Dropdown]
 - Double-click: [1 x1 Pane on Live Screen] [Dropdown]
 - ☐ Turn (e)PTZ Functions On
 - ☒ Disable Time Out
 - Tab Name: [Live 1] Pane: [2] [Dropdown]
- Fisheye:**
 - Startup Preset: [N/A] [Text]
 - Default View Mode: [N/A] [Dropdown]
 - Image Ratio: [Original] [Dropdown]
 - ePTZ Frame Rate: [Normal] [Dropdown]
 - Auto Pan Frame Rate: [Normal] [Dropdown]
 - ☐ Use ePTZ

- **General:** Set the general action on the live popup.
 - ☒ **Use Ctrl+Popup Pane Drag:** Press Ctrl button and drag the live popup to a pane on the Live tab to display the image on the pane.
 - ☒ **Enable PTZ Automatically:** Set PTZ control function automatically.
- **Live Popup:** Double-click on the pane to practice the following functions.
 - Maximize or Restore
 - 1x1 Pane on Live Screen
 - Pane on Live Screen
 - Maximize on Application Monitor
- **Instant Viewer:** Double-click on the predefined button, the middle or the right button, of the mouse to perform the following functions.
 - 1x1 Pane on Live Screen
 - ☒ **Turn (e)PTZ Functions On:** Set PTZ control function on default.
 - ☒ **Disable Time Out:** Disables the popup dwell time out after Action.
- **Fisheye:** Set up the default Action when accessing a fisheye camera.
 - **Startup Preset:** Set up the preset name to be used when accessing a fisheye camera. If each camera's format is saved under the same preset name, it is easier to change the format.
 - **Default View Mode:** Set the default view mode.
 - **Image Ratio:** Set the image ratio.
 - **ePTZ Frame Rate:** Set the ePTZ frame rate. High (Over average of 60 Fps), Normal (Over average of 30 Fps), Low (Average of 15 Fps), Very Low (Average of 5 Fps) – a PC with a low specification is appropriate.
 - **Auto Pan Frame Rate:** Set the auto pan frame rate. High (Over average of 60 Fps), Normal (Over average of 30 Fps), Low (Average of 15 Fps), Very Low (Average of 5 Fps) – a PC with a low specification is appropriate.
 - ☒ **Use ePTZ:** Uses ePTZ when accessing a fisheye camera.

Save

- **Folder:** Select a folder to save the still image.
- **Filename:** Set a name of the folder for saving the still image. Supported extensions include JPG, PNG, TIF, BMP and PDF.
 - ☒ **Include Image Information:** Include image information in the saved still image file.
- ☒ **Include Digital Signed Player:** Include Digital Signed Player as the default setting for Clip-Copy.

Panic Recording

NOTE: Panic record is available only when video is currently displayed on the Live tab. For example, if you change the screen format during panic record and monitoring video is hidden on the Live tab, panic record will stop for the hidden video.

- **Total Space:** Displays the total and remaining capacity of storage allocated for panic record.
- **Overwrite:** Displays whether overwrite mode is enabled or disabled. When overwrite mode is enabled, the COSTAR starNET Pro system records over the oldest video data once all available storage space has been used. When overwrite mode is disabled, the COSTAR starNET Pro system stops recording once all available storage space has been used.
- **Clear All Recorded Data:** Deletes all recorded data in the COSTAR starNET Pro system.

- **Reconstruct Abnormally Recorded Timetable:** When any error occurs during recording, the recorded data and the timetable information of the recorded data might not match and the timetable in the COSTAR starNET Pro program might display incorrect information. In this situation, clicking the button reconstructs the timetable to display recorded data correctly on the timetable in the COSTAR starNET Pro program.
- ☒ **Overwrite recorded data when the disk is full:** Records over the oldest video data once all available storage space has been used.
- ☒ **Panic Recording on Local Client PC:** Enables panic recording in the Client system.
 - **Storage Path:** Allows you to set up the storage folder path for panic recording.
 - **Capacity:** Sets up the storage capacity to be allocated to the hard disk drive (Min. 4GB to max. 64GB).

Chapter 5 — Live Video Monitoring

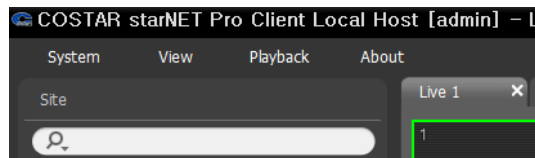
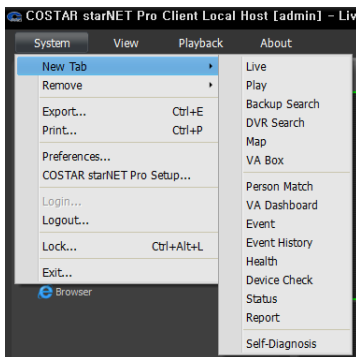
You can monitor live video of each group. The Client system displays video from devices based on the settings in the device on the Live screen. If the streaming service is running, the Client system displays video transmitted through the streaming server, and it allows multiple users to monitor video simultaneously.

First, check the following and run the Client program.

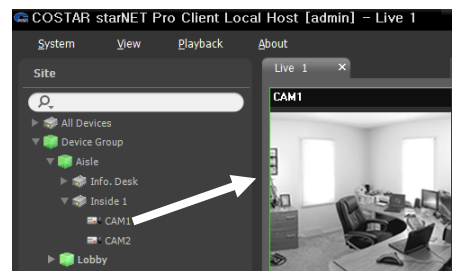
- Services should be running in the system. Refer to 3.1 Running Services (p. 25) for details.
- Devices should be added to a device group. Refer to Chapter 14 — Device Management (p. 143) for details.

5.1 Monitoring Video

Live video monitoring is supported in the Live panel (maximum 6 panels in a 32-bit system). 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.

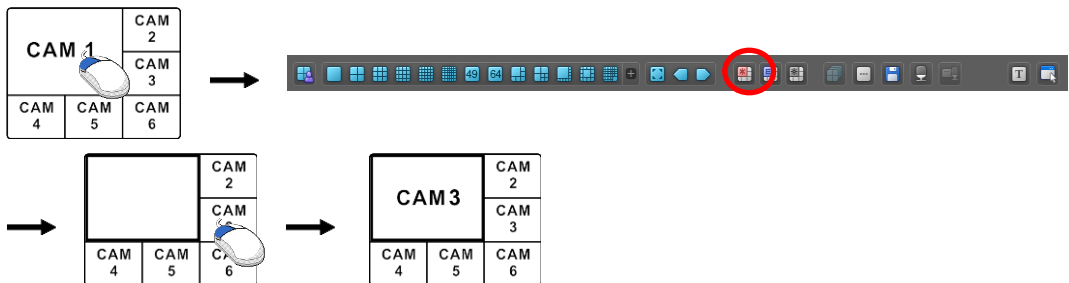


- (Save to User Layout): Saves the current screen format.
- (Screen Format): Changes the screen format. Clicking the + button displays more available screen formats. Clicking the or button moves to the previous or next camera groups.
- (Hotspot): Sets up a selected camera screen as a hotspot screen. Refer to **Hotspot Setup** (p. 77) for details.
- (Event Spot): Sets up a selected camera screen as an event spot screen. Refer to **Event Spot Setup** (p. 78) for details.
- (Map Event Spot): Sets up a selected camera screen as a map event spot screen. Refer to **Map Event Spot Setup** (p. 78) for details.
- (Layout Sequence): Starts or stops layout sequence. Refer to **5.1 Monitoring Video, Layout Sequence Monitoring** (p. 83) for details.
- (Additional Menu): Select additional menus such as remote site panel or text-in panel.
- (Export)
 - Save Still Image: Saves the current image on the screen as an image or PDF file at its original size.
 - Export Image File, Print Image: Exports or prints the images currently displayed on the screen.
 - Export Panorama Screen: Exports the images currently displayed on the screens.
- (Audio Broadcast): Broadcasts audio to all devices in the current Live tab.
- (NVR Two-Way Audio) : Allows you to use listen/talk functions with NVR devices.
- (Panic Recording): Starts panic recording of all the videos on the screen (supported only when Panic Recording on Local Client PC is selected). Refer to **6.1 Setting up Panic Recording** (p.102) for details.
- (Text-In Panel): Displays the Text-In panel. The Text-In panel shows the text-in data of devices currently connected to the COSTAR starNET Pro system. If a camera is associated with the text-in device and video of the associated camera is displayed on the current DVR Search screen, the text-in data is displayed overlapping video on the camera screen, too. You can change the length of time for the text-in data to be displayed at the Live Text-In Time Range setting.
- (Browser): Sets up the selected screen as a browser screen. Refer to **Browser Screen Setup** (p. 79) for details.

Hotspot Setup


NOTE: The “hotspot” in the COSTAR starNET Pro 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.

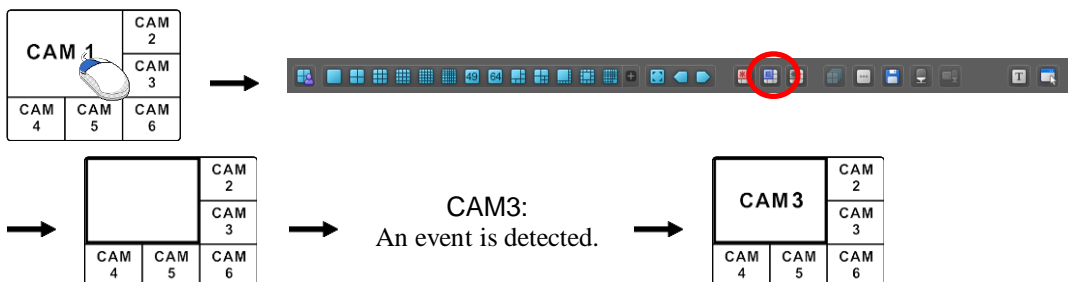
1. Select a camera screen to set up as a hotspot screen on the current monitoring screen.
2. Click the  (Hotspot) button on the toolbar at the bottom of the Live panel, and the current connection in the selected camera screen is released. The hotspot screen is surrounded by a red outline.
3. Select any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

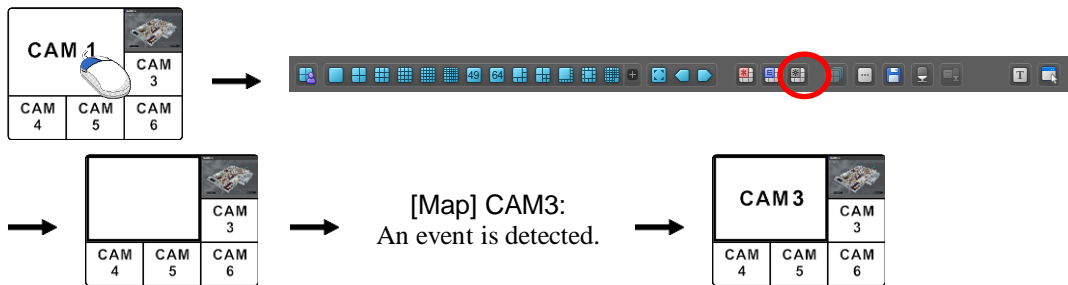


Map Event Spot Setup


NOTE: The “map event spot” in the COSTAR starNET Pro 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.

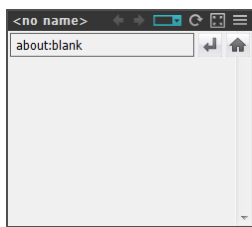
1. Select a camera screen to set up as a map event spot screen on the current monitoring screen.
2. Click the  (Map Event Spot) button on the toolbar at the bottom of the Live panel, and the current connection in the selected camera screen is released. The map event spot screen is surrounded by a gray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








3. When an event is detected, video from the event-detected is displayed on the map event spot screen.



Browser Screen Setup


1. Select a camera screen to set up as a browser screen on the current monitoring screen.
2. Click the  (Browser) button on the toolbar at the bottom of the Live panel, and the current connection in the selected camera screen is released.
3. A web browser page is displayed on the browser screen.



-  (Prev. Page),  (Next Page),  (Enter URL),  (Reload/Stop),  (Fit to Pane)
-  (Menu): Displays a browser menu.
 - Prev. Page, Next Page: Moves to the previous or next page.
 - Enter URL: Allows you to enter a URL (Uniform Resource Locator) address. Clicking the  button in the right moves to the address.
 - Reload, Stop: Reloads the web page or stops the reloading.
 - Fit to Pane: Displays the web page by fitting it to the browser screen size.
- Enable Popup: Enables Displays the web page by fitting it to the browser screen size.
- Popup All New Window: Displays the popup screen of the web page on a separate screen.
- Print: Prints the current web page.
- Remove: Releases the browser screen.

Screen Format

Screen Format includes default Normal Format, Wide Format and customized User Screen Format. Clicking the left mouse button on the screen format applies the selected format to the panel, and clicking the right mouse button selects the chosen screen format. Hovering the mouse over a screen format item displays a tooltip with screen format information. User Screen Format items are arranged in alphabetical order and in order of number of panels.

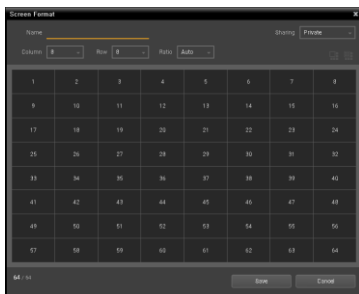
NOTE: Screen Format in the Costar starNET Pro program indicates the divided image pane arrangement on the live or play panel. Select from screen formats on the panel toolbar or click the  (Screen Format) button to select from additional screen formats and apply to the panel.



- (Add): Adds a user screen format.
- (Modify): Edits user screen format information.
- (Delete): Switches to user screen format delete mode. Click on a User Screen Format item to remove the item.

User Screen Format Add/Modify

Click the (Add) or (Modify) buttons of User Screen Format to add a new format or edit the format information. Select a format item using the right mouse button or arrow keys to activate the (Modify) button.



- **Name:** Enter a name for user screen format.
- **Sharing:** Select user range for the chosen screen format.
 - Public: Displayed to all users.
 - Group: Displayed to the users in the owner group.
 - Private: Displayed to the owner only.
- **Column, Row:** Indicates the number of column and rows of the screen format.
- **Ratio:** Displays the horizontal, vertical ratio of the panel. Selecting Auto uses the ratio of the monitor displaying the Client. Selecting Default indicates the panel ratio configured before the screen format modification.
- (Merge): Merges the selected panes into a single pane.
- (Unmerge): Splits the selected pane into panels in default size.

NOTE: Clicking the middle mouse button on the panel merges, and clicking the right mouse button unmerges the pane.

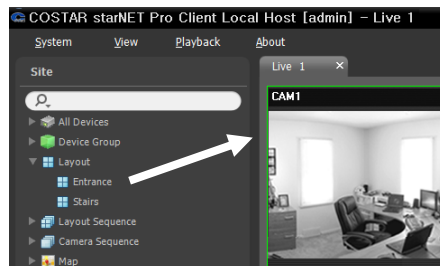
NOTE: Up to 64 panes are available on the panel in maximum.

Layout Monitoring

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

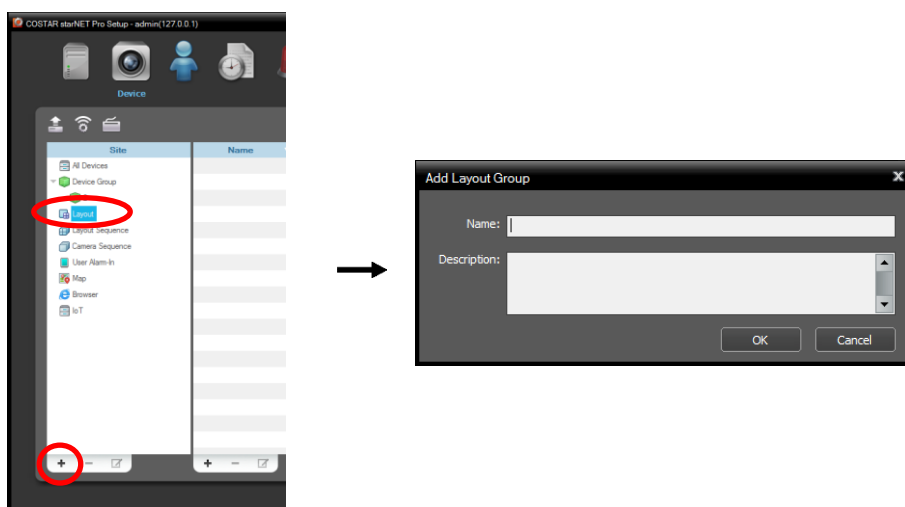
NOTE: A "layout" in this document refers to a screen organization created by arranging specific cameras in a specific screen format.

Select a desired layout from the Layout list. Then, drag&drop it on the Live screen, or double-click on the layout. Video from cameras added to the Layout is displayed in the predefined screen format on the screen.



Registering Layout Groups

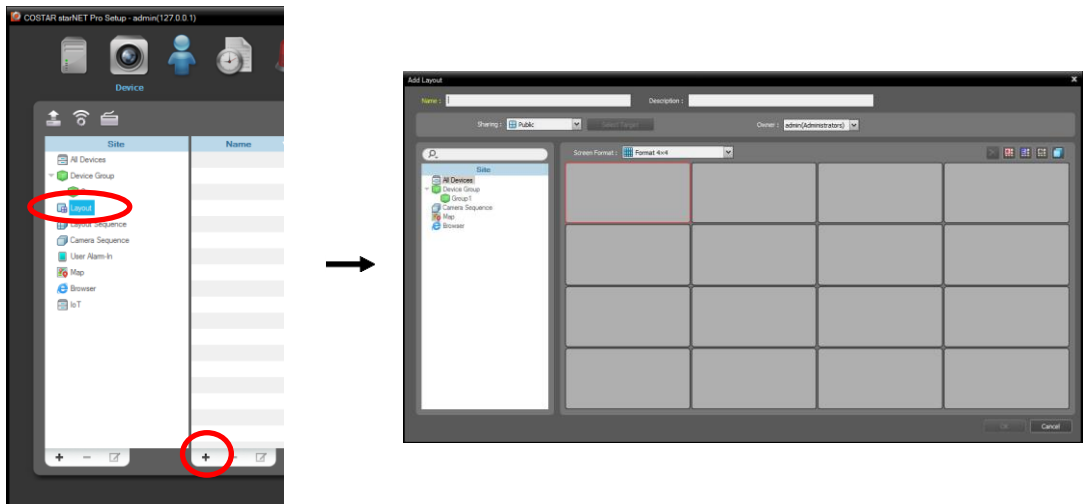
1. Go to the System menu, and click COSTAR starNET Pro Setup, and select the Device menu.
2. Click Layout in the Site panel, and then the **+** button at the bottom of the Site panel on the left. The Add Layout Group window appears.



- Name: Enter the layout group name.
- Description: Enter the layout group description.

Registering Layouts

1. Go to the System menu, and click COSTAR starNET Pro 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.
- **Sharing:** Specify the users who can see the layout being registered. The **admin** user can see all layouts.
 - **Public:** Displays the layout to all users.
 - **Group:** Displays the layout to a specific group of users. You can select the group from the **Owner** list.
 - **Private:** Displays the layout to the individual users selected from the **Owner** list.
 - **User:** Displays the layout to the specific user or user group.
- **Select Target:** Select the specific target for sharing.
- **Owner:** Allows you to display a different layout to different users.
- **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.
- **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.

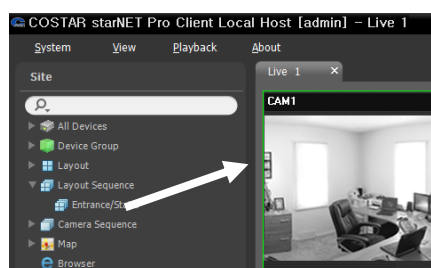
Clicking the **OK** button completes registration of the layout.


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 administration service for layout sequence monitoring. Refer to the following for details about layout sequence registration.

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

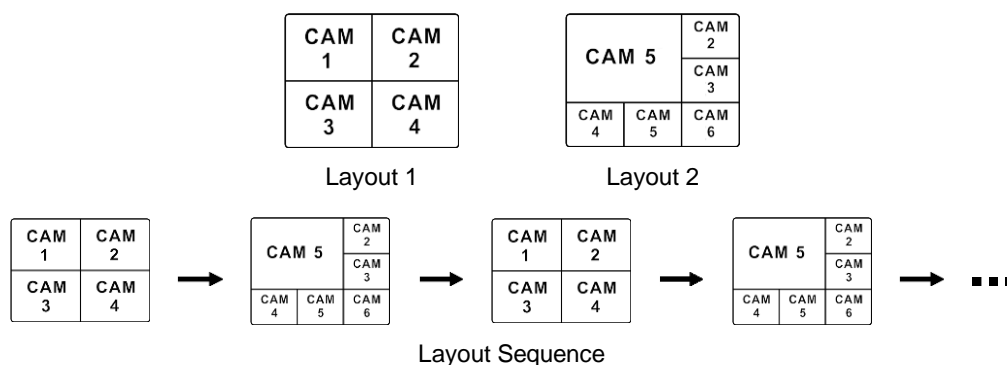
1. Select a desired layout sequence from the Layout Sequence list, and drag and drop it on the Live screen. Video from cameras added to the layout sequence is displayed in the screen format for each layout sequentially.



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

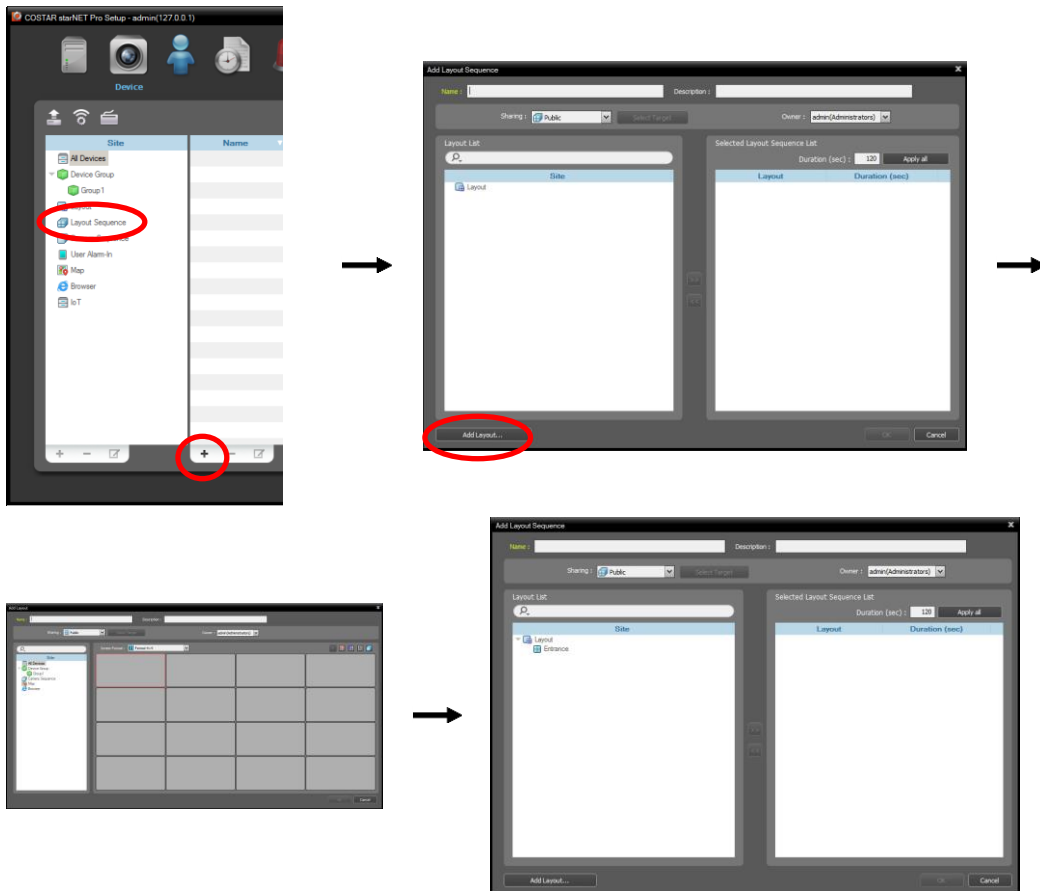



Example



Registering Layout Sequences

1. Go to the System menu, and click COSTAR starNET Pro 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. 80). At least two layouts must be registered for sequencing.



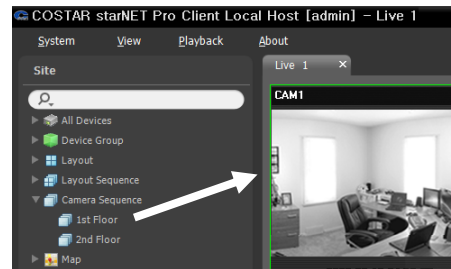
- **Name:** Enter the layout sequence name.
- **Sharing:** Specify the users who can see the layout sequence being registered. The admin user can see all layout sequences.
 - **Public:** Displays the layout sequence to all users.
 - **Group:** Displays the layout sequence to a specific group of users. You can select the group from the Owner list.
 - **Private:** Displays the layout sequence to the individual users selected from the Owner list.
 - **User:** Displays the layout sequence to the specific user or user group.
- **Select Target:** Select the specific target for sharing.
- **Owner:** Allows you to display a different layout sequence to different users.
- **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. Double clicking the number under Duration (sec) for a layout will allow you to change the duration time for this specific layout. 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 administration service for camera sequence monitoring. Refer to the following for details about camera sequence registration.

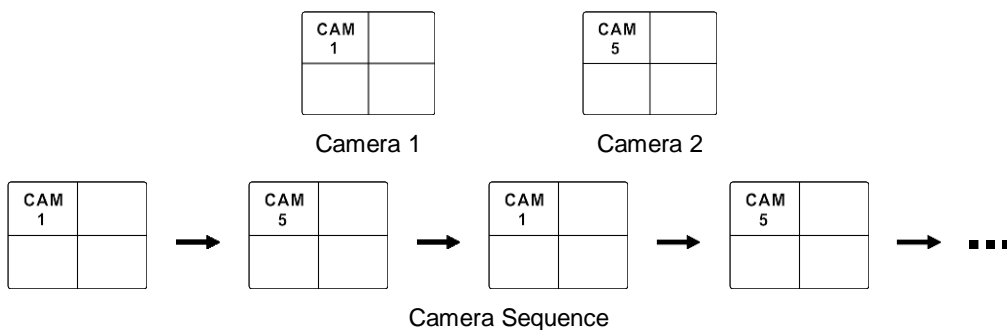
1. Select a desired camera sequence from the Camera Sequence list, and drag and drop it on the Live screen. Video from cameras added to the camera sequence is displayed on the screen sequentially.



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

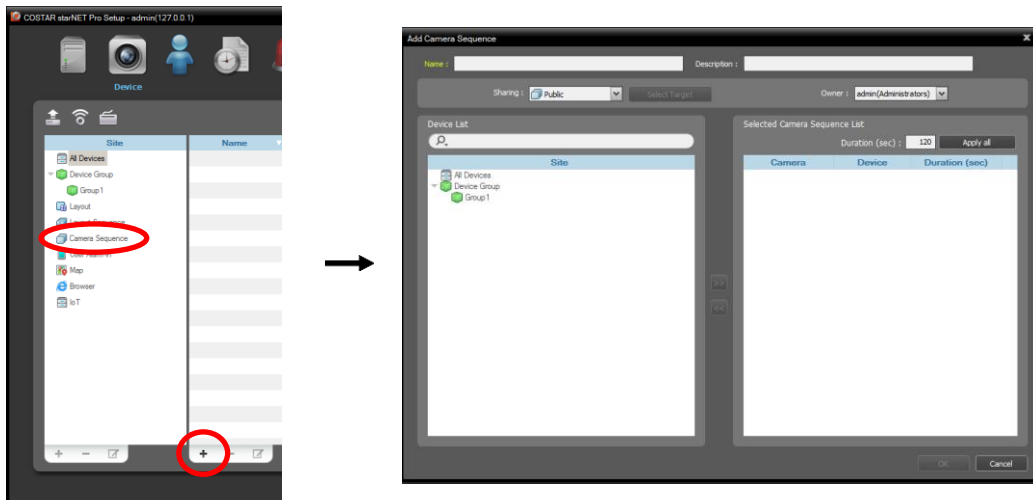


Example



Registering Camera Sequences

1. Go to the System menu, and click COSTAR starNET Pro 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.
- **Sharing:** Specify the users who can see the camera sequence being registered. The admin user can see all camera sequences.
 - **Public:** Displays the camera sequence to all users.
 - **Group:** Displays the camera sequence to a specific group of users. You can select the group from the Owner list.
 - **Private:** Displays the camera sequence to the individual users selected from the Owner list.
 - **User:** Displays the camera sequence to the specific user or user group.
- **Select Target:** Select the specific target for sharing.
- **Owner:** Allows you to display a different camera sequence to different users.
- **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. Double clicking the number under Duration (sec) for a camera will allow you to change the duration time for this specific camera. Clicking the Apply all button applies the duration setting to all cameras in the list.

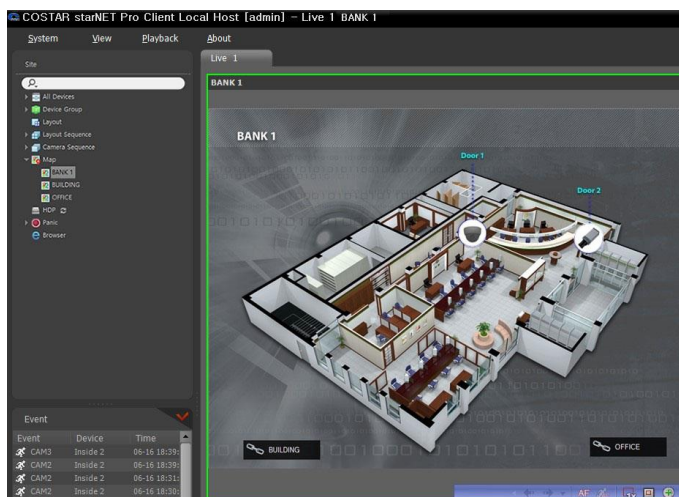
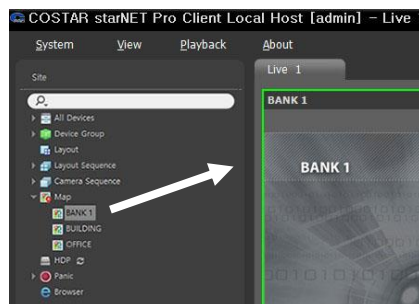
Select a camera from Device List, click the button, and the selected camera is added to Selected Camera Sequence List. Clicking the OK button completes registration of the camera sequence.

5.2 Map Monitoring

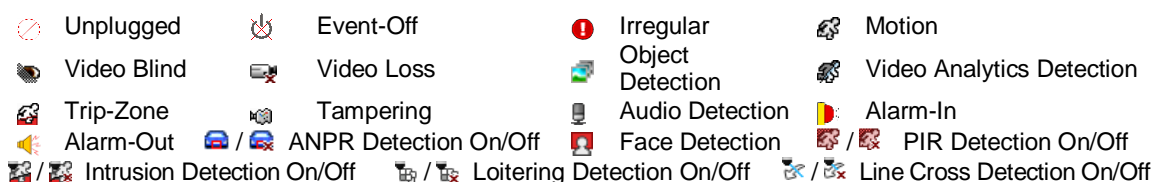
You can monitor video from cameras, event detection and input/output device status on a map for devices registered on the administration service. A map should be registered on the administration service for map monitoring. Refer to Chapter 19 — Map Editor (p. 191) for details about map registration.

Map monitoring is supported in the Live panel (maximum 4 – maximum 2 panels in a 32-bit system) 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):



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 17.2 Setting up Map, Path Sequence (p. 200) for details about the path sequence setup.

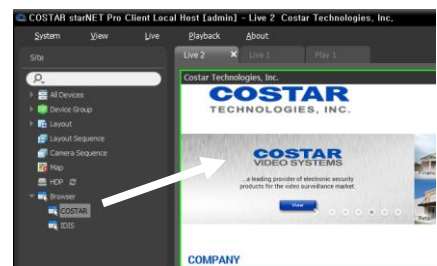
Select a desired path of the path sequence from the map, and drag and drop it on the Live screen. Video from the cameras associated to the path sequence is displayed sequentially during the preset duration period.



5.3 Launching Browser

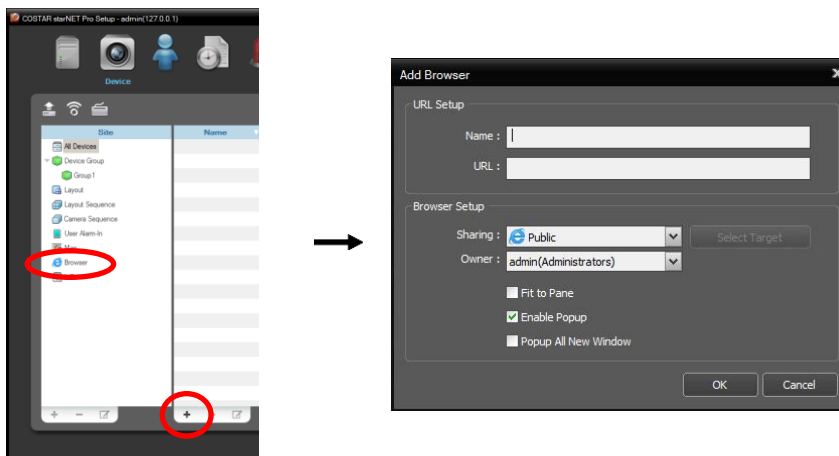
You can launch a browser registered on the administration service. A browser should be registered on the administration service for launching the browser.

Select a desired browser from the **Browser** list, and drag and drop it on the Live screen. The selected browser is displayed on the screen.



Registering Browser

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



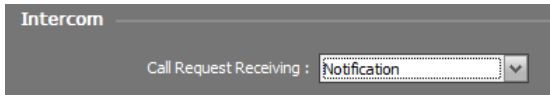
- **URL Setup:** Enter the name and address of the URL (Uniform Resource Locator) to add.
- **Sharing:** Sets the browser sharing option.
- **Owner:** Selects the owner of the browser.
- **Select Target:** Select the specific target for sharing.
- ☒ **Fit to Pane:** Displays the web page by fitting it to the browser screen size.
- ☒ **Enable Popup:** Enables Displays the web page by fitting it to the browser screen size.
- ☒ **Popup All New Window:** Displays the popup screen of the web page on a separate screen.

5.4 Intercom

By connecting the intercom device, you can monitor video and make calls, and control the opening and closing of doors.

Setting Call Request Receiving

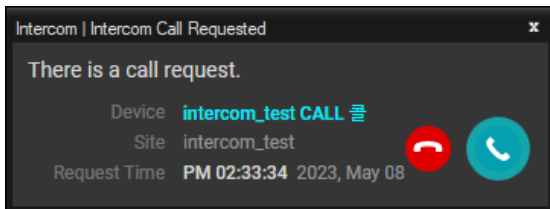
When the intercom call is received, when an event is detected, a pop-up screen appears according to the Instant Event - Intercom - Call Request Receiving.



- **Not Use:** Do not specify the setting when a call request is received.
- **Notification:** Display the intercom notification popup.
- **Intercom Popup:** Display the intercom popup.

Intercom Notification Popup

A pop-up screen is displayed when a call request is received. The device name, site (group) name, and call request time are displayed.



- **Click answer call button:** End notification popup and display the intercom call popup.
- **Clicking the left mouse button on the reject call button:** End the intercom notification popup.
- **Middle/Right Mouse Click on Reject Call Button:** Reject the call request without exiting the intercom notification popup.

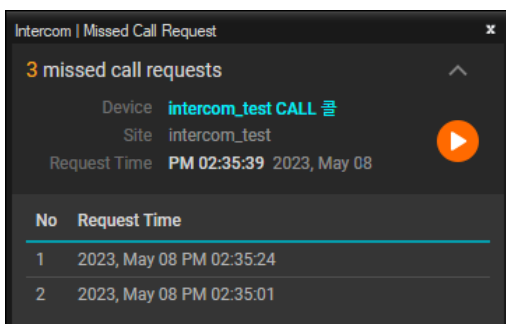
In the following cases, the pop-up automatic shutdown function operates.

- When a call request timeout occurs while receiving a call request
- 10 seconds after receiving a call request cancellation while receiving a call request
- 1 minute after receiving end of call request due to preemption of VOIP call

If the auto-shutdown count has started, clicking the pop-up will cancel the count.

Intercom Missed Call Request Notification Popup

A pop-up is displayed per device upon receipt of a missed call request event. The device name, site (group) name, and call request time are displayed.



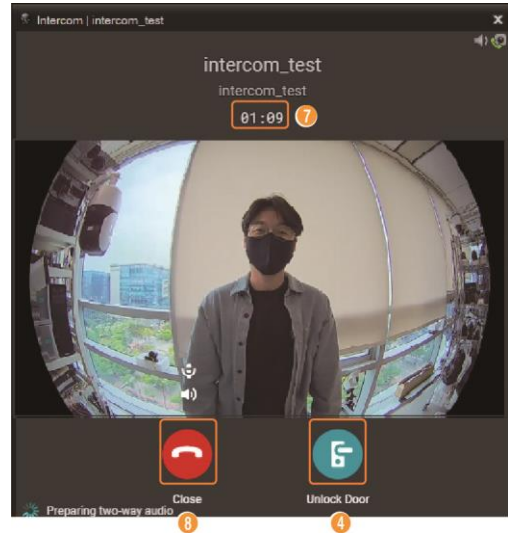
- **Click the recorded video play button (including the play button in the list):** Plays the recorded video of the missed call request time.
- **Drag the recorded video playback button/playlist item and drop it on the camera pane:** Plays the recorded video at the time of the missed call request.
- **Click the Normal/Extended mode switch button:** If there are multiple missed call request records, you can switch the mode and view the missed call request list.

Intercom Call Popup

You can execute the pop-up of forward call mode through the **Call** button on the harbor toolbar of the intercom camera pane connected to the Monitoring tab or the **Call** item in the context menu.



<Before Call>



<Calling>

- ① Device name: Shows the device's name.
- ② Site/Group name: Shows the name of the site or group.
- ③ Volume control: Controls the system volume and the mute of the audio input/output device.
- ④ Unlock Door button: Click and hold to unlock the connected door.
- ⑤ Reject button
 - Click left mouse button: End the call and exit the pop-up.
 - Click right/middle mouse button: Stop the call.
- ⑥ Call button: Respond to the intercom call request or request a call.
- ⑦ Calling time: During a call, the elapsed call time is displayed.
- ⑧ Close button
 - Click left mouse button: End the call and exit the pop-up.
 - Click right/middle mouse button: Stop the call.

In the following cases, the pop-up automatic shutdown function operates.

- 10 seconds after the call request timeout while receiving a call request
- 10 seconds after receiving a call request cancellation while receiving a call request
- 1 minute after receiving end of call request due to preemption of VOIP call
- If you do not click the OK button in the timeout dialog box displayed every 5 minutes when intercom call function is occupied, after 10 seconds

If the auto-shutdown count has started, clicking the pop-up will cancel the count.

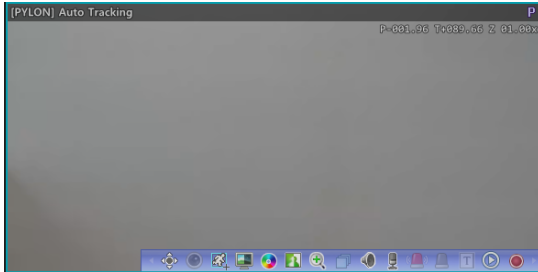
- End/Reject button: Ends or rejects the intercom call and closes the pop-up. (The pop-up does not close when clicking the right/middle mouse button.)
- Unlock Door button: Click and hold to unlock the connected door.

5.5 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.

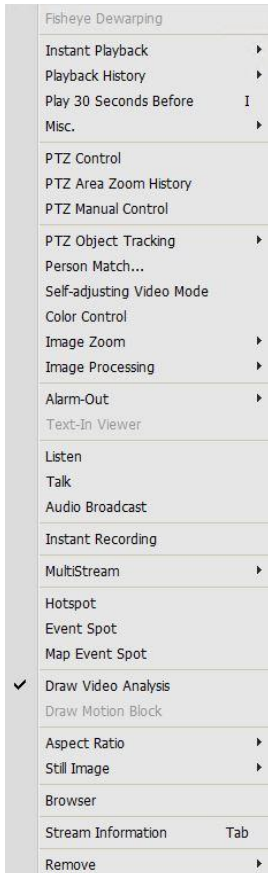


- (PTZ Control): Allows you to control PTZ for a camera that supports PTZ control. Refer to PTZ Control (p. 92) for details.
- (Remote Control): Directly remote controls the HDMI encoder image using a keyboard or mouse. Refer to Remote Control (p. 96) for details.
- (Fisheye Dewarping): Dewarps the fisheye camera image. Refer to Fisheye Dewarping (p. 96) for details.
- (Person Match): Runs Person Match search. Refer to Chapter 22— Person Match Service (p.240) for details.
- (Self-adjusting Video Mode): Allows you to self-adjust the video mode. Refer to Self-adjusting Video Mode (p. 99) 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. This change will be applied to both the video of the COSTAR starNET Pro program and the device.
- (Image Effect): Adjusts the image effect. Refer to Image Effect (p. 100) for details.
- (Image Zoom): Zooms in on the image. Refer to PTZ Control (p. 93) for details.
- (Camera Sequence): Starts or stops camera sequence. Refer to 5.1 Monitoring Video, Camera Sequence Monitoring (p. 85) for details.
- (Listen/Talk): Receives audio from the device or sends audio to the device (Not all devices support audio).
- (Alarm-Out On / Off): Turns on/off the alarm-out associated with the camera device. The associated alarm-out device is set in the corresponding camera device edit window.
- (Text-In Viewer): Pops up the text-in viewer window (supported only when a text-in event is detected). The camera title bar is highlighted in blue when a text-in event is detected. Refer to Text-In Viewer (p. 102) for details.
- (Panic Recording): Starts or stops panic recording.
 - Panic Recording: This is supported only when Panic Recording on Local Client PC is selected. When panic recording, the Panic Recording OSD appears in the upper-right corner of the camera screen and the system records the video shown on the screen. Refer to 6.1 Setting up Panic Recording (p. 105) for details.

NOTE: The Panic Recording function allows you to manually record video that is currently being monitored. You can use this function to record the video shown on the screen. Panic recordings are saved in the Client system.

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.



- **Instant Playback:** Allows you to use instant playback. Refer to [Instant Playback](#) (p. 97) for details.
- **Playback History:** Saves 8 instant playback history in maximum for each camera device and plays the history.
- **PTZ Control, PTZ Area Zoom History, PTZ Manual Control, Color Control, Image Zoom, Listen, Talk, Panic Recording:** These function the same as clicking the individual buttons on the control toolbar. Refer to [Control Toolbar](#) (p. 88) for details.
- **PTZ Object Tracking:** Allows you to use PTZ auto tracking.
- **Person Match:** Allows you to use Person Match search. Refer to [Chapter 22 — Person Match Service](#) (p. 234) for details.
- **Image Processing:** Adjusts the image effect. Refer to [Image Effect](#) (p. 96) for details.
- **Alarm Out:** Activates or deactivates alarm out.
- **Text-In Viewer:** Pops up the text-in viewer window (supported only when a text-in event is detected). The camera title bar is highlighted in blue when a text-in event is detected. Refer to [Text-In Viewer](#) (p. 99) for details.
- **Audio File List:** Controls – play/pause – the audio file in the device (supported only for devices with an audio alarm file).
- **Audio Broadcast:** Broadcasts audio to all devices in the current Live tab.
- **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 DirectNET protocol and some versions of the Axis, Panasonic WV (DG), or ONVIF™ Conformance protocol registered in the streaming service).
- **Hotspot:** Sets up a selected camera screen as a hotspot screen. Refer to [5.1 Monitoring Video, Hotspot Setup](#) (p. 77) for details.
- **Event Spot:** Sets up a selected camera screen as an event spot screen. Refer to [5.1 Monitoring Video, Event Spot Setup](#) (p. 77) for details.
- **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. 77) for details.
- **Draw Video Analysis:** Displays video analytics detection results on the screen (supported only for devices which are registered on the video analytics service). If a VA box is connected, VA box analysis data is displayed over the live image.


Video Analysis Service

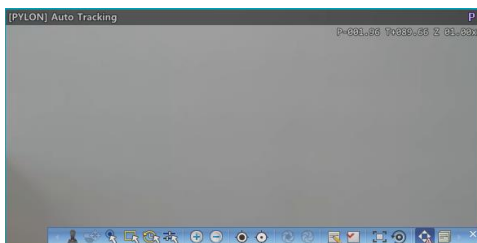
- **All detection objects:** Displays detection results of any objects which there were any changes on the monitoring screen.
- **Event triggering object only:** Displays detection results of the events triggered according to the rules preset in the Setup program. Refer to [12.2 Configuring Video Analytics Detection Events](#) (p. 135) for details of setting rules.
- **Not Display:** Does not display any detection results.










VA Box








- Displays the People Counting and Queue Management video analysis over the live image.
 - Displays the real-time Heat Map data over the live image, and provides Heat Map image options.
 - Refer to Chapter 21— VA Box (p. 230) for more 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 DirectNET 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, Draw Video Analytics.
 - **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 or PDF file at its original size.
 - **Browser:** Sets up the selected screen as a browser screen. Refer to 5.1 Monitoring Video, Browser Screen Setup (p. 78) for details.
 - **Stream Information:** Shows the stream information of the selected camera.
 - **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.





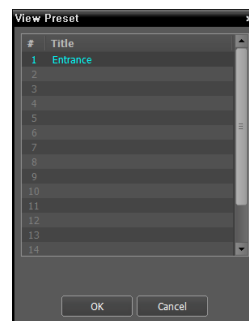
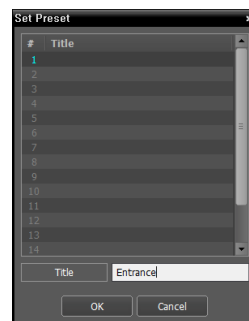
-  (Direction Control): Displays or hides the  (Direction Control Panel). You can control the direction of the PTZ camera by clicking the arrow buttons on the direction control panel or by clicking and dragging the mouse on the camera screen.
-  (Object tracking): Specifies that the user selects an object in the image and follows it.
-  (OneClick Move): Controls Pan-Tilt to move the user's point to the center of the screen (only works for some models of Network Camera connections). See PTZ OneClick Move Control (p. 92) for an explanation of this function.
-  (Area Zoom): Specifying a certain area on the image to zoom in the selected area. Dragging the mouse specifies the area, and the magnification is displayed on the drag area.
-  (Area Zoom History): Displays the area zoom history.
-  (PTZ Manual Control): Allows camera control by manually entering pan, tilt, zoom and focus values.
-  (Zoom In/Out): Zooms the camera lens in or out.
-  (Focus Near/Far): 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. 88) for an explanation of this function.
-  (One Push): Automatically adjusts focus when the image is out of focus after the image is zoomed in or out (only works for some models of Network Camera connections).
-  (PTZ Reset): Resets the PTZ Settings.
-  (Auto Run On/Off): Moves the camera to the preset position at regular intervals.
-  (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 Preset so that you can move the camera directly to a saved direction.

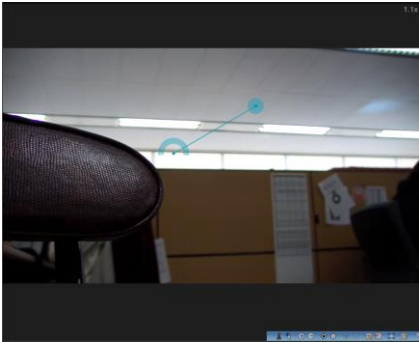
1. Move the PTZ camera to the desired position.
2. Click the  (Set Preset) button on the PTZ control toolbar, and the **Set Preset** window appears. Enter a name for the Preset and click the **OK** button. The current position is saved as the Preset name.
3. Click the  (View Preset) button on the PTZ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



ePTZ Control

You can control Pan, Tilt, and Zoom function more accurately.

NOTE: This is supported only for some models of camera.



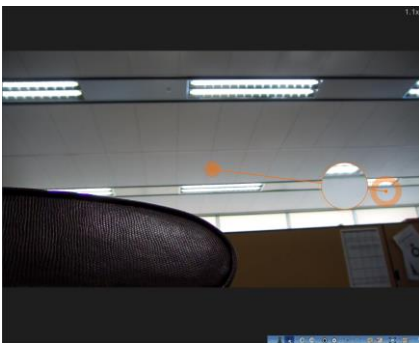
Controls Pan, Tilt, and Zoom function. Dragging the mouse, the size of dragging indicates the speed of PTZ.


- Left button drag: Left/Right (Pan control), Up/Down (Tilt control)
- Right button drag: Zoom control

PTZ OneClick Move Control

You can control Pan-Tilt to move your point to the center of the screen. You can move the position exactly you want with minimum input.

NOTE: This is supported only for some models of camera.




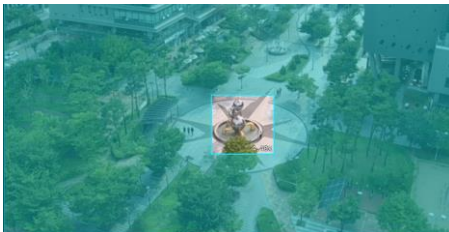
Clicking the  (OneClick Move) button on the control toolbar and any point of PTZ camera pane moves anywhere you want. Dragging the mouse zooms the part of screen.


PTZ Area Zoom / Area Zoom History

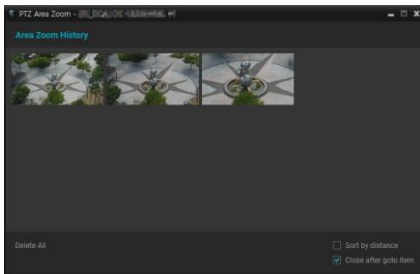
Drag the mouse over the image to draw the specific area to zoom in. The area zoom history is displayed in thumbnail formats.

NOTE: This is supported only for some models of camera.

Click the  (Area Zoom) button on the control toolbar, and drag the mouse over the image to zoom in the selected area.



Clicking the  (Area Zoom History) button displays previous area zoom history in a thumbnail list as the following image. Click a thumbnail to locate the camera to the selected position.

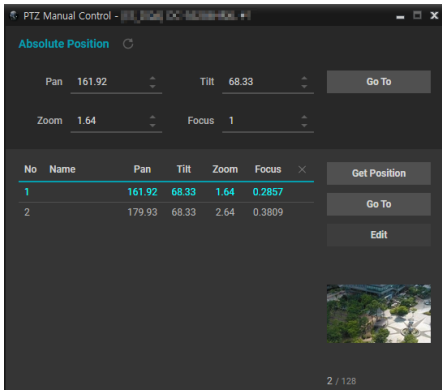



Hovering the mouse over each item displays the zoom magnification value on the thumbnail.

- **Sort by distance:** Sorts the items in an ascending order by zoom magnification value. Disable to sort by latest.
- **Close after goto item:** Closes the area zoom history window after item selection and camera relocation.
- **Delete All:** Deletes all of items.

PTZ Manual Control

The user can manually enter pan, tilt, zoom, focus values to control the camera. Each specific position can be saved in the list and selected to move the camera position.

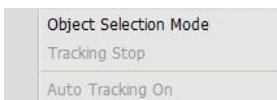


-  (Refresh): Displays the camera's current pan, tilt, zoom and focus values.
- **Go To:** Moves the camera to the position of entered pan, tilt, zoom and focus values.
- **Get Position:** Adds the camera's current pan, tilt, zoom, focus values as one fixed position to the list.
- **Go To:** Moves the camera to the selected position from the list.
- **Edit:** Edits the name or each pan, tilt, zoom, focus value of the selected position from the list.

PTZ Object Tracking



NOTE: This is supported only for some models of camera.

Tracks a specific object among the objects analyzed by the video analysis service. For details, refer to [Configuring Video Analytics Detection Events \(IDLA\)](#) to set up the video analysis detection event. At this time, you should check **Auto Tracking**. If you set auto-tracking related settings, you can enable or disable PTZ object tracking in the context menu of cameras that support auto tracking.







- **Object selection mode:** The video analysis service tracks the selected object among the analyzed objects.
- **Tracking Stop:** Stop tracking the selected object in object selection mode.
- **Auto Tracking On/Off:** Turns on/off the function to automatically track the object in which the video analysis detection event occurred.


Remote Control

For the live image with the  icon on the OSD, clicking the  (Remote Control) button on the control toolbar displays the Remote control toolbar and allows you to check the status through the OSD and use the control buttons.















-  /  (Input Device Status): Displays the input device in action.
-  (Disable Remote Control): Disables the remote control.
-  (Initialize Mouse Cursor Position): Move the mouse cursor to the top left.

Fisheye Dewarping

Clicking the  (Fisheye Dewarping) button on the control toolbar displays the fisheye dewarping toolbar and allows you to dewarp fisheye image. The mount type set in the device is a default.



-  (Mount Type): Choose a position that the camera is mounted. The available Screen Type changes depending on this setting.
-  (Image Ratio): Select the proper image aspect ratio.
-  (Layout): Select the layout, Main View and Main + 1~7 panes mode.
-  (Panoramic): Select the panoramic mode.
-  (Selection Mode): Drag and drop the area in the main view screen.
-  (Spot Mode): Move and select the area with the dewarp finder in the main view screen.
-  (Drag and Drop): Move and copy the main view and camera pane.
-  (Main PiP): Displays PiP (Picture in Picture) view to select the area easily in the main view screen.
-  (ePTZ): Controls Pan, Tilt, and Zoom function. Dragging the mouse, the size of dragging indicates the speed of PTZ.
 - Left button drag: Left/Right (Pan control), Up/Down (Tilt control)
 - Right button drag: Zoom control
-  (Auto Pan): Set to pan the camera automatically. +,- for direction and numbers for speed.
-  (Load/Save Preset): Load the saved preset of fisheye video control and save the current fisheye video control as preset.

-  (Display Source Image): Cancels the adjustment and reloads the original image.

Smart UX Quick Control

When in live mode, you can control video enlargement, dewarping, and PTZ by using a keyboard and a mouse without selecting the ePTZ mode.

- Quick Zoom
 - Ctrl + Mouse left button drag (Original Image): Zoom in the area selected by the mouse drag.
 - Ctrl + Mouse left button drag: Moves the zoomed in image to the position where the mouse drag moves.
 - Ctrl + Mouse wheel click: Exits the zoom image view and returns to the original image.
 - Ctrl + Mouse wheel scroll: Zoom control
- Quick Dewarping
 - Ctrl + Mouse left button drag (Original Image): Dewarps the area selected by the mouse drag.
 - Ctrl + Mouse left button drag: Pan/Tilt control in the mouse drag directions.
 - Ctrl + Mouse wheel click: Exits the dewarping image and returns to the original image.
 - Ctrl + Mouse wheel scroll: Zoom control
- Quick PTZ
 - Ctrl + Mouse left button drag: Pan/Tilt control in the mouse drag directions.
 - Ctrl + Mouse wheel scroll: Zoom control
 - Ctrl + Mouse right button drag: Zoom control
 - Ctrl + Shift + Mouse left click/drag: Move the image to the position where you click becomes the center, or move the image following the mouse drag.
 - Ctrl + Mouse wheel click: Zoom control
 - Ctrl + Alt + Mouse left button drag: Pan/Tilt/Zoom control to the specified area.
 - Ctrl + Alt + Mouse wheel click: Displays Area Zoom History window.
- Instant Playback
 - After selecting a pane, click I: Easy Play.
 - After selecting a pane, Page Up/Down: Moves to the previous/next playback section.
 - Wheel scroll on the or during the instant playback: Jog play is performed according to the direction of wheel scroll input.
 - (Ctrl +) J: Decrease the playback speed.
 - (Ctrl +) K: Reset the playback speed.
 - (Ctrl +) L: Increase the playback speed.
 - (Ctrl +) .: Executes high-speed reverse playback.
 - (Ctrl +) ,: Executes high-speed playback.


Recorded Video Playback Control

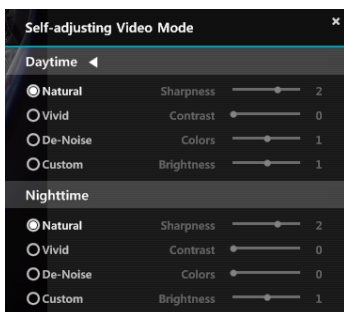
By combining the keyboard and mouse in the recorded video, you can quickly control the playback of the recorded video without switching the mode of a specific function.

- Mouse
 - It moves to the previous/next video by the specified time interval when wheel scroll is input in the previous/next frame widget.
 - The jog function works when wheel scroll is input from the play button.
 - Playback is controlled in the shuttle lock state when wheel scroll is input in the shuttle widget.
 - Playback stops when you click the right mouse button on the shuttle widget.

- The shuttle lock is released and playback stops when you click the middle mouse button on the shuttle widget.
- The recording section moves left/right when pressing Shift + wheel scroll in the timetable widget.
- The recording section is enlarged/reduced when pressing Ctrl + wheel scroll in the timetable widget.
- Quick Zoom
 - Ctrl + Space: Controls play/stop.
 - Ctrl + Shift + Space: Controls play/stop of all cameras included in the tab.
 - Ctrl + T: The time shift panel pops up.
 - Ctrl + Home: Moves to the beginning of the video.
 - Ctrl + End: Moves to the end of the video.
 - Ctrl + J: Decrease the playback speed.
 - Ctrl + K: Reset the playback speed.
 - Ctrl + L: Increase the playback speed.
 - Ctrl + ,: Executes high-speed playback.
 - Ctrl + .: Executes high-speed reverse playback.
 - Ctrl + left/right keyboard button: Moves to the previous/next frame.
 - Shift + left/right keyboard button: Moves to the previous/next video in 1 minute increments.
 - Alt + left/right keyboard button: Moves to the previous/next video in 10-minute increments.


Self-adjusting Video Mode

Clicking the  (Self-adjusting Video Mode) button on the control toolbar displays the camera setup window to set or preset the video mode for each daytime/nighttime.



- The preset includes Natural, Vivid and De-Noise.
- The User Custom allows setup for each value. The values include Sharpness, Contrast, Colors and Brightness.
- When this feature is activated, the setup window is overlaid, and the image is displayed in the 1x1 format.

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.


Image Effect

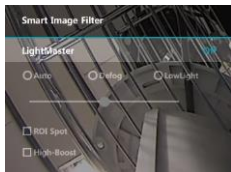
Clicking the  (Image Effect) button on the control toolbar displays the image effect control toolbar and allows you to control image effect. This change will be applied to only the video of the COSTAR starNET Pro program and not to the device.



-  (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.


Smart Image Filter

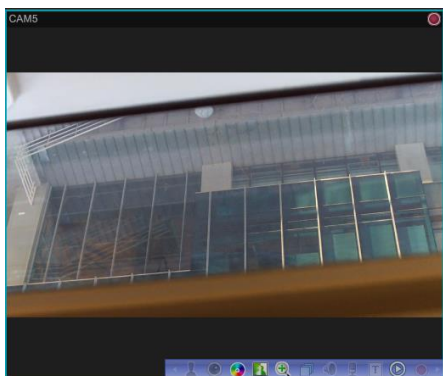
Clicking the  (Smart Image Filter) button on the left bottom of the recorded image allows you to apply filters to an image according to the conditions of the image or purpose.

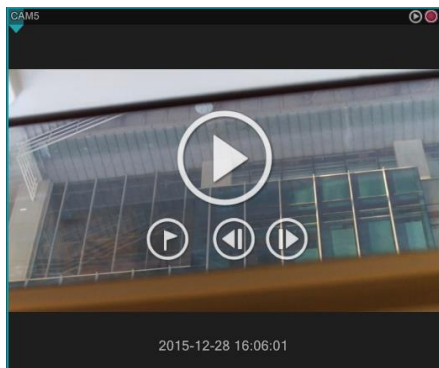


- Auto, Defog, Lowlight: Applies filters and set each value.
- ☒ ROI Spot: Applies filters to the selected area only.
- ☒ High-Boost: Applies high-frequency enhancement filter.

Instant Playback

You can use Instant Playback function for the section with the recording information. Click the  (Instant Playback) button on the control toolbar and select a playback time on the popup menu.





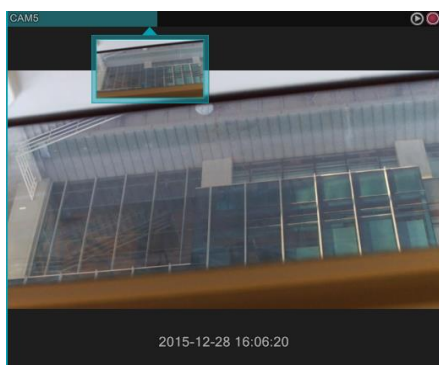
Hovering the mouse cursor over the screen allows you to use Play, Pause, Forward/Backward, and Bookmark buttons.

Using the left/right arrow buttons and PageUp/PageDown buttons allows moving the playback point.

Select reverse playback and slow playback from the context menu of the image.

Hotkey (Ctrl+Hotkey) can also be used.)

- J/K/L : Decrease / reset / increase the playback speed.
- ,; : Executes high-speed playback.
- .: Executes high-speed reverse playback.



The status of playback appears on the camera title bar.

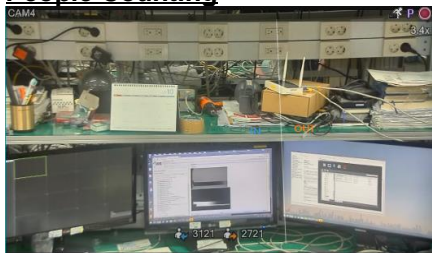
Clicking the inverted triangle image beneath the camera title bar displays a thumbnail image. When the thumbnail image is enabled, hovering the mouse cursor on the camera title bar displays the image of the corresponding site.

Clicking a specific point on the camera title bar moves to the corresponding site.

Video Analysis

Select a monitoring video and click the right mouse button to see the display menu. Select **Draw Video Analysis** from the display menu to activate the menu according to the current video analysis type.

People Counting



Selecting **People Counting** displays real-time In/Out information over the selected video.

Queue Management



Selecting Queue Management displays queue information (the number of people, waiting time) for each area over the selected video.

In the case of Queue Management, checking Exceed People Limit and Exceed Time Limit events is available.

Heat Map



Selecting a Heat Map live icon displays a heat map image over the selected video.

Select options of Heat Map live to change a heat map image setting (image spectrum color, transparency, image interpolation option).

Queue monitoring / swarm detection / social distance violation / mask rule violation



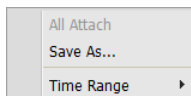
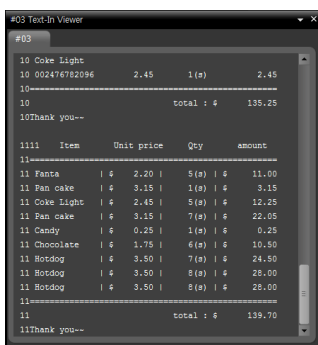
Selecting queue monitoring / swarm detection / social distance violation / mask rule violation displays the set image analysis area.

Up to 5 areas are displayed for queue monitoring.

If the set limit is exceeded, an event is raised and the area of the offending object is highlighted.

Text-In Viewer

Clicking the **T** (Text-In Viewer) button on the control toolbar displays the text-in viewer window and allows you to check the text-in data in real-time (supported only when a text-in event is detected). The camera title bar is highlighted in blue when a text-in event is detected.



Clicking the title bar in the Text-In Viewer window displays a text-in popup menu.

- **All Attach:** Docks all text-in viewer windows in one panel.
- **Save As:** Saves the text-in data as a text file (.txt).
- **Time Range:** Set up the length of time for text-in data to be displayed when a text-in event occurs. You can check the text-in data in the text-in viewer window within the established time range for the event.

5.6 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 6.5 Client, Menu – Preference Settings, Map (p. 67) 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;

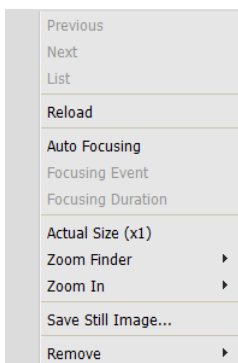


- When Zoom Finder is set to Auto or On;



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. 85) 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 6.5 Client, Menu – Preference Settings (p. 60) for details.
- Save Still Image: Saves the current image on the screen as an image or PDF file at its original size.
- Remove: Disconnects the current connection.

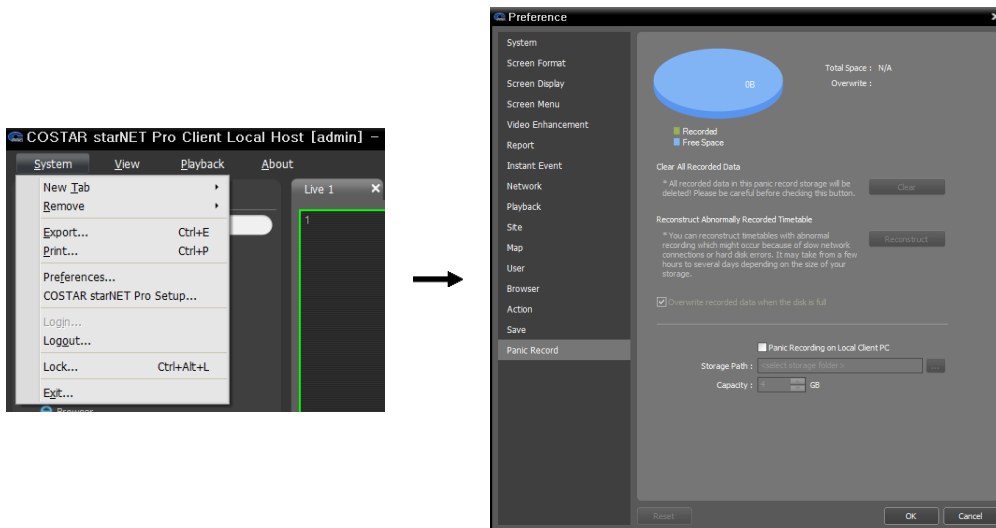
Chapter 6 — Recording




You can record video from cameras connected to devices and COSTAR starNET Pro program provides panic recording. You can manually start and stop panic recording while monitoring the video. The panic recordings are saved in the Client system.

6.1 Setting up Panic Recording

You can manually start or stop panic recording while monitoring the video (panic recordings are saved in the Client system).

1. Go to the System Menu → Click Preference, and the Preference window appears. → Click Panic Record. Check the Panic Recording on Local Client PC box to enable panic recording in the Client System.



2. Run the COSTAR starNET Pro Client program. Select a camera screen (on the Live screen) on which video to record is displayed and click the  (Panic Recording) button on the control toolbar. The Panic Recording OSD () appears in the top right corner of the camera screen, and the system starts recording the video on the screen. Clicking the  (Panic Recording) button again stops recording.



NOTE: Panic record is available only when video is currently displayed on the Live tab. For example, if you change the screen format during panic record and monitoring video is hidden on the Live tab, panic record will stop for the hidden video.

Chapter 7 — Recorded Video Playback & Exportation

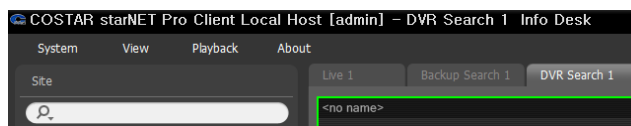
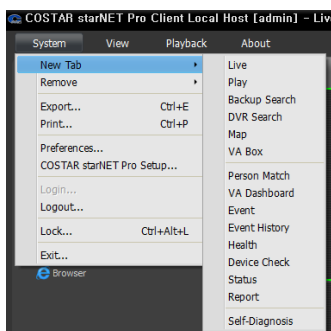
You can play back recorded video or export recorded video to USB devices.

First, check the following and run the Client program.

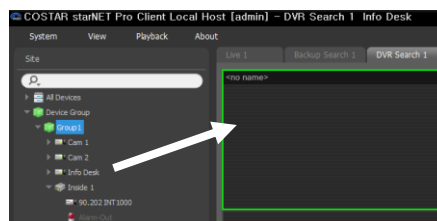
- Services should be running on the system. Refer to 3.1 Running Services (p. 25) for details.
- Devices should be added to a device group. Refer to Chapter 14 — Device Management (p. 146) for details.

7.1 Playing back Recorded Video

1. Search and playback of video recorded in DVRs, Client system, or SD (SDHC) memory cards inserted to network cameras using the DirectNET protocol are in the DVR Search panel (maximum 4 – maximum 2 panels in a 32-bit system). If the DVR Search tab is not on the tab panel, go to the System menu, click New Tab and then DVR Search.



2. Click the DVR Search tab on the tab panel → Select a site to connect to from the Site list and drag and drop it on the DVR Search screen. Recorded video from the selected site is displayed on the screen. You can move a camera screen to the desired location on the 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 administration service, you can play video in the layout format by selecting a desired layout from the Layout list and dragging and dropping it on the DVR Search screen. Refer to 7.1 Monitoring Video, Layout Monitoring, Registering Layouts (p. 77) 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 document 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.



NOTE: The toolbar may be different and some functions below may not be supported, depending on the specifications and version of the device.

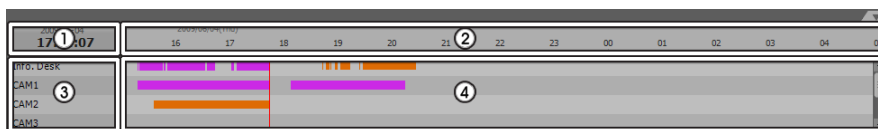


- (Event Search/Time-Lapse Search): Switches search mode between event search and time-lapse search. Refer to Timetable/Event List (p. 101) for details.
- (Search Filter): Sets search conditions for event search. Refer to the device's user manual for details about the search condition.
- (Calendar): 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.
 - Data Source: Selects the data source to be searched.
 - 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.
 - Add Bookmark: Bookmarks the recorded video.
 - Deleted Recording Devices: Allows you to search for a removed device and play back video from that device if video was recorded in the COSTAR starNET Pro system before the device was removed.
 - 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).





-  (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. 118) for details.
 - 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 and ending point to specify an area. 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).
 - 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).
 - Reserved Self-Player: Displays the list of reservations of exporting as a self-player file. Clicking the  button performs the reserved exporting manually, and clicking the  button cancels the reservation.
 - Save Still Image: Saves the current image on the screen as an image or PDF file at its original size.
 - Export Image File, Print Image: Exports or prints the images currently displayed on the screen.
 - Export Panorama Screen: Exports the images currently displayed on the screens.
-  (Bookmark): Allows you to bookmark the selected recorded video. Refer to Bookmark (p. 108) for details.
-  (Thumbnail Search): Displays snapshot of images recorded during the event-based recording (event and pre-event) in the Play panel. Refer to Thumbnail Search (p. 109) for details.
-  (Configure Filter): Sets up search filters. Event search, timelapse search and meta filtering search are supported.
-  (Text-In Panel): Displays the Text-In panel. The Text-In panel shows the text-in data of the devices currently connected to the COSTAR starNET Pro. If a camera is associated with the text-in device and the video of the associated camera is displayed on the current Play screen, the text-in data is displayed on the video on the camera screen, too.
-  (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): 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): 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.

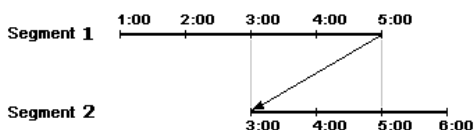


NOTE: The timetable will differ depending on the model of the device.

- 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 or one hour segments depending on the device.
 - Second, 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, Navy blue for Panic Recording, and Orange for Irregular recording caused by temporary disconnection from the device).
 - Moves the recorded image by 1 second~1 minute according to the timetable magnification.
 - 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: If the administration server's 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 individually play video that was recorded during the overlapping time by selecting a segment.

For example, when the administration server 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 as follows:
 - **Play panel:** Events only that were recorded during Event recording.
 - **DVR Search panel:** All events when searching for video recorded in a DVR, and events only that occurred while recording on an SD (SDHC) memory card is enabled when searching for video recorded on an SD (SDHC) memory card.









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

Clicking an event from the list displays the event-recorded video on the screen if the events were recorded during Event recording. Clicking the  button in the top right corner of the event list displays next results.

Control Toolbar

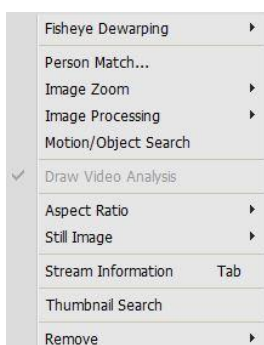
The control toolbar is displayed over a selected camera screen when hovering the mouse cursor over the camera screen. Hovering the mouse cursor over each button displays a tooltip for the button.



-  (Fisheye Dewarping): Dewarps the fisheye camera image.
-  (Person Match): Runs Person Match search. Refer to **Chapter 22— Person Match Service** (p.240) for details.
-  (Object/Motion Search): Allows you to search for changes or motion in the recorded images on the COSTAR starNET Pro system or the Client system. Refer to **Object/Motion Search** (p. 114) for details.
-  (Image Zoom): Zooms in on the image. Refer to **Zoom Control** (p. 115) 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. This change will not be applied to the recorded video.
-  (Image Effect): Adjusts the image effect. Refer to **Image Effect** (p. 115) for details.
-  (Audio Play): Plays audio when playing back video that has recorded audio (1x1 screen format only).

DVR Search Screen Menu


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

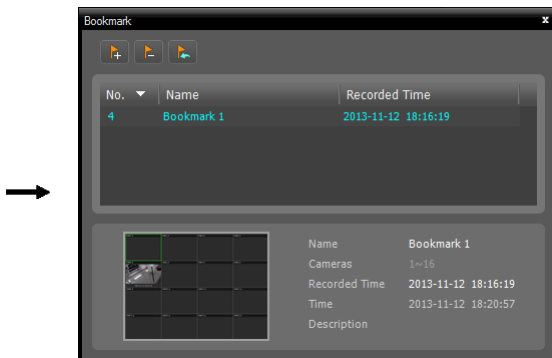
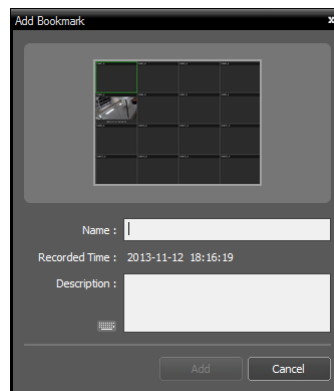
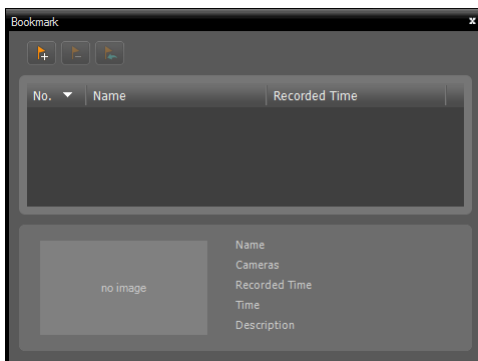





- **Person Match:** Allows you to use Person Match search. Refer to **Chapter 22— Person Match Service** (p.233) for details.
- **Image Zoom:** Works the same as clicking the corresponding the button on the control toolbar. See **Control Toolbar** (p. 107) for details.
- **Image Processing:** Enhances playback images. Refer to **Control Toolbar** (p. 107) for details.
- **Object/Motion Search:** Search for changes in objects or movements in recorded images stored in the COSTAR starNET Pro system. Refer to **Object/Motion Search** (p. 110) 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.
- **Still Image:** Saves the current image on the screen as an image or PDF file at its original size.
- **Stream Information:** Displays the stream information of the current video on the screen.
- **Thumbnail Search:** Allows you to use thumbnail search of the selected video.
- **Remove:** Disconnects the current connection.

Bookmark

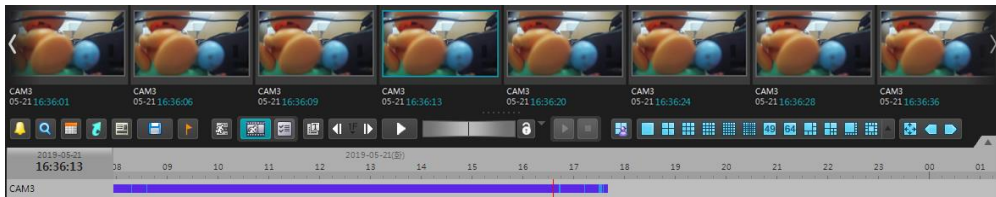
Clicking the  (Bookmark) button on the panel toolbar allows you to bookmark the selected recorded video.




1. Click the  (Add Bookmark) button.
2. Enter the bookmark name and description.
Clicking the Add button bookmark the recorded video.
3. Clicking a bookmark from the bookmark list displays the bookmark information at the bottom.
Clicking the  (Play Recorded Data) button displays the bookmarked video on the DVR Search screen. Clicking the  (Remove Bookmark) button deletes the bookmark.

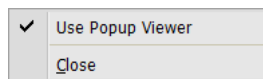
Thumbnail Search

Thumbnail search displays snapshots of recorded images in a list of thumbnail form on the play panel.




Clicking the  (Thumbnail Search) button on the panel toolbar displays a list of thumbnail images based on the filter settings. The timetable displays the recording information of the selected snapshot. Use the arrows on both sides or wheel scroll to move to the previous/next image. Hovering the mouse cursor over each snapshot displays a popup viewer screen above the snapshot.

In time-lapse mode, another click on the selected image decreases the thumbnail time interval. When the interval is 1 second, a popup menu for selecting the interval is displayed.



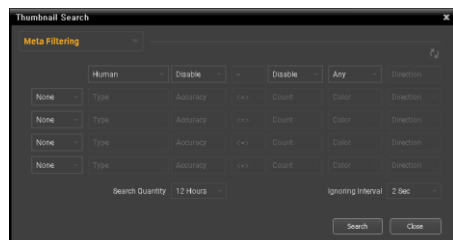
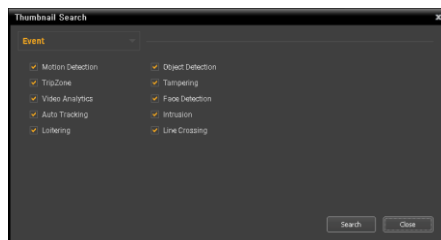
- Use Popup Viewer: Enables display of the popup viewer screen.

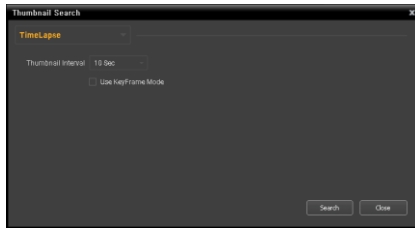
Configure Filter

Click the  (Configure Filter) button to set up search filters. Event search, timelapse search and meta filtering search are supported.

- Event Search: Select more than one event to display the recorded image of the time when the event occurred.
- TimeLapse Search: Displays the images according to the set time interval (4 Hours, 1 Hour, 10 Minutes, 1 Minute, 30 Seconds, 10 Seconds, 1 Second). When Use KeyFrame Mode is selected, only keyframe images are listed.
- Meta Filtering Search: Displays meta data images which include data based on certain conditions. Conditions include object type, accuracy, amount, color and direction, and these conditions can be combined by AND or OR for search.

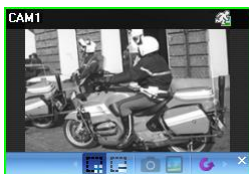
NOTE: Meta data is saved when devices are registered under video analytics service (IDLA), and monitoring service is registered with recording option.



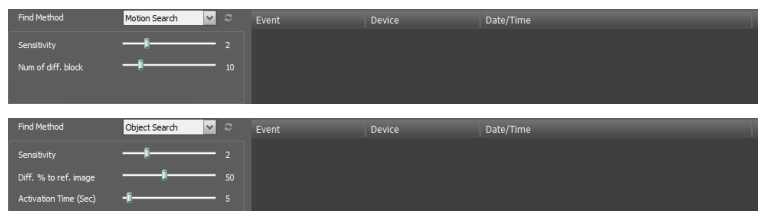


Object/Motion Search

Clicking the (Object/Motion Search) button on the control toolbar opens the Object/Motion Search panel at the bottom on the screen. You can use the options in this panel to search for changes or motion in the recorded images on the COSTAR starNET Pro system or the Client 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

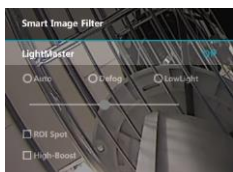
Clicking the  (Image Effect) button on the control toolbar displays the image effect control toolbar and allows you to control image effect. This change will not be applied to the recorded video.



-  (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.


Smart Image Filter


Clicking the  (Smart Image Filter) button on the left bottom of the recorded image allows you to apply filters to an image according to the conditions of the image or purpose.





- Auto, Defog, Lowlight: Applies filters and set each value.
- ☒ ROI Spot: Applies filters to the selected area only.
- ☒ High-Boost: Applies high-frequency enhancement filter.

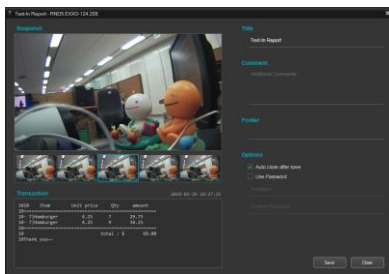
Text-In Report

Text-In search results can be saved as a PDF file report. Click  (Search) in the toolbar at the bottom of the Play Panel and select Text-In from the popup window.



Event	Triggered by	Transaction	Date/Time
Text-In	Text-In 1	0202 Item Unit price Qty ...	2019-03-29 18:30:45
Text-In	Text-In 1	0101 Item Unit price Qty ...	2019-03-29 18:30:44
Text-In	Text-In 1	1616 Item Unit price Qty ...	2019-03-29 18:30:43
Text-In	Text-In 1	1515 Item Unit price Qty ...	2019-03-29 18:30:42

Search Text-In from  (Search Conditions) to switch to the event search mode like the above. When search is complete, click  (Text-In Report) or double-click on the recorded image with the text-in data from the Play tab and switch it to 1x1 layout. Right click on the mouse and select **Save Text-In Report...** to bring up the following popup window.



Enter text-in information and click **Save** to save the text-in report as a PDF file.

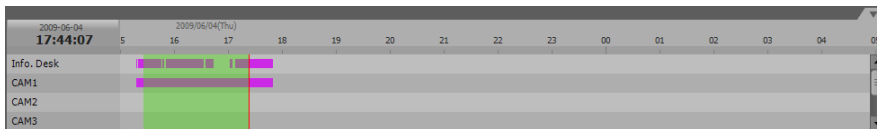
- **Snapshot:** Select an image to be included in the report. Select one of the 5 images from -2 ~ +2 seconds from the text-in event.
- **Transaction:** Displays the text-in data for the report.
- **Title, Comment, Footer:** Enter the title, comment and footer of the report.
- **Options**
 - **Auto close after use:** Automatically closes the text-in report window after saving is complete.
 - **Use Password:** Saves the text-in report as a PDF file with a password.



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.



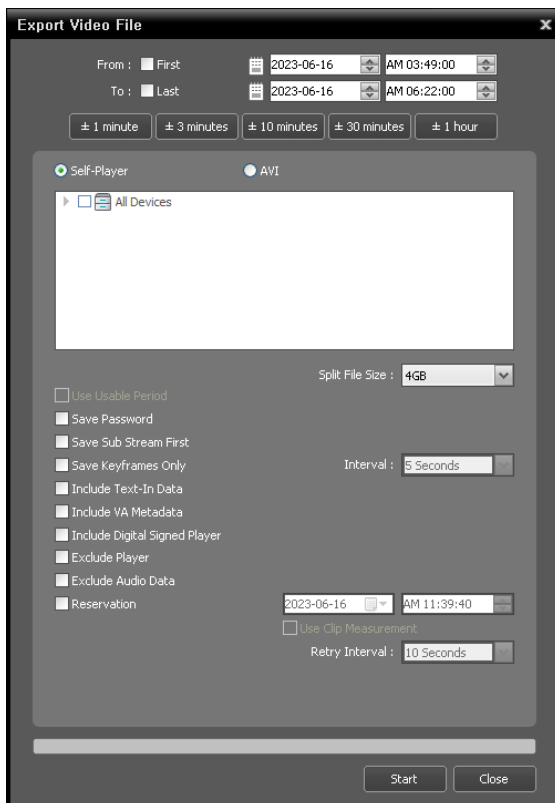
- **A-B Export Video File:** Sets up the section of video to be exported by using the timetable. Select A-B Export Video File from the export menu. Click the starting point and ending point to specify an area. The Export Video File window appears and allows you to export video of the selected period as a self-player file (.exe) or an AVI file (.avi). Refer to [Exporting as a Self-Player File](#) (p. 118) and [Exporting as an AVI File](#) (p. 122) 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. 118) and [Exporting as an AVI File](#) (p. 122) for details.
- **Reserved Self-Player:** Displays the list of reservations of exporting as a self-player file. Clicking the  button performs the reserved exporting manually, and clicking the  button cancels the reservation. Refer to [Exporting as a Self-Player File](#) (p. 118) for details about reservation of exporting as a self-player file.
- **Save Still Image:** Saves the current image on the screen as an image file at its original size.
- **Export Image File:** Exports the images currently displayed on the screen.
- **Export Panorama Screen:** Exports the images on the screen of all panels.
- **Print Image:** Prints the images currently displayed on the screen.

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 recorded video. Selecting **Last** sets the date and time to the date and time of the last 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**.
- **Split File Size:** Splits and saves the file if the recorded video data exceeds the set split file size.
- ☒ **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.
- ☒ **Save Sub Stream First:** Saves sub stream first between main and sub stream from dual-recorded data.
- ☒ **Save Keyframes Only:** Saves keyframes only for the selected interval. This is used when saving videos in summary.


- ☒ **Include Text-In Data/ANPR/VA Metadata:** Includes text-in data/ANPR/Event when saving video if the video was recorded with this data.
- ☒ **Include Digital Signed Player:** Saves the recorded data with the Digital Signed Player.
- ☒ **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 COSTAR starNET Pro installation folder (\Client\selfplayer) to play the saved file. This may not be supported, depending on the specifications and version of the device.
- ☒ **Exclude Audio Data:** Saves the recorded data without the audio data.
- ☒ **Reservation:** Reserves the time for saving a self-player file. If it fails to save due to a device disconnection, it retries saving according to the retry interval setting.
- ☒ **Use Clip Measurement:** Measures the clip size in advance to determine its capacity.

NOTE: When the recorded data reaches 2GB or 4GB, a popup message asks to continue saving after splitting the file.

NOTE: If network failure or disconnection occurs during saving, it is displayed in the “Reserved Self-Player” list. When the network connection is restored, it resumes saving from the point where the saving was paused.

NOTE: In order to pause saving, click the “Stop” button and select “Add to Reserved Self-Player” and click “Yes”. Saved files are displayed in the “Reserved Self-Player” list, and select “Start” from the popup menu to resume saving.

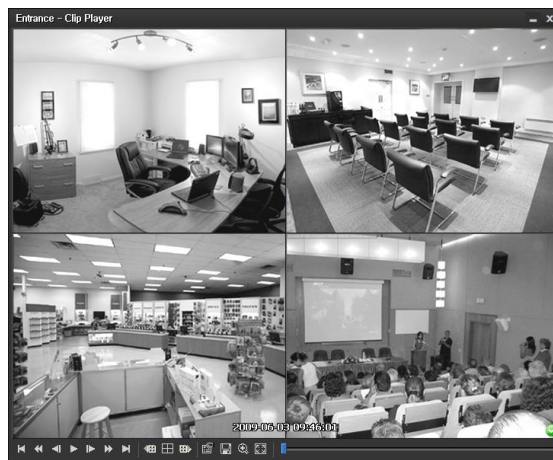
Playing Self-Player File

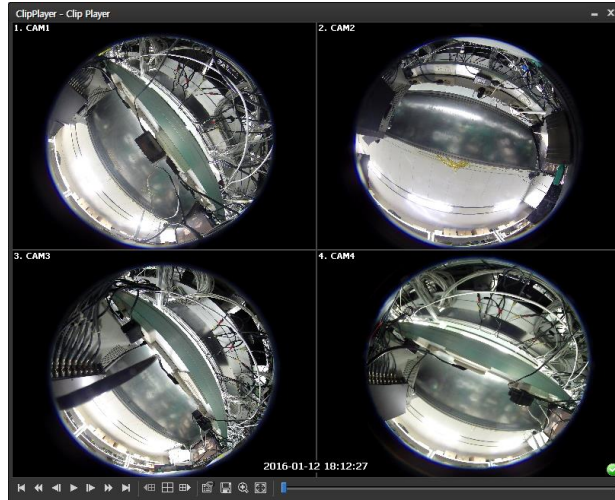
You do not need to install any special software to play video exported as a self-player file because the self-player file contains a player program (Clip Player). Double clicking the target file starts the Player program, and video is displayed on the screen. Clicking the slide bar at the bottom of the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

NOTE: 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.

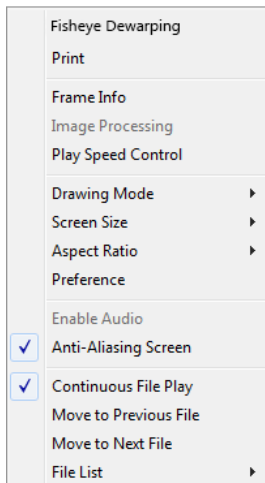
NOTES:

- 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 AMD chipset are recommended.
- Some functions may not be supported by certain devices.
- 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 COSTAR starNET Pro installation folder (\\Client\\selfplayer) to play the saved file.
- It is required to have Window Vista or a higher operating system for Fisheye Dewarping. Fisheye Dewarping is supported in the 1x1 screen format only. You can control by clicking the right mouse button on the screen.






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









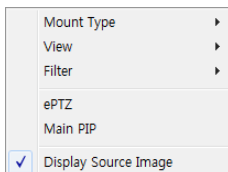
- **Fisheye Dewarping:** Controls Fisheye Dewarping. Refer to the following Dewarp menu for more accurate functions.
- **Print:** Prints the current image.
- **Frame Info.:** Displays Channel, Title, Time, Type, Size and Resolution information about the image.
- **Image Processing:** Controls brightness, 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.
- **Preference:** Changes the basic settings on each camera 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.

- **Show Text-In:** Displays text-in data if the video was recorded with text-in data. In the single-screen layout, text-in data is displayed with images on the screen. In multi-screen layouts, click the right mouse button on a camera screen and then a text-in menu.
- **Continuous File Play:** Plays the files that compose the split file successively. For example, if video is split to 3 files of abc_01.exe, abc_02.exe and abc_03.exe when it is saved, you don't need to play each file one by one manually. When you play the abc_01.exe file, abc_01.exe, abc_02.exe and abc_03.exe files will be played successively.
- **Move to Previous File:** Moves to the previous file from the currently playing file or the file to be played when playing a split file.
- **Move to Next File:** Moves to the next file from the currently playing file or the file to be played when playing a split file.
- **File List:** Lists the files that compose the split file in sequence. Selecting a file from the list moves to the selected file.
-  : 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.
- **Save Frame Info:** Saves the frame information as a CSV file.

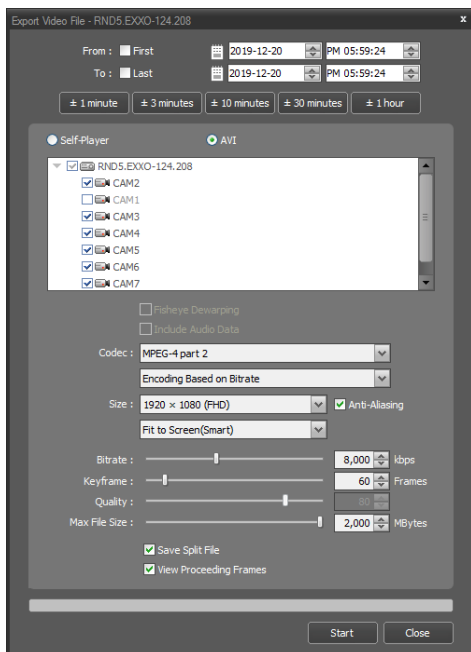
-  : Selects the image size option to enlarge the image or display the image in its actual size (1x1 screen format only). You can move the enlarged image by clicking the left mouse button and dragging.
-  : Displays the image in the full screen.
- ,  : Is displayed at the bottom-right corner of the screen.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



- **Mount Type:** Chooses a position that the camera is mounted. Choose from Auto, Wall, Ceiling and Desktop. The available Screen Type changes depending on this setting.
- **View:** Selects the fisheye dewarping view option. Choose from Single, Quad and Panoramic view. When ePTZ is on, you can control Pan, Tilt and Zoom by clicking the left/right mouse button.
 - **Single:** Displays the original fisheye dewarping video. The Main PiP is selected as a default.
 - **Quad:** Displays 4 different view dewarping images on one pane in the 2x2 layout.
 - **Panoramic:** Displays video in panoramic mode.
- **Filter:** Choose a filter to improve the resolution. Choose from Nearest, Linear, Cubic, and Linear, NN OnPTZ filters.
- **ePTZ:** Controls Pan, Tilt and Zoom function. Dragging the mouse, the size of dragging indicates the speed of PTZ. The left button drag controls Left/Right (Pan) and Up/Down (Tilt). The right button drag controls Zoom.
- **Main PiP:** Displays PiP (Picture in Picture) view to select the area easily in the main view screen.
- **Display Source Image:** Cancels the adjustment and reloads the original image.

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 recorded video. Selecting **Last** sets the date and time to the date and time of the last 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.
- **Fisheye Dewarping:** Saves the video as dewarped image displayed on the screen. This function is only activated in a single camera with the activated dewarping function. The video can be saved in panoramic or VR mode.
- ☒ **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

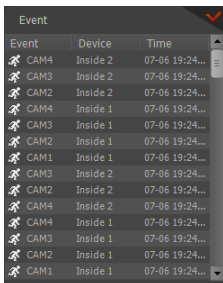
You can monitor video from a camera where an event is detected and play back event-recorded video. Event related functions may not be supported depending on the protocol that the device uses and the device model (supported protocols: DirectNET protocol, some versions of the Axis, Panasonic BB, Panasonic WV (DG), Baster, Mobotix, Pelco, RTSP/STP, Protocol-H, IQinVision, Sony, and ONVIF™ Conformance protocols). Ask your dealer or distributor for details.

First, check the following and run the Client program.

- Services should be running on the system. Refer to 3.1 Running Services (p. 25) for details.
- Devices should be added to a device group. Refer to Chapter 14 — Device Management (p. 142) 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.

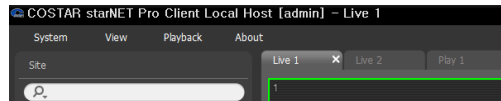
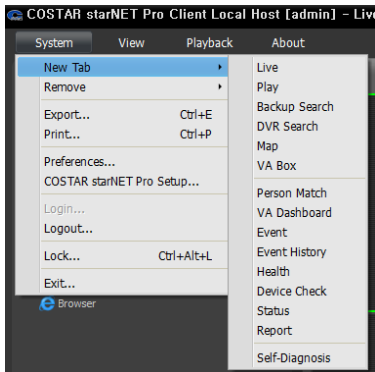
You can change the options of the event list display during Menu – Preference Settings. Refer to 4.4 Client, Menu – Preference Settings (p. 62) for details.

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):

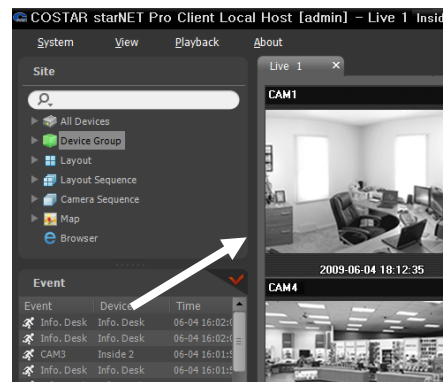
	Motion Detection		Video Blind		Video Loss
	Object Detection		Audio Detection		Video Analytics Detection
	Trip-Zone		Tampering		Text-In
	Alarm-In On/Off		Alarm-In Bad/Good		External Storage In/Out
	Device Connected/Disconnected		System Restart		System Boot Up
	System Alive		Disk S.M.A.R.T.		System Shut Down
	Recorder Bad		Disk Almost Full		Disk Bad
	Disk Full		Panic Recording On/Off		Disk Config Change
	Disk Temperature		Exceed People Limit On/Off		Fan Error On/Off
	Face Detection		Recording Fail/Complete		Exceed Time Limit On/Off
	VA Loss/No VA Loss		Cover Open/Closed		Auto-tracking Detection On/Off
	Network Alarm-In Detection On/Off		Disk Partially Full		Storage Disconnected
	Stop Recording		ANPR Detection On/Off		Disk Partially Almost Full
	PIR Detection On/Off		Line Cross Detection On/Off		Intrusion Detection On/Off
	Loitering Detection On/Off		ANPR AllowList Detection On/Off		Alarm Box Error/Off
	ANPR DenyList Detection On/Off		Temperature Alarm Detection On/Off		Exceed Occupancy Limit Detection On/Off
	Low Battery		Social Distance Violation Detection On/Off		Mask Rule Violation Detection On/Off
	Crowd Detection On/Off		Illegal Dumping On/Off		
	Violence detection On/Off				

Monitoring Video

Monitoring video from a camera where an event is detected is supported in the Live panel (maximum 4 – maximum 2 panels in a 32-bit system). 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.



Chapter 9 — Device Status Monitoring

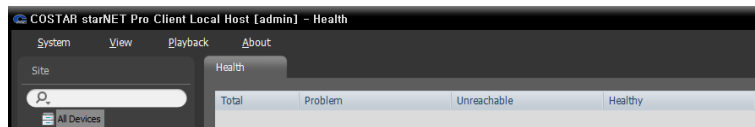
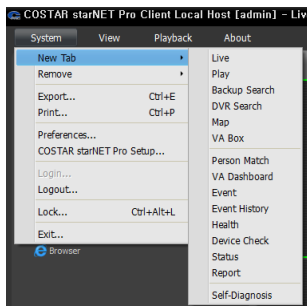
You can simultaneously check the status of registered devices.

First, check the following and run the Client program.

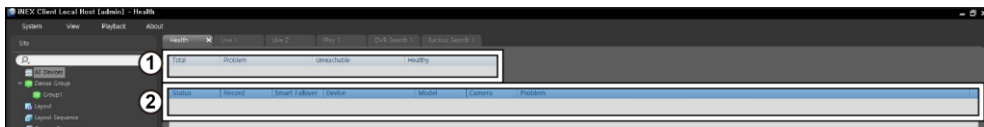
- Services should be running on the system. Refer to 3.1 Running Services (p. 25) for details.
- Devices should be added to a device group. Refer to Chapter 14 — Device Management (p. 142) for details.

9.1 Health Monitoring




System health monitoring is supported in the Health panel (supported only for devices registered on recording services). 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.



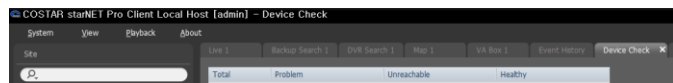
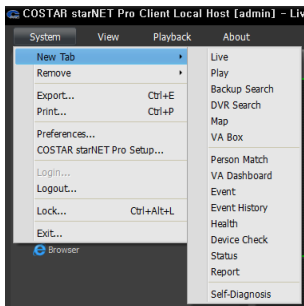
- ① **Summary List:** Displays the health monitoring status of all devices registered on recording services in summary.
 - **Total:** Displays the number of devices registered on recording services.
 - **Problem:** Displays the number of devices where a problem is detected.
 - **Unreachable:** Displays 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 event 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).
 - **Record:** Displays the recording status.
 - **Smart Failover:** Displays the smart failover status.
 - **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.
- ③ **Function Button**
 - (Refresh): Displays the newest information of the health monitoring panel.

-  (Event Condition): Sets the conditions for events to display. The data of the health monitoring which belong to the selected condition is displayed.
-  (Export): Saves the data of the health monitoring panel in .txt, .csv, .html and .pdf formats.
-  (Full Screen): Displays the Health monitoring panel in full-screen format.

9.2 Device Check

Device check is supported in the Device Check panel (supported only for devices which use the DirectNET protocol). If the Device Check tab is not on the tab panel, go to the **System** menu, click **New Tab** and **Device Check**.

NOTE: Connection or disconnection status check is also supported for the devices which do not use the DirectNET protocol.



The Client program automatically displays the device check results when the Device Check tab is added.

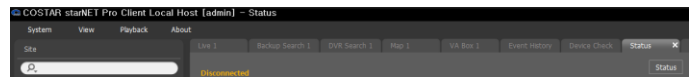
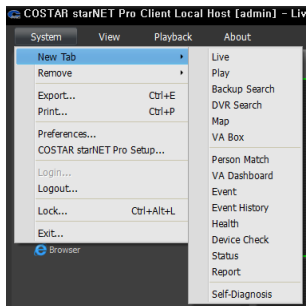


- ① **Summary List:** Displays the device check status of all devices registered on the administration service in summary.
 - **Total:** Displays the number of devices registered on the administration service.
 - **Problem:** Displays the number of devices where a problem is detected.
 - **Unreachable:** 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 event is detected, alarm in device error or recording error; **Unreachable:** The device is not connected).
 - **Problem:** Displays details regarding the problem.
 - **Group:** Displays the list of device groups that the device is registered on.
 - **Site:** Displays the device name.
 - **Address:** Displays the IP address of the device.
 - **MAC Address:** Displays the device's MAC address.
 - **Version:** Displays the system version information.
 - **Cameras:** Displays the status of cameras that are enabled in the device.

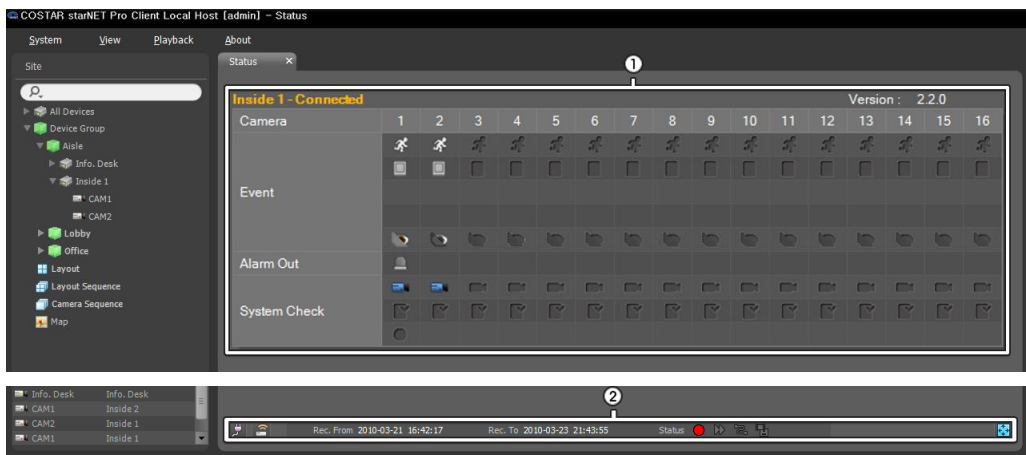
- Alarm In: Displays the status of alarm-in devices that are enabled in the device.
- Record: Displays the recording status.
- Record Check: Displays the recording check status.
- Record Period: Displays the recording period.

9.3 Status Monitoring



Device status monitoring is supported in the Status panel (supported only for devices which use the DirectNET 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.

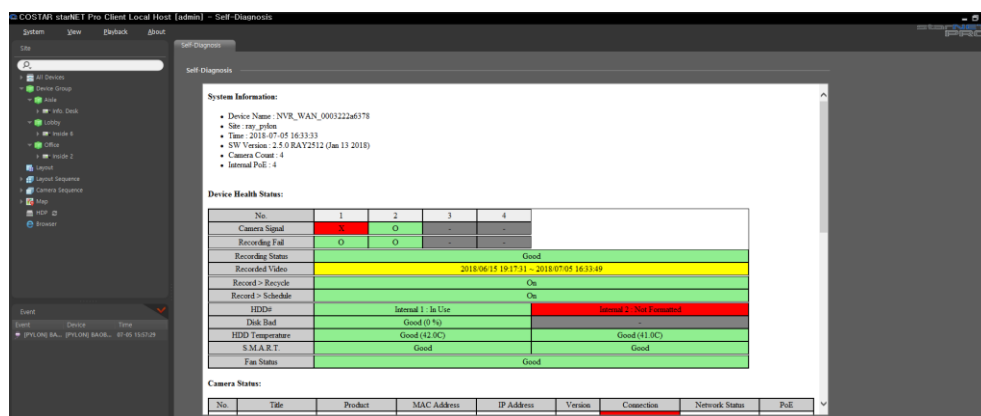
-  (Panic Recording): Starts or stops panic recording remotely (supported only for DVRs with the panic recording function).
- **Rec. From/To:** Displays the recording period.
- **Status:** Displays the status of playback, archiving, exporting of recorded video.
-  (Full Screen): Displays the Status panel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

9.4 Self-Diagnosis

Self-diagnosis is supported for overall diagnosis and reporting of a recorder's system, network and camera status. If the Self-Diagnosis tab is not on the tab panel, go to the **System** menu, click **New Tab** and **Self-Diagnosis**.







Select a device to connect to from the **Site** list, and drag and drop it on the Self-Diagnosis panel. The status of the selected device is displayed after the self-diagnosis.








- **Self-Diagnosis:** Display the overall status of a recorder in a report format.



- **Reports:** Display the results of self-diagnosis with date and summary.

- **Troubleshooting Reports:** Create and save a self-diagnosis report dump file to send it to the partner site.
 -  (Request Troubleshooting Reports): Create troubleshooting reports.
 -  (Delete): Delete the selected troubleshooting report from the list.
 -  (Save as File): Save troubleshooting reports as a dump file. After saving is complete, click **Register Partner Portal** and enter the partner site account if connected to the external network, to report the dump file to the partner site.
 -  (Refresh): Displays the newest list of the troubleshooting reports.



- **Function Buttons**
 -  (Disconnect): Disconnects the current connection of the self-diagnosis panel.
 -  (Refresh): Displays the newest information of the self-diagnosis panel.
 -  (Save): Saves the data of the self-diagnosis in an .html format.
 -  (Print): Prints the self-diagnosis results.
 -  (Full Screen): Displays the Self-Diagnosis panel in full-screen format.

Chapter 10 — Log Search

You can search log entries for the COSTAR starNET Pro program and the devices.

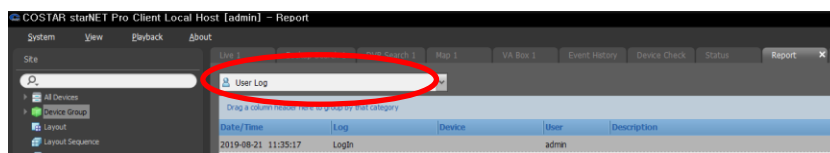
First, check the following and run the Client program.

- Services should be running on the system. Refer to 3.1 Running Services (p. 25) for details.
- Devices should be added to a device group. Refer to Chapter 14 — Device Management (p. 142) 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.



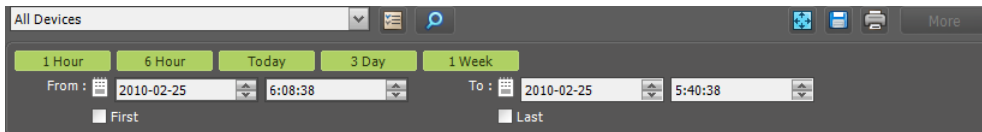
Select a log type to search from the drop-down list.






- **User Log:** Displays log entries from the Client program.
- **User Audit Log:** Displays log entries of the user audit of the COSTAR starNET Pro system.
- **Health Log:** Displays log entries of the system health monitoring for the registered devices.
- **Admin Service Log:** Displays log entries from the administration service.
- **Streaming Service Log:** Displays log entries for each streaming service for all registered streaming services.
- **Video Analytics Service Log:** Displays log entries for each video analytics service for all registered video analytics services.
- **Monitoring Service Log:** Displays log entries for each monitoring service for all registered monitoring services.
- **Device System Log:** Displays system log entries from the devices.
- **Device Event Log:** Displays event log entries from the devices. If the device is a network camera or network video transmitter, not all event logs are displayed but only the events that occurred while recording on an SD (SDHC) memory card is enabled.

If the connection was not made properly, the network disconnection log is displayed (only for devices registered on the DVRs). Refer to **Appendix – Network Disconnection Log** (p. 251) 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), a CSV file (.csv) or a PDF file (.pdf). 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

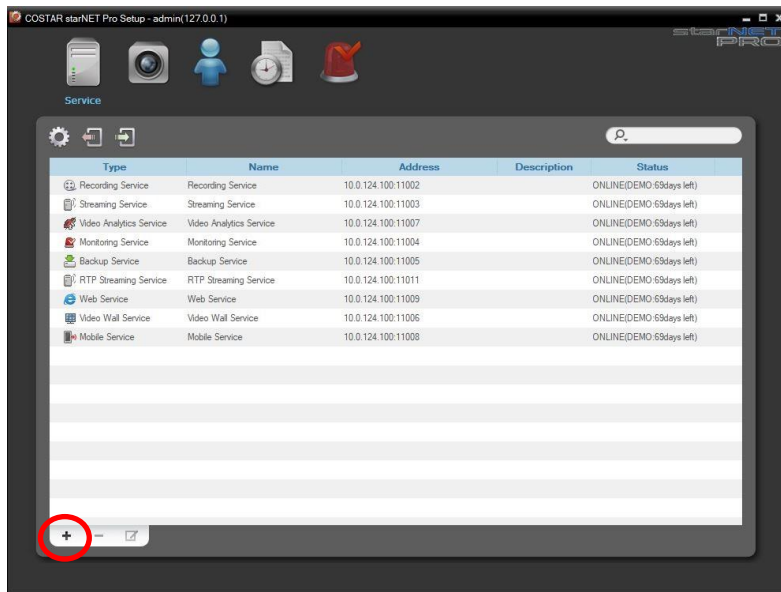
Multiple users can monitor video from devices through the streaming server. When the streaming service is not running, monitoring is still available, but it is restricted to fewer users based on the maximum number of simultaneous connections supported by the device.

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. 76) for details about monitoring.

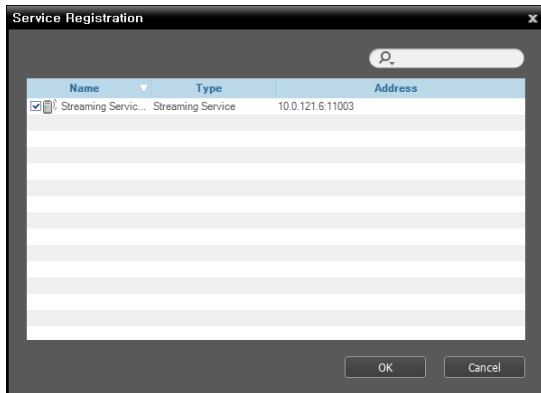
First, check the following and run the Setup program.

- Services should be running on the system. Refer to [3.1 Running Services](#) (p. 25) for details.
- Devices should be added to a device group. Refer to [Chapter 14 — Device Management](#) (p. 147) for details.

Select the **Service** menu, and then register a streaming service following the procedures below.



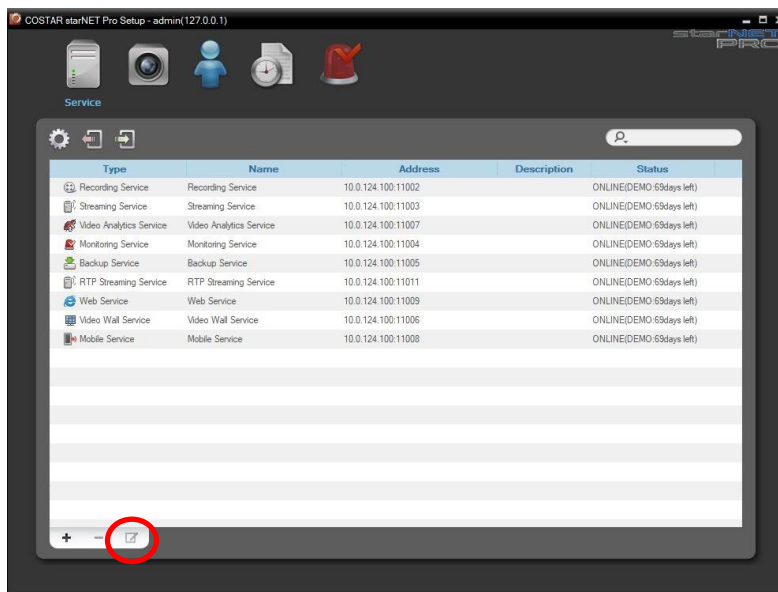
1. Click the **+** button at the bottom. The **Service Registration** window appears, and a list of available services is displayed with information about each service.




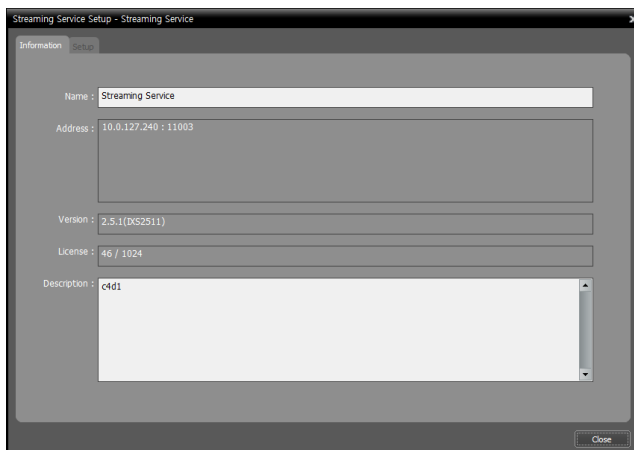
- **Name:** Displays services that are currently connected to the administration service via the network.
- **Type:** Displays the service type.
- **Address:** Display the IP address and port number of each server.

NOTE: Only the services of which the administration server information (*Service Manager* → *Option* → *Server Option*) matches the currently connected administration server are available.

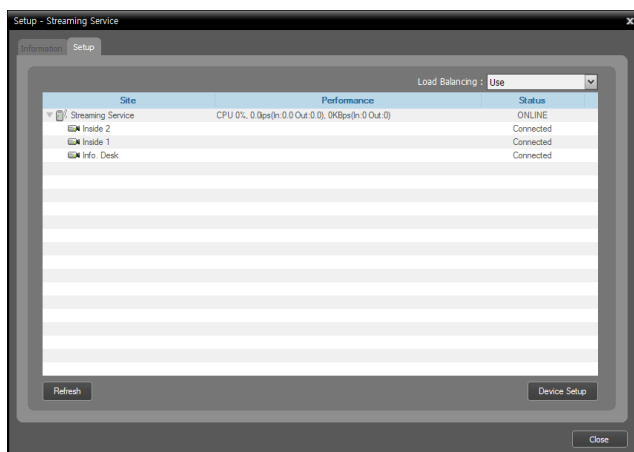
2. Select the streaming service to register on the COSTAR starNET Pro system, and the selected services are displayed in the service list.



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



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



The list of cameras registered on the current streaming service is displayed.

- **Load Balancing:** Allows you to enable or disable the load balancing function.
- **Device Setup:** Clicking the button allows you to register additional cameras on the current streaming service or removes a camera from the current streaming service.

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

Chapter 12 — Video Analytics

The video analytics service enables video analytics function. When the settings are configured properly, the video analytics is detected according to the preset rules and the COSTAR starNET Pro program considers the video analytics as an events. Refer to 12.2 Configuring Video Analytics Detection Events (p. 139) for details about setting up rules for the video analytics detection. The COSTAR starNET Pro program allows displaying the detection results on the monitoring screen. Refer to 5.5 Controlling Cameras, Live Screen Menu (p. 92) for details. Select video analytics type between Basic and IDLA. Refer to Chapter 12 — Video Analytics (p. 136) for details.

NOTES:

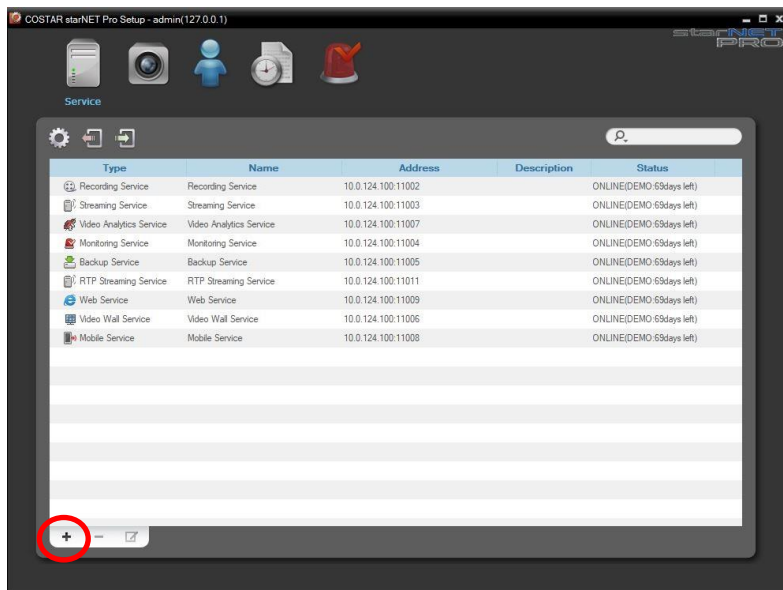
- For the video analytics function to work properly, cameras should be installed properly. Refer to *Appendix – Camera Installation Guide for Video Analytics Detection* (p. 270) for the proper installation of cameras for the video analytics function.
- Video Analytics may not flawlessly detect every object. Refer to *Camera Installation Guide for Video Analytics Detection* (p. 270) for details.
- When IDLA is selected, video analytics may not operate if it does not belong to video analytics recommended requirements.
- Saving IDLA video analytics metadata results in degradations in recording. Check the recording server performance in advance. Ask your dealer or distributor for more details.

First, check the following and run the Setup program.

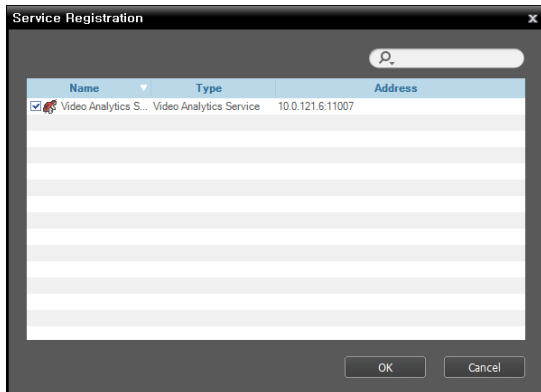
- Services should be running on the system. Refer to 3.1 Running Services (p. 25) for details.
- Devices should be added to a device group. Refer to Chapter 14 — Device Management (p. 147) for details.

12.1 Registering Service

Select the Service menu, and then register a video analytics service following the procedures below.



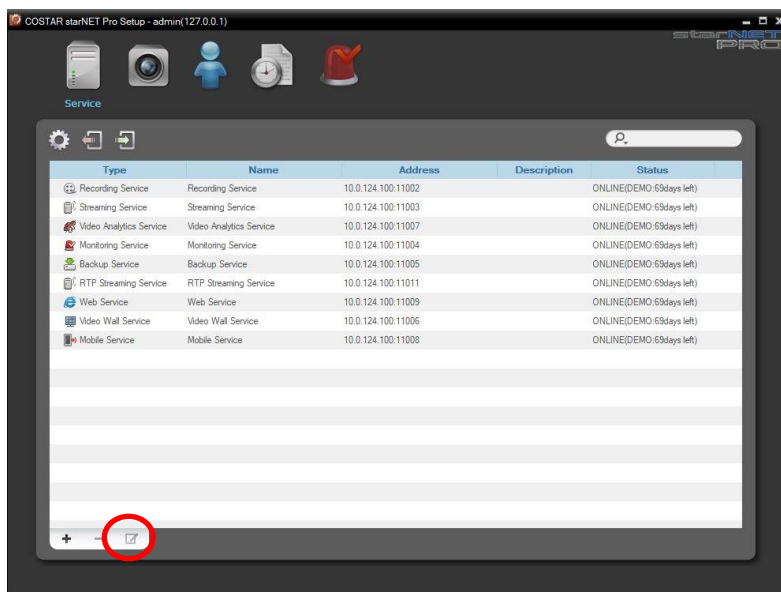
1. Click the **+** button at the bottom. The **Service Registration** window appears, and a list of available services is displayed with information about each service.



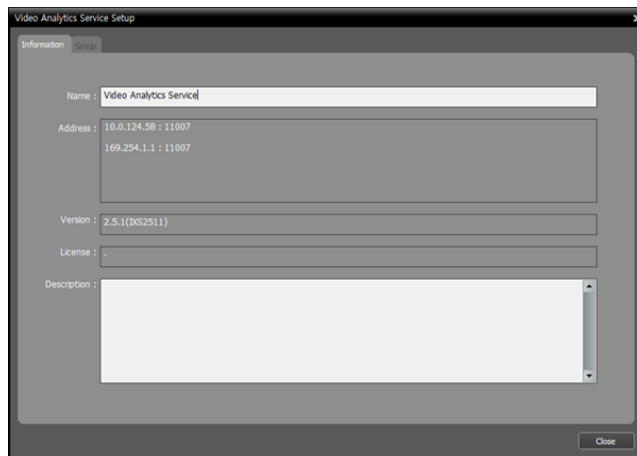
- Displays services that are currently connected to the administration service via the network.
- **Type:** Displays the service type.
- **Address:** Display the IP address and port number of each server.

NOTE: Only the services of which the administration server information (*Service Manager* → *Option* → *Server Option*) matches the currently connected administration server are available.

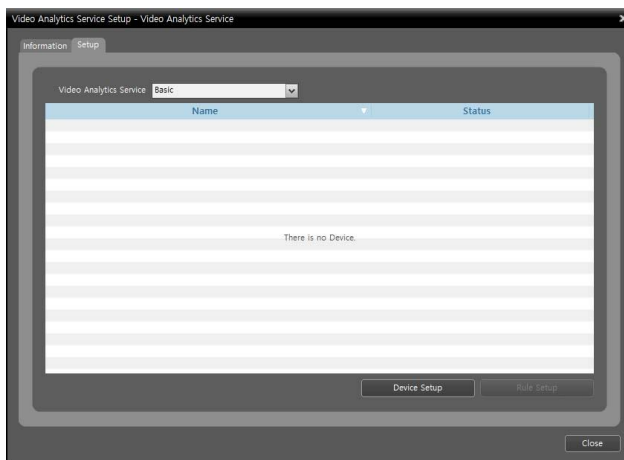
2. Select the video analytics service to register on the COSTAR starNET Pro system, and the selected services are displayed in the service list.



3. Select a video analytics service and click the ☒ button at the bottom. The Setup – Video Analytics Service window appears. Select the Information tab.



4. Enter the video analytics service's name and select the Setup tab.



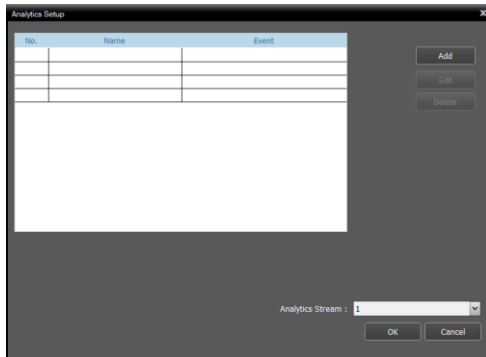
- **Video Analytics Service:** Select an engine to use between Basic/IDLA. IDLA is available only when HW specification is satisfied.
- **Device Setup:** Allows you to register devices to the video analytics service.
- **Rule Setup:** Selecting a camera from the list of registered devices and clicking the button allows you to set up the video analytics detection events.

5. Configure video analytics detection events.

12.2 Configuring Video Analytics Detection Events (Basic)

Configure when the Video Analytics service is set to **Basic** in the system setup.

1. Click the **Rule Setup** button in the **Setup – Video Analytics Service** window.

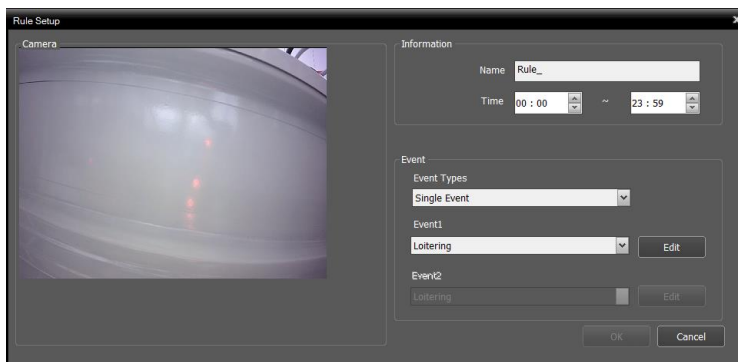


The list of preset rules is displayed. Clicking the **Add** button allows you to add other rules.

- **No.:** Displays the rule number. The maximum of four rules are available.
- **Name, Event:** Displays the rule name and event type. You can change them by clicking the **Modify** button.
- **Analytics Stream:** Select a stream to use for the video analytics.

NOTE: The Analytics Stream function is only supported for our cameras that support multistream.

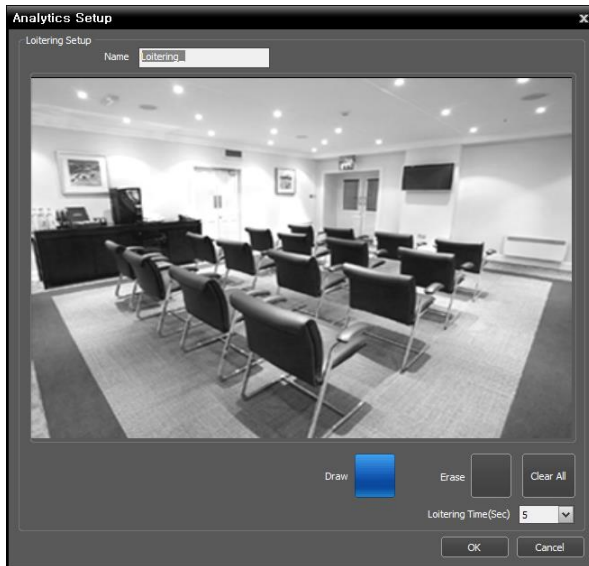
2. Click the **Add** button and set up the rules for the video analytics detection.



- **Camera:** Displays video of the current camera.
- **Name:** Enter a rule name.
- **Time:** Enter the rule operation time for a day.
- **Event Types:** Select an event type and set up events by clicking the **Edit** button. Refer to the following for details about setting up events. When the video analytics satisfying the settings is detected, the COSTAR starNET Pro program considers the video analytics as an event.
 - **Single Event:** When the video analytics satisfying the settings of Event 1 is detected, the COSTAR starNET Pro program considers it as an event.
 - **Double Event:** When the video analytics satisfying the settings of both Event 1 and Event 2 is detected in order, the COSTAR starNET Pro program considers it as an event.

Loitering

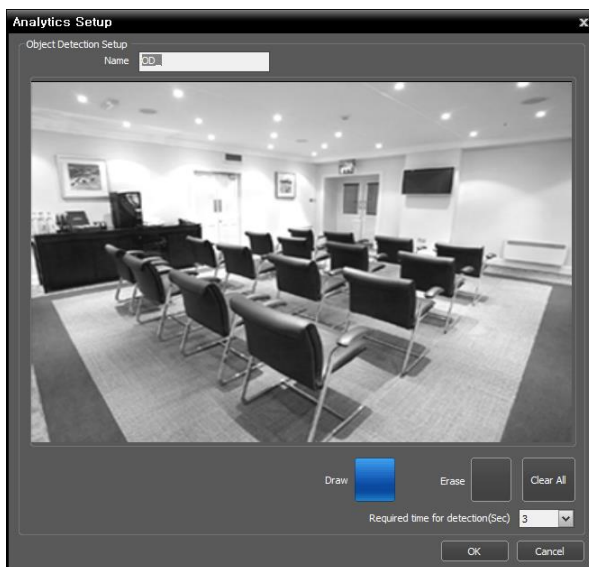
When any objects in motion are detected in the detection area during the loitering time, the COSTAR starNET Pro program considers it as an event.



- **Name:** Enter the event name. The name will be displayed in the rule list.
- **Draw, Erase:** Allows you to set up detection areas by enabling blocks on the screen. Click the button and enable or disable blocks by using the mouse drag and drop on the screen.
- **Loitering Time (sec):** Set up the length of time for the detection to last and to be recognized as an event.

Left/removed Object Detection

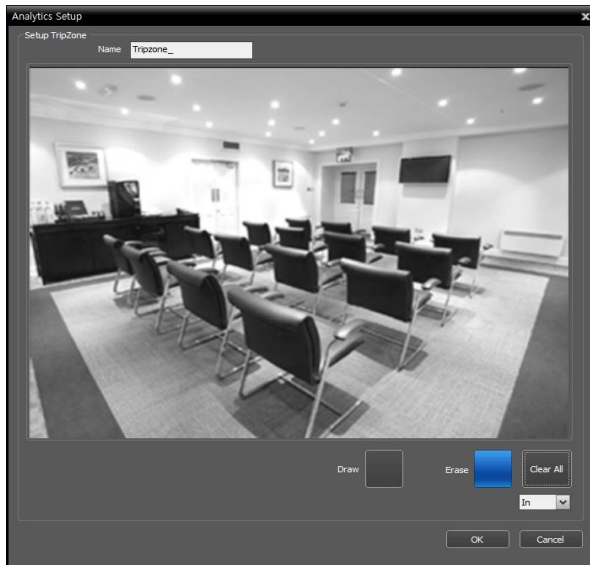
When an object is separated from another object in the detection area and left or removed during the required time for detection, the COSTAR starNET Pro program considers it as an event.



- **Name:** Enter the event name. The name will be displayed in the rule list.
- **Draw, Erase:** Allows you to set up detection areas by enabling blocks on the screen. Click the button and enable or disable blocks by using the mouse drag and drop on the screen.
- **Required time for detection (sec):** Set up the length of time for the detection to last and to be recognized as an event.

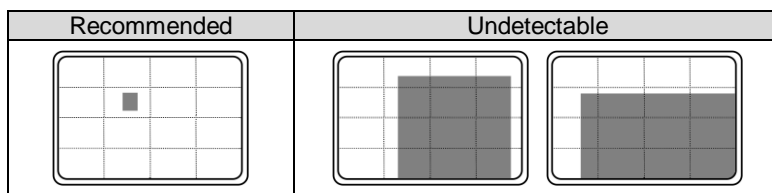
Trip-Zone

When any objects enter into the detection area or exit out from the detection area, the COSTAR starNET Pro program considers it as an event.



- **Name:** Enter the event name. The name will be displayed in the rule list.
- **Draw, Erase:** Allows you to set up detection areas by enabling blocks on the screen. Click the button and enable or disable blocks by using the mouse drag and drop on the screen.
- **In/Out:** Selecting In considers as an event when any objects enter into the detection area. Selecting Out considers as an event when any objects exit out from the detection area.

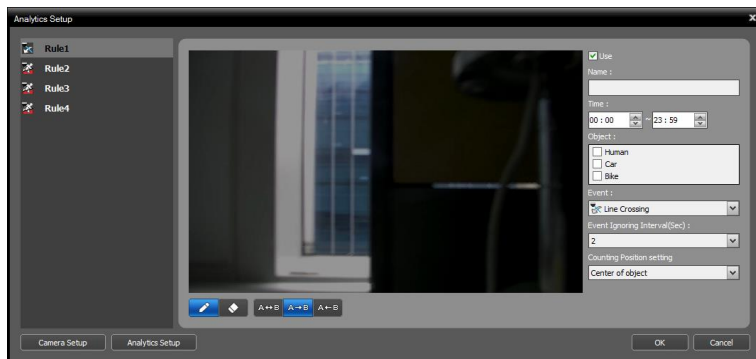
- **Object Size:** If an object size is too big or too small, the object cannot be recognized by video analytics detection. The object has to be large enough but not too big to be detected (bigger than 1/4 and smaller than 3/4 of the screen vertically and horizontally). If the object size is too big on the screen, place the camera farther from the object or use a shorter lens. Do NOT use digital zoom in order to adjust the object size. Refer to the images below for the detectable ratio of the object size.
- The detectable object size on the screen might be different from the ratios shown below depending on the camera installation environment. Check the proper image size for detection on the screen in the current environment and adjust the camera position accordingly.



12.3 Configuring Video Analytics Detection Events (IDLA)

Configure when the Video Analytics service is set to IDLA in the system setup.

1. Click the Rule Setup button in the Setup – Video Analytics Service window, then the list of preset rules is displayed. Clicking the Add button allows you to add other rules.



- **Use:** Check to use the rule.
- **Name:** Enter a rule name.
- **Time:** Enter the rule operation time for a day.
- **Event:** Select an event type and set up events by clicking the Edit button.
 - **Intrusion:** When an object enters the tripzone from outside or exits the tripzone, the COSTAR starNET Pro program considers it as an event.
 - **Loitering:** When an object is detected over the activation time in the tripzone area, the COSTAR starNET Pro program considers it as an event.
 - **Line Crossing:** When an object crosses the pre-set line, the COSTAR starNET Pro program considers it as an event.
- **Event Ignoring Interval(Sec):** Set the ignoring interval for consecutive events.
- **Activation Time(Sec):** Set the activation time for loitering.
- **Object:** Select an object to detect. Select from Human, Car and Bike.
- **Counting Position setting:** Select the standard point where an object is considered crossing the line, when using the Line Crossing event.
- **[Draw, Erase] (Draw, Erase):** Select a block on the image to draw a detection area. Click the button and drag&drop the mouse to select or deselect a block.
- **A → B, A → B, A ← B:** Select the direction of the line when using the Line Crossing event.

NOTE: Video Analytics may not operate properly according to the video analysis object and background.

NOTE: If an image is tilted over 30 degrees, the object detection may be difficult.

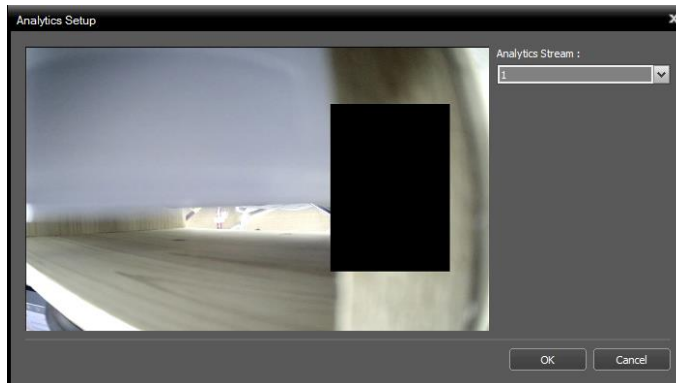
NOTE: The minimum size of the object for detection should be over 1/16 in width and height of the image (Over 0.4% of the image surface area).

NOTE: If the object covers over 90% of the set area, the event occurs.

NOTE: The recognition rate decreases in the case of a top view.

NOTE: The recognition rate may differ when the stream of the analyzed image is changed.

- Click the Camera Setup button and set up the camera options.



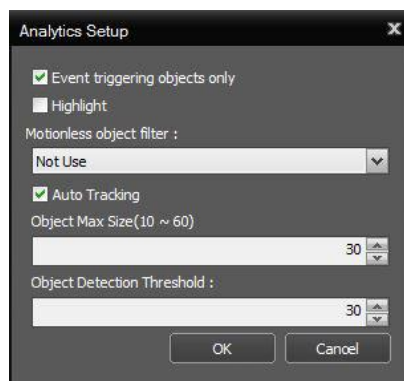
- Analytics Stream: Select a stream to use for the video analytics.
- Tilt, Pan: Enter values for tilt and pan for fisheye dewarping.

NOTE: The Analytics Stream function is supported only for devices which use IDIS protocol (IDIS protocol using devices that support multistream).

NOTE: The tilt and pan features are supported only for fisheye cameras.

NOTE: In the case of fisheye image, the dewarped video is analyzed.

- Click the Add button and set up the video analytics options.



- ☒ Event triggering objects only: Only the event acknowledged objects are displayed during monitoring.
- ☒ Highlight: Highlights the detected object during monitoring.
- Motionless object filter: Analyzes only the objects with motions and reduces misdetection by ignoring motionless background.
- ☒ Auto tracking: Automatically follows detected objects during monitoring. The Auto tracking checkbox will appear when there are cameras that support this feature.
- Object Max Size: Sets how big the auto tracking object will be displayed on the screen. The larger the value, the larger the size of the visible object.
- Object Detection Threshold: Sets the minimum probability value for object recognition such as people, cars or bikes in a video.

NOTE: When using the Motionless object filter function, there may be an overload on the system.

NOTE: Misdetected may occur if there is several changes in the background (e.g. shaking branches, sudden changes in illumination, weather changes such as snow or rain).

NOTE: It takes about 50 seconds for background learning.

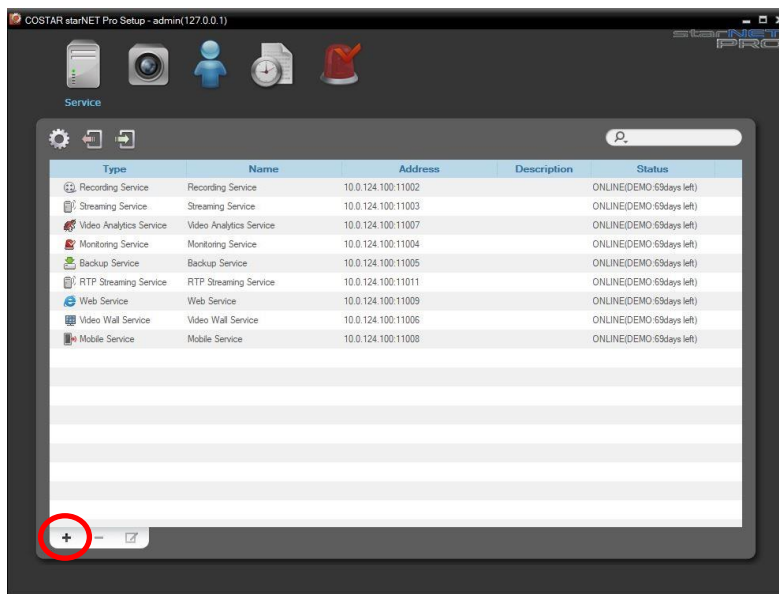
Chapter 13 — Mobile Streaming

The mobile streaming service enables using a mobile phone for sending images to save or monitor. The streaming service is necessary for the operation. Refer to Chapter 5 — Live Video Monitoring (p. 75) for details on live video monitoring.

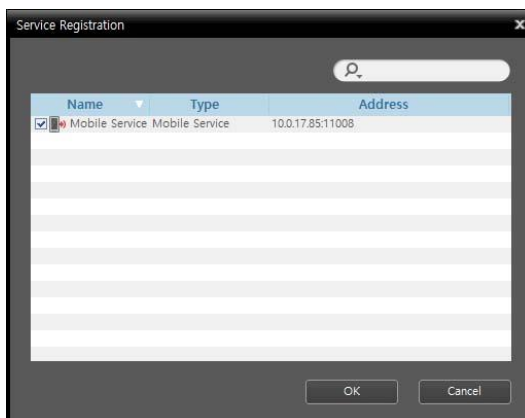
First, check the following and run the Setup program.

- Services should be running on the system. Refer to 3.1 Running Services (p. 25) for details.
- Devices should be added to a device group. Refer to Chapter 14 — Device Management (p. 142) for details.

Select the **Service** menu, and then register a mobile service following the procedures below.



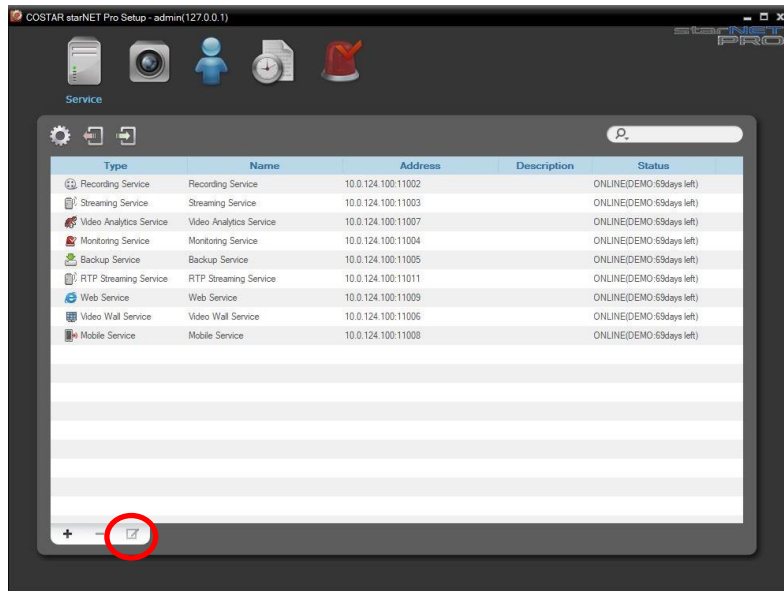
1. Click the **+** button at the bottom. The **Service Registration** window appears, and a list of available services is displayed with information about each service.



- Displays services that are currently connected to the administration service via the network.
- **Type:** Displays the service type.
- **Address:** Display the IP address and port number of each server.

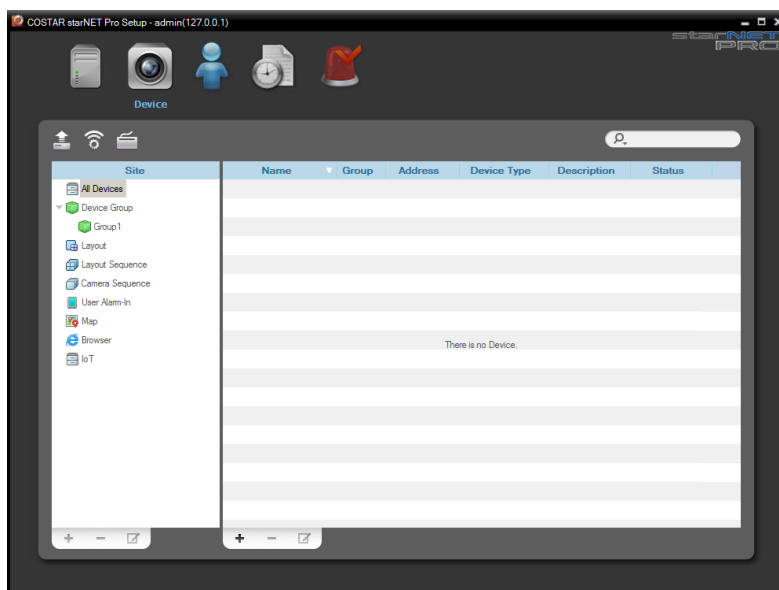
NOTE: Only the services of which the administration server information (*Service Manager* → *Option* → *Server Option*) matches the currently connected administration server are available.

2. Select the mobile service to register on the COSTAR starNET Pro system, and the selected services are displayed in the service list.



Chapter 14 — 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 **COSTAR starNET Pro** → Run the **COSTAR starNET Pro Setup** program and enter login information → Select the **Device** menu.

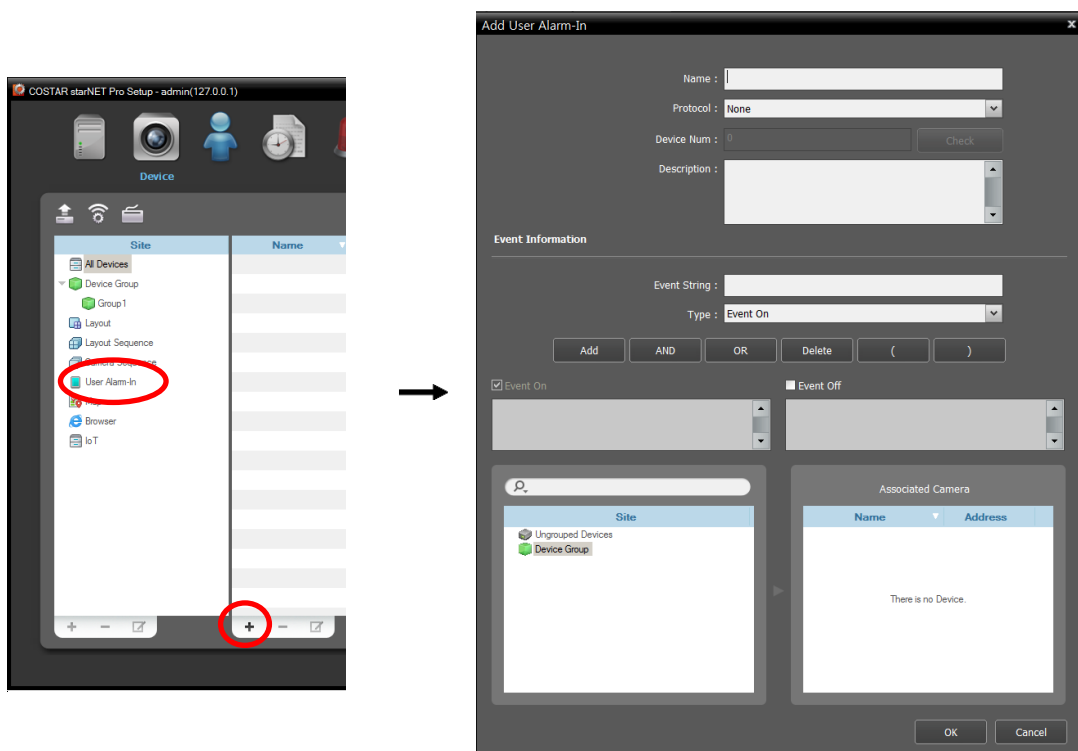


- **All Devices:** Displays devices registered in the administration service. If you delete a device from **All Devices**, it will not be available to search and play back previously recorded data even if the device is registered again (network video devices only). Refer to 14.1 Registering Devices (p. 151) 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 administration service and add the devices to a device group to perform any operation. Refer to 14.1 Registering Devices (p. 151) 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. 80) 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. 83) 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. 85) for details.
- **User Alarm-In:** Displays the registered user alarm-in event settings. When the COSTAR starNET Pro system receives a user-defined text string via TCP networking, the COSTAR starNET Pro system notifies you of the user alarm-in events or records video according to the settings of the event management schedule. You can define the text strings during the user alarm-in event setup process. Refer to 16.1 Setting up Event Management Schedule (p.178) for details about setting up notifications of user alarm-in events or video recording.

- **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. 86) for details.
- **Browser:** Displays the registered browsers. You can launch a browser on a browser screen. Refer to 5.3 Launching Browser (p. 88) for details.

User Alarm-In Event Setup

1. Set the alarm-in port number that the COSTAR starNET Pro system uses to receive text strings via TCP networking: Run the Service Manager program → Click the monitoring service → Click the Option menu → Click Service Option.
2. Click User Alarm-In in the Site panel below, and then the **+** button at the right-bottom. The Add User Alarm-In window appears.

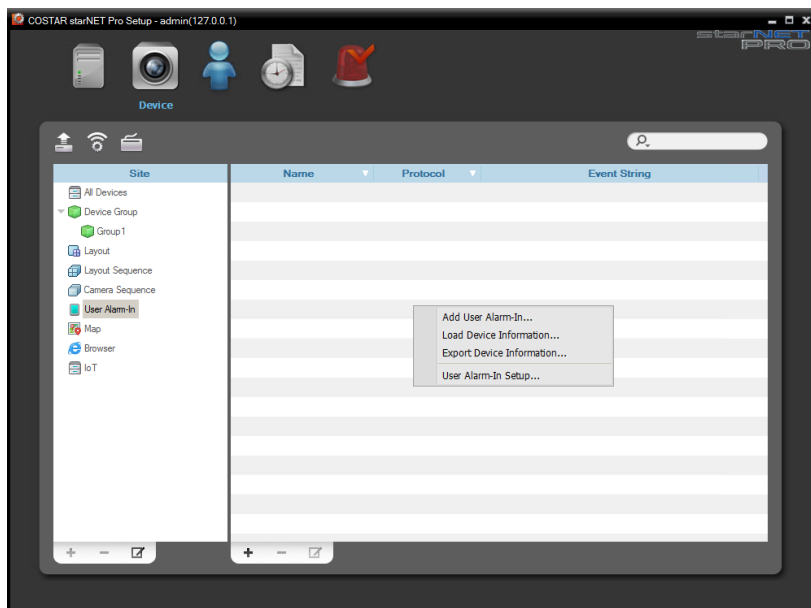


- **Name:** Enter the user alarm-in event name.
- **Protocol:** Specifies the protocol to use to send the user alarm-in event via SDK.
- **Device Num:** Enter the number for the user alarm-in identification when using the exclusive protocol.
- **Description:** Enter the user alarm-in description.


- **Event String:** Enter a text string to trigger a user alarm-in event. Clicking the Add button adds the text string. () AND OR buttons can be used to create the text string. For example, if the event string is **Door AND Open**, the COSTAR starNET Pro program considers a text string as a user alarm-in event when the text string includes both **Door** and **Open**. The COSTAR starNET Pro program does not trigger a user alarm-in event though the event string is received until the connection via TCP networking is released or received text strings exceed a certain amount (128 words in English). When the connection via TCP networking is released or received text strings exceed the certain amount, the COSTAR starNET Pro program checks text strings received by that time and triggers a user alarm-in event if the event string is included in the received text strings.
- **Type:** Select a user alarm-in event type to set up.
- ☒ **Event On**, ☒ **Event Off:** Enables releasing the user alarm-in event.
 - **Event On:** Triggers a user alarm-in event when the event string for a user alarm-in On is received.
 - **Event Off:** Releases a user alarm-in event when the event string for a user alarm-in Off is received after the user alarm-in event is detected. The user alarm-in event is not released until the event string for a user alarm-in Off is received. The COSTAR starNET Pro system triggers a user alarm-in event also when the user alarm-in event is released.
- **Name, Address:** Select cameras to associate with the user alarm-in event. You can monitor video from the associated cameras when the user alarm-in event is detected by selecting a user alarm-in event from the event list and dragging and dropping it on the Live screen.

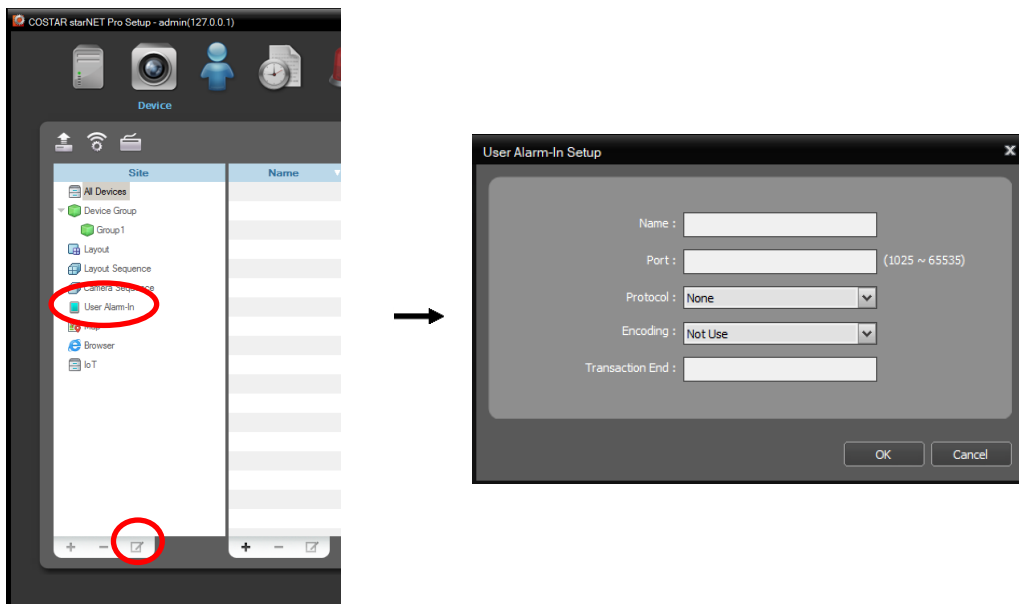
NOTE: For the DirectNET protocol, enter the device number to identify the user alarm-in.

3. In the Site panel, click **User Alarm-In**, and then right-click the list panel. Click **Device Information File** to save the user alarm-in as an XML file.



- **Load Device Information:** Add a user alarm-in from an XML file that contains information about the user alarm-in. Ask your dealer or distributor about purchasing the software and details about it.
- **Export Device Information:** Save a user alarm-in information file in .xml format. Ask your dealer or distributor for details about the .xml file.

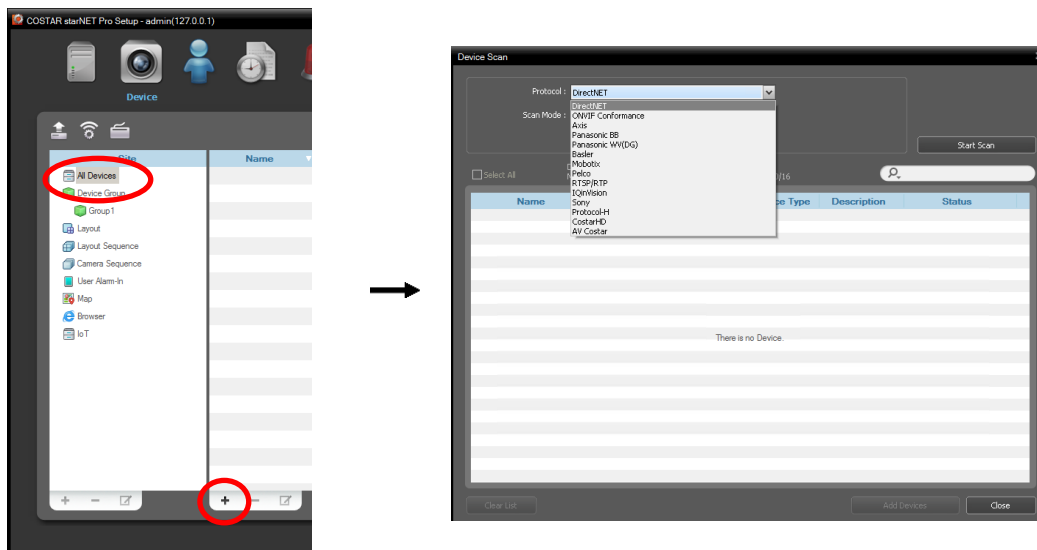
4. Click User Alarm-In in the Site panel, and then the  button at the bottom of the Site panel. The User Alarm-In Setup window appears.



- **Name:** Enter the name.
- **Port:** Enter the port number.
- **Protocol:** Select the protocol.
- **Encoding:** Set the encoding for user alarm-in.
- **Transaction End:** Enter a text string. When the transaction end text string is received, the COSTAR starNET Pro program considers that connection via TCP networking is released though the connection is not released. Then the COSTAR starNET Pro program checks text strings received by that time and triggers a user alarm-in event if the event string is included in the received text strings.

14.1 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.



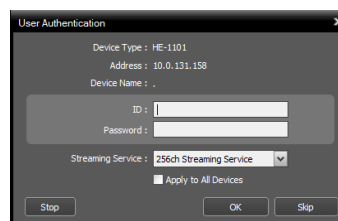
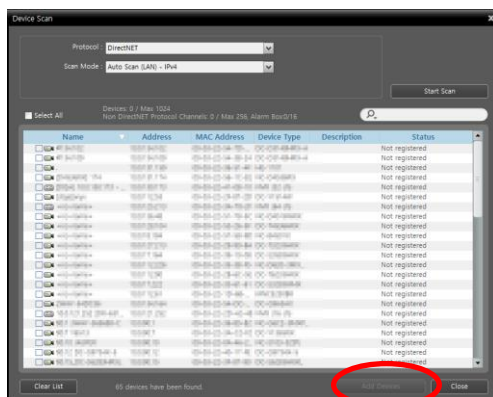
- **Protocol:** Select the protocol or manufacturer of the device to scan. Event related functions may not be supported depending on the protocol that the device uses and the device model (supported protocols: DirectNET protocol, some versions of the Axis, Panasonic BB, Panasonic WV (DG), Baster, Mobotix, Pelco, RTSP/STP, Protocol-H, IQinVision, Sony, and ONVIF™ Conformance protocols). Some other functions may not be supported depending on the settings of the device. Ask your dealer or distributor for details.
- **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 administration server, the COSTAR starNET Pro 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 (not supported for some models of DVRs). 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.
 - **FEN:** Allows you to enter the device FEN name registered on a FEN server if the device uses the FEN function. Ensure the FEN server information on which the device is registered is correct (**Service menu** → (System Setup) button). If the FEN 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.

- **Device Information File:** Allows you to import an .xml file which has device connection information and lists the devices. Ask your dealer or distributor for details about the .xml file.
- **URI:** Allows you to enter URI (Uniform Resource Identifier). (supported only for the RTSP/RTP protocol)
- **Mobile Devices:** Allows you to select a user to access via mobile devices. Only users selected by this function can access COSTAR starNET Pro through mobile devices.
- ☒ : 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 COSTAR starNET Pro 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 DirectNET 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's user manual about enabling the ONVIF™ Conformance protocol in the device, as procedures may differ for each model.
- If a device uses the DirectNET protocol and is set up in DirectIP™ mode, then you cannot add the device. In this case, clicking the device allows you to change its mode and reboot the device. After rescanning, you can add the device.
- If the device uses the Protocol-H protocol and is registered in the *Auto Scan (LAN)* mode, *Auto Scan (LAN)* mode changes to *IP Address* mode automatically after the registration.
- If a device is higher than 2304x1296 and the COSTAR starNET Pro service is installed in 32-bit mode, then you cannot add the device. In this case, COSTAR starNET Pro system should be installed in 64-bit mode.

2. Click the Add Devices button at the bottom.



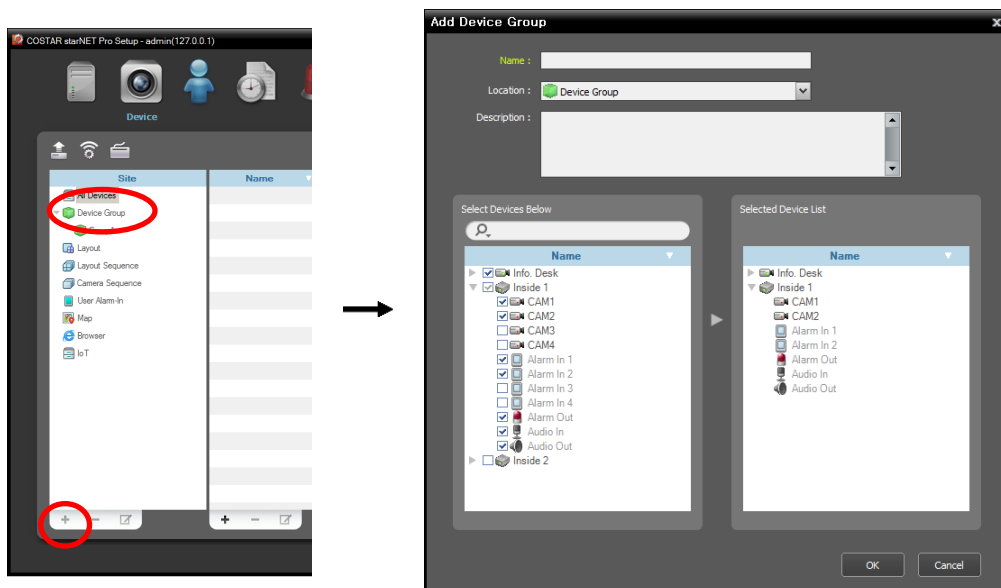
- **Name, Address, Device Type:** Displays the name, IP address and type of the selected device. The name will be updated automatically depending on the settings of the device.
- **ID, Password:** Enter the user ID and password which you set in the device in order to connect to that device remotely. 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.

- **Streaming Service:** Select whether or not to use the streaming service for monitoring video from the device. If you use the streaming service, the COSTAR starNET Pro program transmits video from the device to the client system through the streaming server, and it allows multiple users to monitor video simultaneously. The number of channels that can be streamed equals the number of channels that can be recorded unless streaming WIBU-Keys have been added. When you register more than one streaming service by buying additional WIBU-Keys, the COSTAR starNET Pro program chooses any one of the streaming services depending on the system load of the streaming server. Refer to **Chapter 11 — Streaming** (p. 133) 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 DirectNET protocol, all four cameras are automatically registered even if some of the four cameras are disabled.

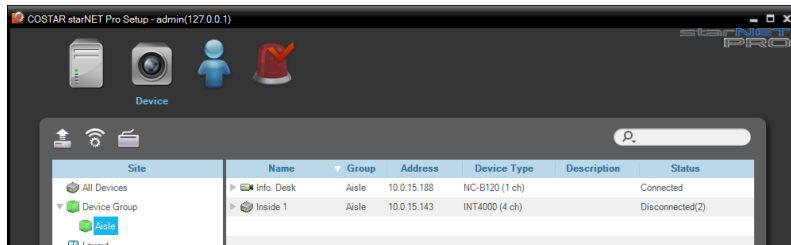
3. Click **Device Group** in the **Site** panel, and then the **+** button at the bottom of the **Site** panel. The **Add Device Group** window appears.




- **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.

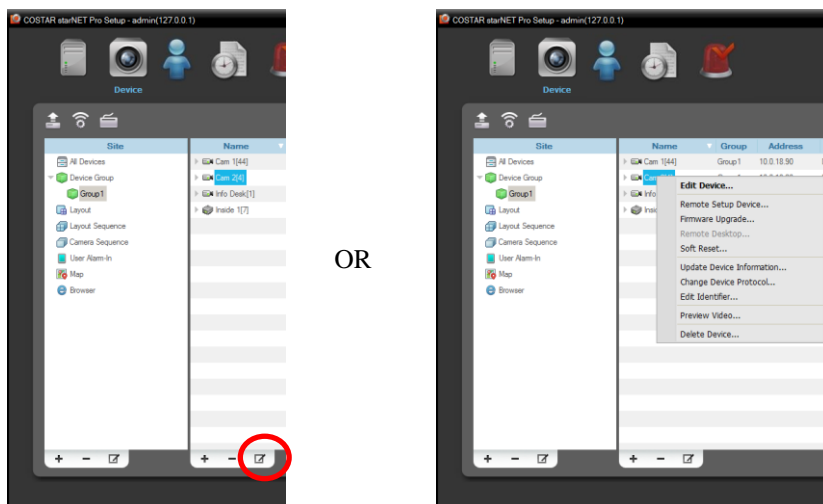
4. Check that the device was added to the device group correctly. Click **Device Group** in the **Site** panel and then the arrow button (▶) beside **Device Group**. Clicking the registered group displays the list of devices added to the device group and connection status in the **Site List** panel.
- Check video analysis (🔍) from the device group in the case of a device with a video analysis device.



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.

14.2 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.

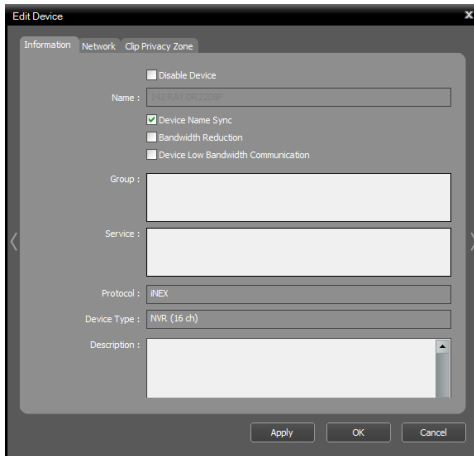


- **Edit Device:** Allows you to change information for connection to the device. Refer to **Editing Device Information** (p. 156) for details.
- **Remote Setup Device:** Allows you to change the device's settings remotely. Refer to **Changing Device's Setting Remotely** (p. 162) for details.
- **Firmware Upgrade:** Allows you to upgrade the device's software remotely (supported only for devices which use the DirectNET protocol). Refer to **Multiple Upgrading Device's Software** (p. 163) for details.
- **Remote Desktop:** Allows you to connect to the device using the VNC (Virtual Network Computing) function. For this feature to work, the VNC function must be enabled in the device and a port number and password for the VNC remote connection must be registered during the device registration at COSTAR starNET Pro program. Refer to **Editing Device Information, Remote Desktop** (p. 156) for details about registering the port number and password for the VNC remote connection at COSTAR starNET Pro program. This function may not be supported, depending on the specifications and version of the device.
- **Soft Reset:** Allows you to remotely reset the device (only supported for the device which use IDIS protocol).
- **Update Device Information:** Allows you to update the registered device's information. If the input/output devices connected to the registered device are not displayed in the list, it is recommended that you update the registered device's information. Also, if the Event tab is not displayed during the **Edit Device** setting, it is recommended that you update the registered device's information (only for devices which do not use the DirectNET protocol and for which event related functions are supported).
- **Edit Identifier:** Allows you to edit device's unique identifier. The identifier will be displayed beside the device in the Site List of the Video Wall Agent program. The identifier will be assigned automatically when the network keyboard or Video Wall service is registered on the COSTAR starNET Pro program, and you can change the identifier. The identifier is used to distinguish the device from others when controlling the Video Wall Agent system with a network keyboard.
- **Preview Video:** Allows you to preview the device's video.
- **Remove Device:** Deletes the device from the administration service.

Editing Device Information

Select Edit Device from the device menu.

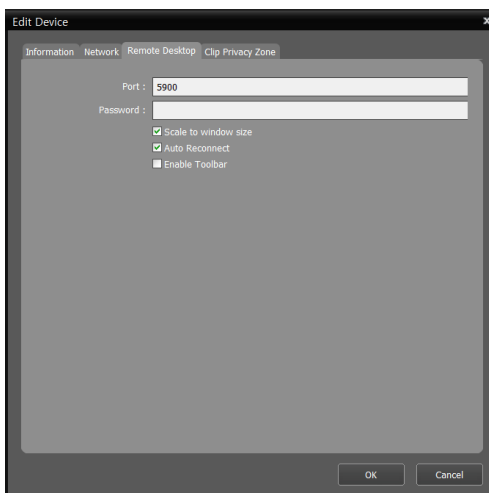
Information



This allows you to change information of the device.

- ☒ **Disable Device:** The COSTAR starNET Pro program no longer considers the device registered in the administration service.
- **Name:** Edit the device name. You can use the same name for more than one device. By selecting the Disable Device option, the COSTAR starNET Pro program no longer considers the device registered in the administration service. You can type up to 31 em size Japanese characters.
- ☒ **Device Name Sync:** Automatically applies the name set in the device to the COSTAR starNET Pro program (supported only for devices which use the DirectNET protocol).
- ☒ **Bandwidth Reduction:** Reduces device's network bandwidth by using a streaming service (not supported for some models of the network video transmitters which use the DirectNET protocol). When this option is enabled, the device should be registered on the streaming service.
- ☒ **Device Low bandwidth Communication:** The client operates according to the low bandwidth environment.
- **Group, Service:** Displays the list of device groups and services that the device is registered on.
- **Protocol:** Displays the protocol that the device uses.
- **Device Type:** Displays the device type.
- **Event Handling:** Displays how the camera handles events (only for devices that use the ONVIF™ Conformance protocol).

Remote Desktop



This allows you to register a port number and password for the VNC (Virtual Network Computing) remote connection. For this feature to work, the VNC function must be enabled in the device. This function may not be supported, depending on the specifications and version of the device.

- **Port, Password:** Enter a port number and password set in the device for VNC remote connection.
- ☒ **Scale to window size:** Scales the VNC Viewer screen to fit window size.
- ☒ **Auto Reconnect:** Reconnects automatically when the VNC remote connection is released.

Network

Type	Port
Remote Port	8016

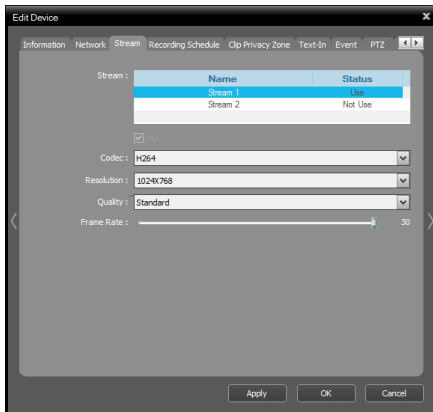
This allows you to change information for connection to the device. The device's authentication procedure, which is entering the user ID and password of the device, is required.

- **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. If the device uses the Protocol-H protocol and is registered in the Auto Scan (LAN) mode, Auto Scan (LAN) mode changes to IP Address mode automatically after the registration.
 - **IP Address:** Allows you to enter the device's IP address when you edit the device's address.
 - **FEN:** If the device uses the FEN function, this allows you to enter the device FEN name registered on the FEN server when editing the device's address. The FEN name must match the one set during the FEN 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), and two-way audio communication (Audio).
- **ID, Password, Connection Test:** The device's authentication procedure is required to change the information above. Enter the user ID and password of the device and click the **Connection Test** button. When the connection test succeeds, you can click the **OK** button to apply the changes.
- **Live Protocol, Record Protocols:** Select the protocol for monitoring (supported only for devices which use some versions of the Axis or ONVIF™ Conformance protocols).
- **Live Profiles, Recording Profiles:** Select a preset monitoring or recording profile (supported only for devices that use some versions of the ONVIF™ Conformance protocols). Refer to 14.3 Remote Setup of ONVIF™ Conformance Protocol Devices, Profiles (p. 164) for details.

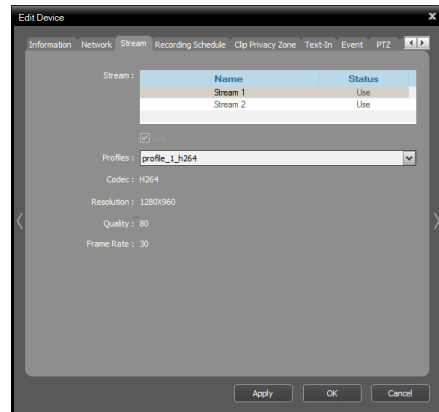
Stream

This allows you to change the device's stream setting. This is supported only for network cameras which use some versions of the Axis, Panasonic WV (DG), or ONVIF™ Conformance protocol and may not be supported, depending on the specifications and version of the device.

NOTE: Multistream function works only for the device registered in the streaming service.



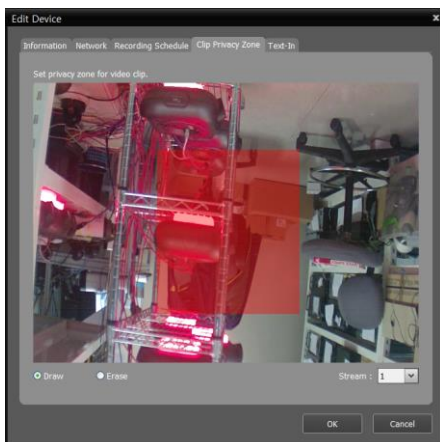
Axis/Panasonic WV (DG) protocol



ONVIF™ Conformance protocol

- ☒ Use: Enables the stream. When two streams are enabled, multistream is supported.
- Codec, Resolution, Quality, Frame Rate: Select the compression, resolution, quality, and frame rate of image for streaming (not supported for the devices which use ONVIF™ Conformance protocol).
- Profiles: Select a preset monitoring or recording profile (supported only for devices that use some versions of the ONVIF™ Conformance protocols). Refer to 14.3 Remote Setup of ONVIF™ Conformance Protocol Devices, Profiles (p. 169) for details.
- Record Stream set as Default: Select a stream to use for recording.


Clip Privacy Zone





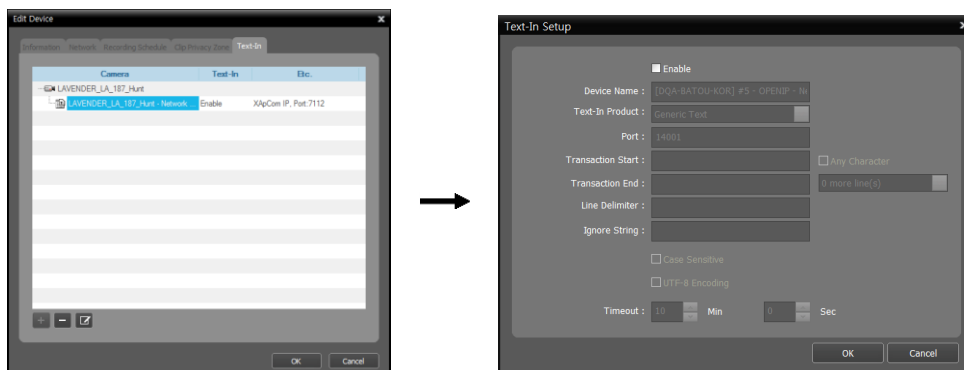
This allows you to restrict playback of specific areas to protect privacy (In case of DVR, tab is created only when this function is supported). The privacy zone is blacked out during playback of the video, which is saved as a self-player file.




- Include/Exclude: Allows you to set up or release the clip privacy zone. To Set up the zone, click and drag the mouse on the screen until the box covers the appropriate area, and then release the mouse button.

Text-In Setup

This supports the text-in function for the device by connecting a text-in product to the COSTAR starNET Pro system via TCP networking (not supported for devices which support text-in function and for DVRs). Double-clicking a camera or selecting a camera from the list and clicking the  button enables the text-in function for that camera. When the text-in function is enabled, the COSTAR starNET Pro system considers text input as a text-in event according to the settings listed below.

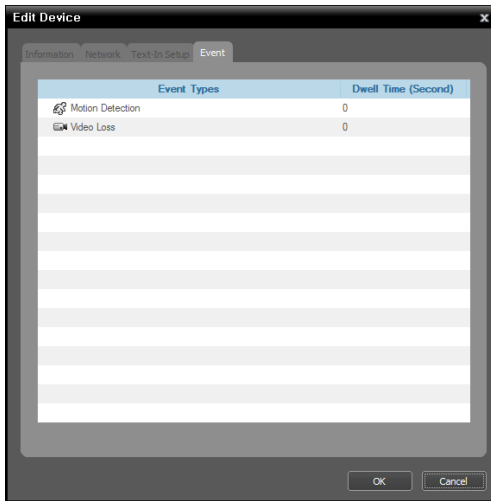
Clicking the  button allows you to register the text-in information. Clicking the  button removes the text-in information. If you remove the text-in information, then the recorded video of the text-in event no longer appears in the search results.



-  **Enable:** Enables the text-in function.
- **Device Name:** Enter the text-in device name.
- **Text-In Product:** Select the text-in product from the list.
- **Port:** Enter the port number of the text-in product.
- **Transaction Start:** Enter the transaction start text string. The COSTAR starNET Pro system considers that a transaction starts when the start text string is entered. If **Any Character** is enabled, you will not be able to enter a text string, and the COSTAR starNET Pro system considers that a transaction starts when any text string is entered.
- **Transaction End:** Enter the transaction end text string. The COSTAR starNET Pro system considers that a transaction ends when the end text string is entered. Select the number of additional text lines to be displayed after the end of the transaction from the drop-down list.
- **Line Delimiter:** Enter the character(s) that the text-in product uses to indicate the end of a line. Special characters can be created using ^ and a capital letter; e.g., ^J for NL (New Line), ^M for CR (Carriage Return). Refer to the text-in product manufacturer's user manual for Line Delimiter character(s).
- **Ignore String:** Enter any text strings to be ignored. Refer to the text-in product manufacturer's user manual for text strings that the text-in product sends during normal transactions so that those text strings will not be considered as text-in.
-  **Case Sensitive:** Check the box if text strings are case sensitive. Refer to the text-in product manufacturer's user manual to determine if the text strings are case sensitive. If the text-in product distinguishes between upper and lower case letters, make certain this is enabled.
-  **UTF-8 Encoding:** Check the box to apply UTF-8 encoding to the received strings. When the text-in data is transmitted in UTF-8 encoding, it must be re-encoded at the receiving end for the string to be properly presented. Refer to the text-in device manual about the text-in string encoding.
- **Timeout:** Set the length of time to wait for a new text string. The COSTAR starNET Pro system will consider a transaction complete if no new text is entered during the time-out period after the last text input even though the transaction end text string is not entered.

NOTE: The required settings may differ depending on the text-in product. Refer to the text-in product manufacturer's user manual for details about settings.

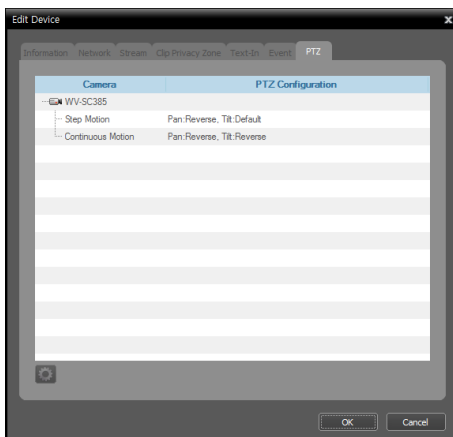
Event




This is supported only for devices which do not use the DirectNET protocol and which event related functions are supported for.

- **Dwell Time (Seconds):** If the device does not notify the COSTAR starNET Pro system that the event has been released, the COSTAR starNET Pro system considers an event complete and releases the event detection when the established dwell time has expired since the event detection is notified from the device. For example, if this dwell time is set to 0 the COSTAR starNET Pro system considers that an event is complete as soon as the event is detected. If this dwell time is set to **disable** the COSTAR starNET Pro system considers an event is not complete until the COSTAR starNET Pro system is notified from the device that the event has been released. In this case, if event recording is set up, the COSTAR starNET Pro system keeps recording video until it is notified of event release from the device.

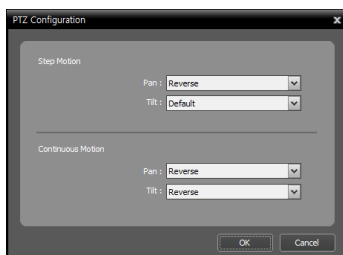
PTZ

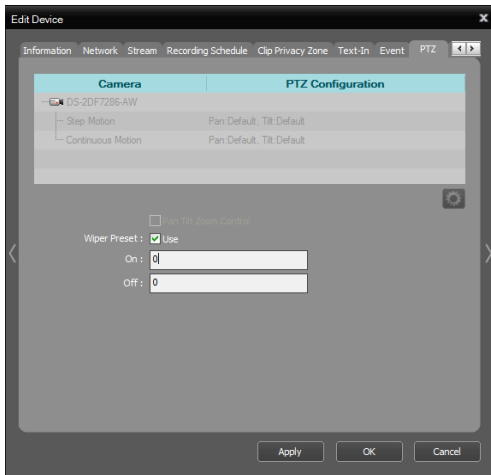


This is supported only for devices which do not use the DirectNET protocol and which PTZ functions are supported for.

Selecting a camera from the list and clicking the  button allows you to control the direction of the selected camera.

- **Step Motion:** The PTZ camera moves each time you click the mouse.
- **Continuous Motion:** The PTZ camera moves continually if you click and hold the mouse for 3 seconds.
- **Default:** The PTZ camera moves in the direction clicked in the Client program.
- **Reverse:** The PTZ camera moves in the opposite way of the direction clicked in the Client program.



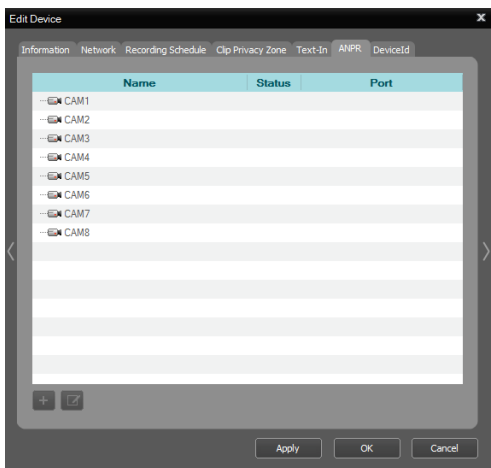


Select Wiper Preset under PTZ preset, for cameras with a wiper function.


Configure the preset value within 0~999.

- On/Off: Starts/stops the wiper function using the preset.

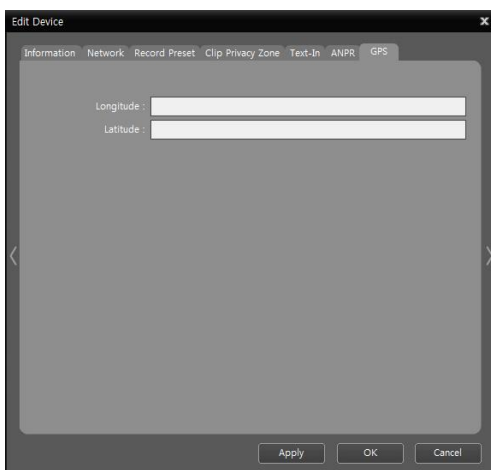
ANPR



This is supported only for devices which are connected to ANPR.

Select a camera from the list and click  button to add or edit the ANPR connection.

GPS




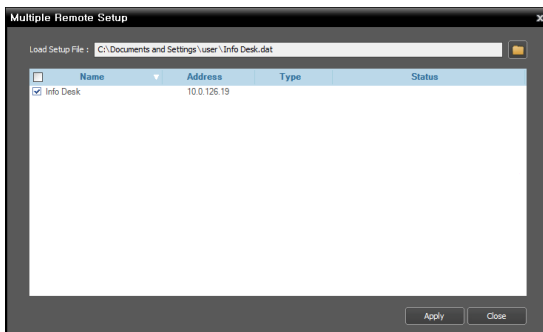
This function is used for the map auto placement.


Enter or edit GPS information (longitude, latitude) of a device.

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 COSTAR starNET Pro program might be different depending on the protocol in use. Refer to the device's user manual for details about the settings. Refer to 14.3 Remote Setup of ONVIF™ Conformance Protocol Devices (p. 167) in this document for details about remote setup of a device which uses the ONVIF™ Conformance protocol.

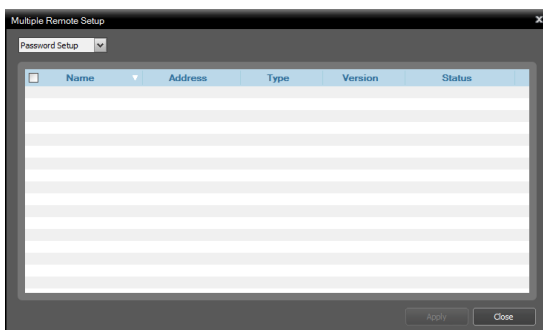
You can change settings of several devices at the same time using a setup file. Clicking the  (Multiple Remote Setup) button above the Site panel displays the following screen.



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.

Multiple Password Setup


You can change passwords of several devices at the same time. Clicking the  (Multiple Remote Setup) button above the Site panel displays the following screen (supported only for devices which support the password reissue function).



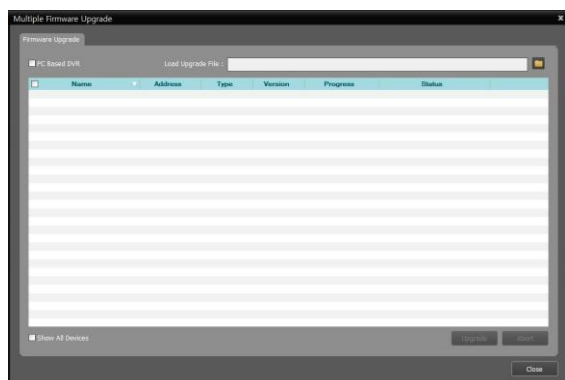
Multiple Remote Setup window suggests devices which are available for password setup. Select devices and click the **Apply** button at the bottom to apply the password change. (This function may not be supported depending on which model you use.)



Multiple 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 DirectNET 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 DirectNET protocol).

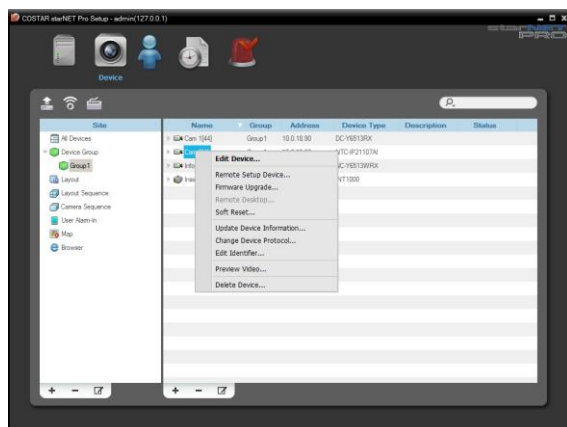
Firmware Upgrade



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.


Soft Reset

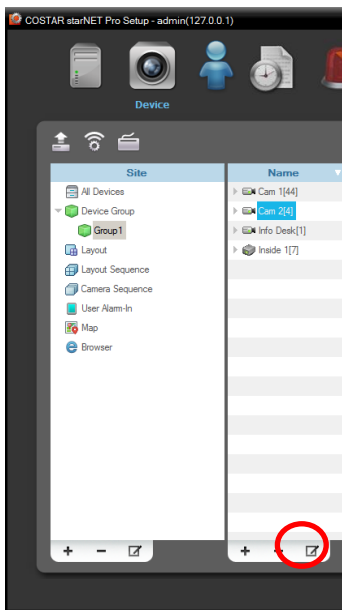
Select **Soft Reset** from the Device menu to remotely reset the device (only supported for the device which use IDIS protocol).



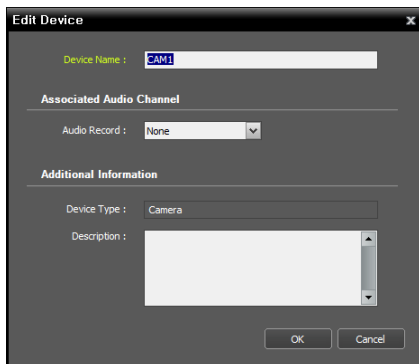
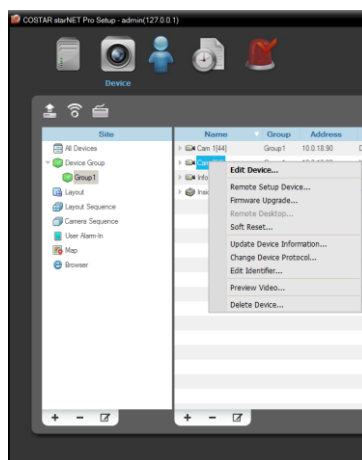
Select a device to soft reset and right click on the mouse. Click **Soft Reset** from the menu to reset the device.

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



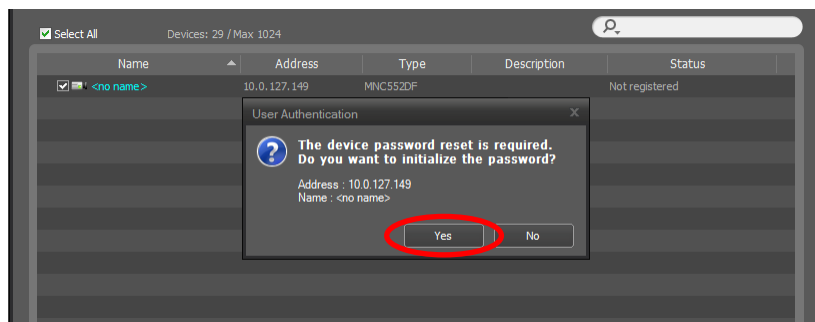
- **Device Name:** Edit the name of the input/output device. You can use the same name for more than one input/output device. The name will be updated automatically when the name of the device to which the input/output device is connected is updated.
- **Associated Audio Channel:** Select the audio channel 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.

Device Password Reissue

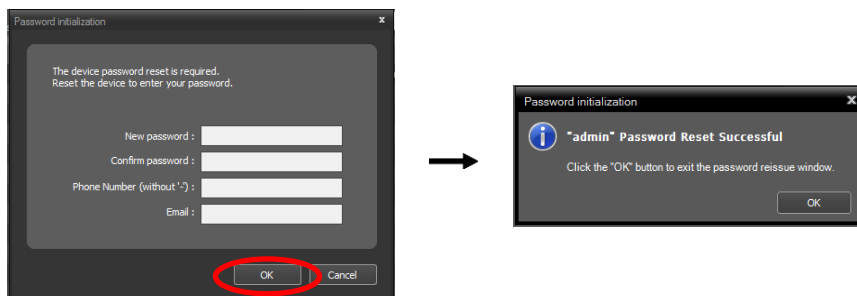
Reissue the remote device password. This function is only for the products that support the device password reissue function.

Device Password Initialization

1. When registering a device, the User Authentication window pops up to ask whether to reset the password in the case of the devices that need the password initialization. For the device that needs the password initialization, device registration is enabled after the initialization. Click **Yes** to display the password initialization window.



2. Enter the information for the initialization and click OK to reset the device password.

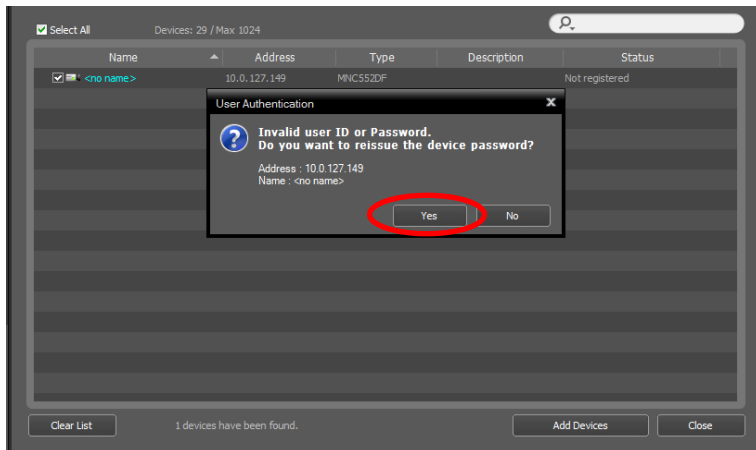


- **New Password/Confirm Password:** Enter the new password.
- **Phone Number:** Enter the phone number that allows SMS for receiving the One Time Password(OTP) when resetting the password.
- **Email:** Enter the email address for receiving the One Time Password(OTP) when resetting the password.

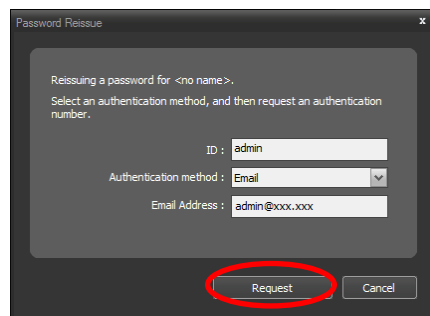
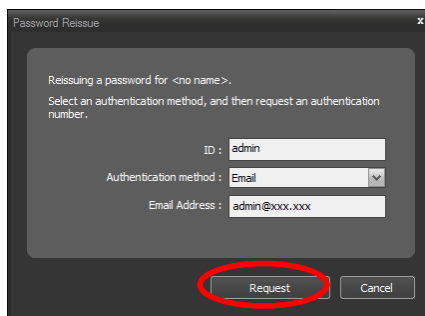
Device Password Reissue

The password reissuance works only when the System Setup – FEN setup is configured and connected to the FEN service. Ask your dealer or retailer for more information.

1. If the user authentication fails (password error) during the device registration, the window pops up to check whether to reissue the password or not.

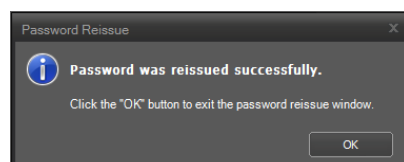
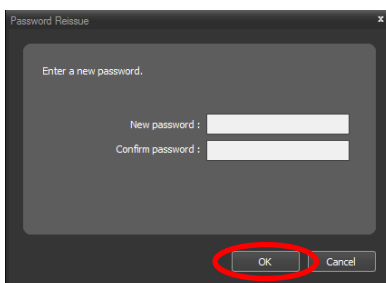


2. Click Request to reissue the password.



- ID: Enter the user ID that requests the password reissuance.
- Authentication Method: Select an authentication method between the email address/phone number.
- Email Address/Phone Number: Enter the email address or phone number that allows SMS for receiving the One Time Password(OTP) when resetting the password.

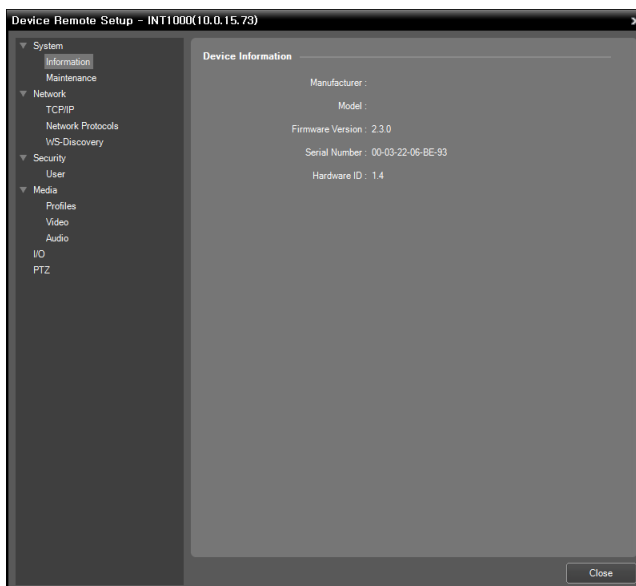
3. Enter the new password and click OK.



- New Password/Confirm Password: Enter the new password.

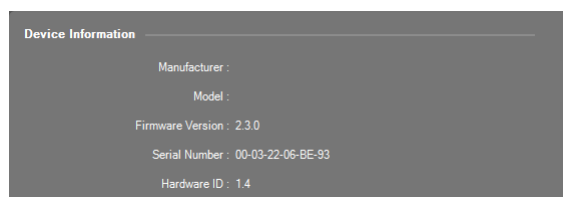
14.3 Remote Setup of ONVIF™ Conformance Protocol Devices

If the device uses the ONVIF™ Conformance protocol, the COSTAR starNET Pro program displays live video or records video with the settings set during the device remote setup in the COSTAR starNET Pro 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.



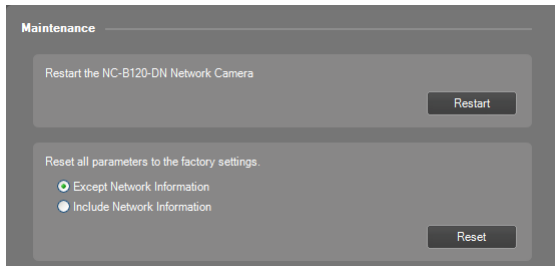
Clicking the **Apply** button after changing the settings applies the changes.

Information



Displays the device information.

Maintenance

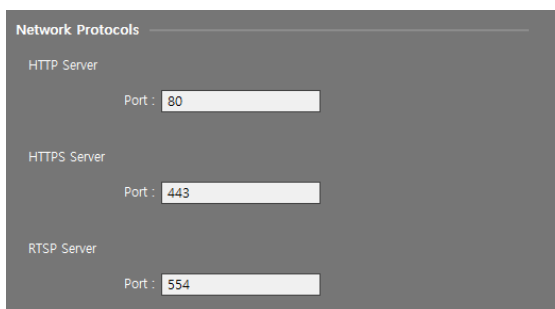


- **Restart:** Clicking the button restarts the system. The COSTAR starNET Pro remote setup is closed when the system restarts.
- **Reset:** Returns all the settings of the system to the original factory settings
 - **Except Network Information:** Returns all the settings except network settings to the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

TCP/IP

View TCP/IP setting information. Modification is not possible, but the setting is available in the setup program provided by the camera manufacturer.

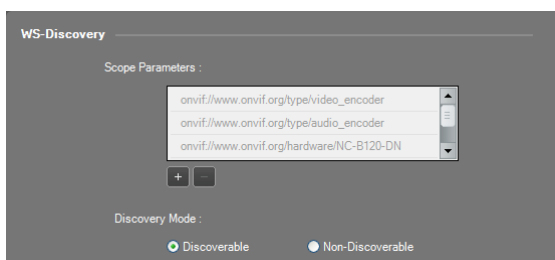
Network Protocols



- **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).

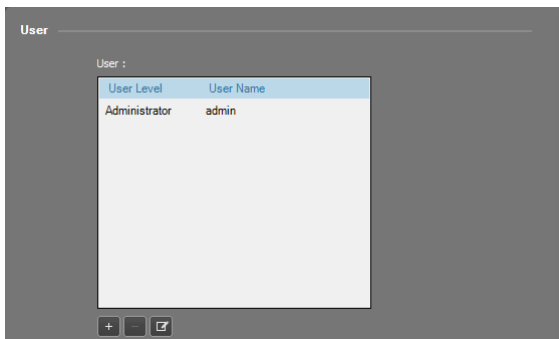
NOTE: HTTPS server port setup is not available.

WS-Discovery



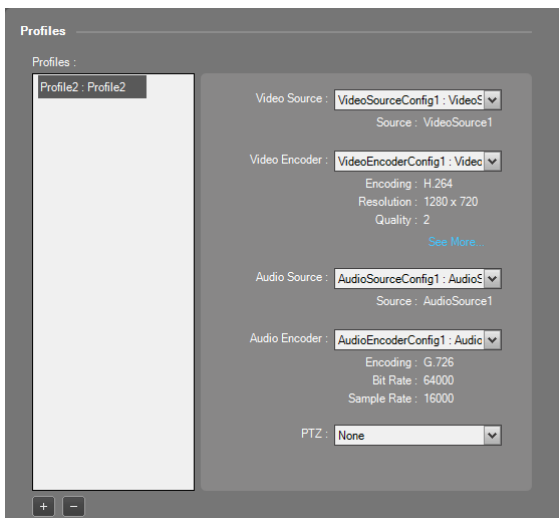
- **Scope Parameters:** Click the **+** button and add the scope parameters of WS-Discovery (Web Services Discovery) protocol if necessary.
- **Discovery Mode:** Sets whether or not to permit discovery of the device. When **Non-Discoverable** is selected, the Auto Scan function is not supported for the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

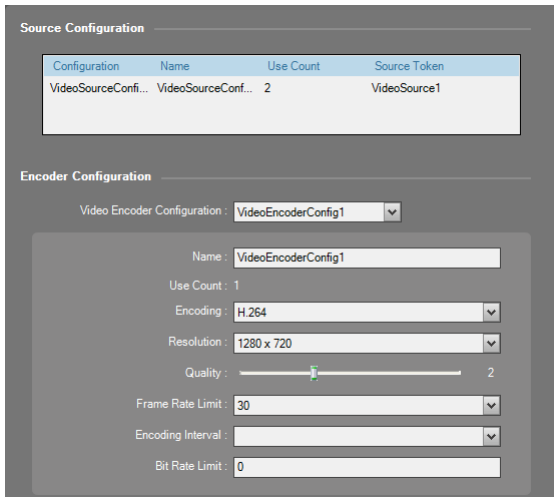


Set up the profiles using the following procedures.

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 COSTAR starNET Pro 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. 165) 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. 165) 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

Configuration	Name	Use Count	Source Token
VideoSourceConf1	VideoSourceConf1	2	VideoSource1

Encoder Configuration

Video Encoder Configuration: VideoEncoderConfig1

Name: VideoEncoderConfig1

Use Count: 1

Encoding: H.264

Resolution: 1280 x 720

Quality: 2

Frame Rate Limit: 30

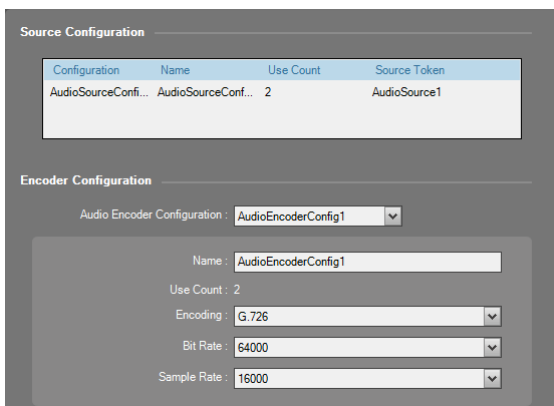
Encoding Interval:

Bit Rate Limit: 0

- **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. There might be restrictions on the frame rate depending on the device model when video is recorded 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

Configuration	Name	Use Count	Source Token
AudioSourceConf1	AudioSourceConf1	2	AudioSource1

Encoder Configuration

Audio Encoder Configuration: AudioEncoderConfig1

Name: AudioEncoderConfig1

Use Count: 2

Encoding: G.726

Bit Rate: 64000

Sample Rate: 16000

- **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	Delay Time	Idle State	Action
Bistable	0	Open	Active InActive

- **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

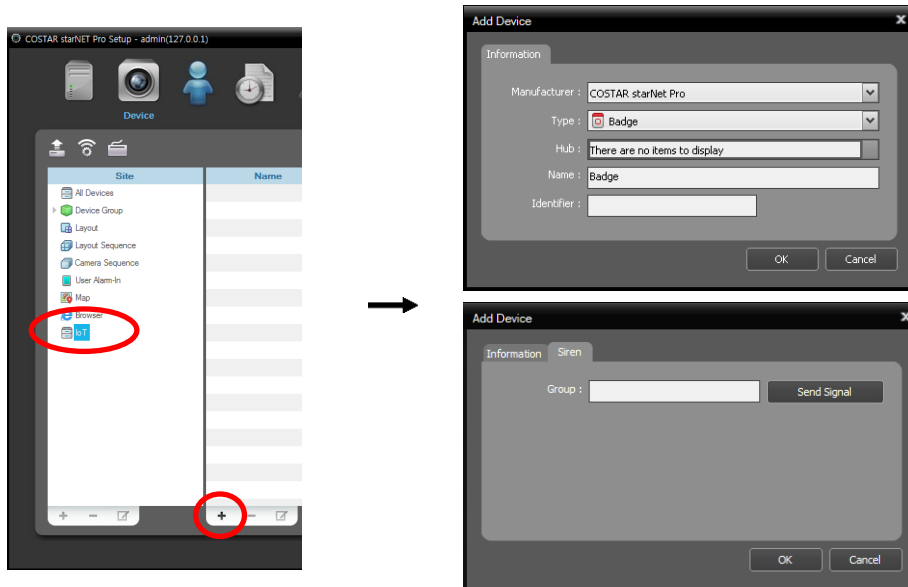
Zoom Speed: ZoomGenericSpeedSpace X: 1

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.

14.4 Registering IoT Devices

1. Click IoT in the Site panel, and then the **+** button at the bottom of the site list panel. The Register Device window appears.

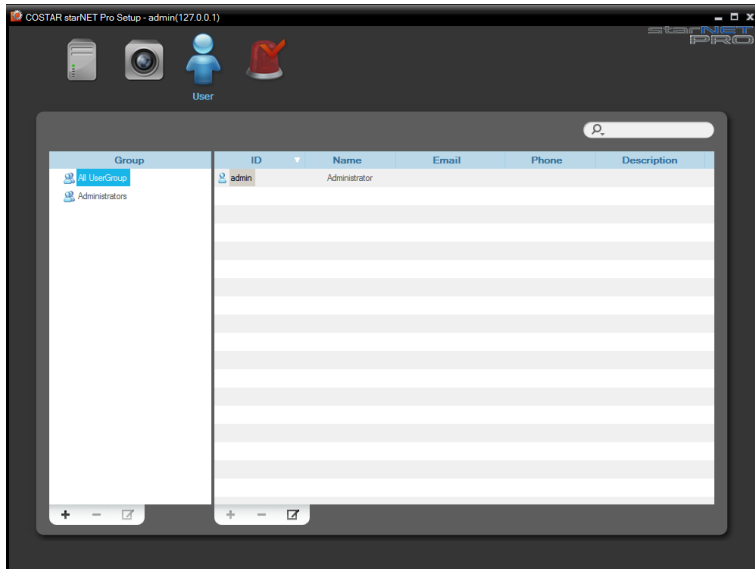


- **Type:** Select a type of device to add.
- **Name:** Enter the name of the device.
- **Identifier:** Enter the identifier of the device.
- **Group:** In the case of selecting Siren, enter the group to add the device.
- **Pairing:** In the case of selecting Siren, enter the identifier of the device via Pairing.
 - Click the **Pairing** button and press the button on the back of the siren five times in a row to automatically enter the identifier.
- **Send Signal:** Sends a signal to add a group to the siren.
 - Press the button on the back of the siren for 3 seconds in order to switch to registration mode before sending a signal. The siren makes the beep once when registered properly, and twice when it has been already registered. After registration, press the button the back of the siren two times to exit the registration mode.

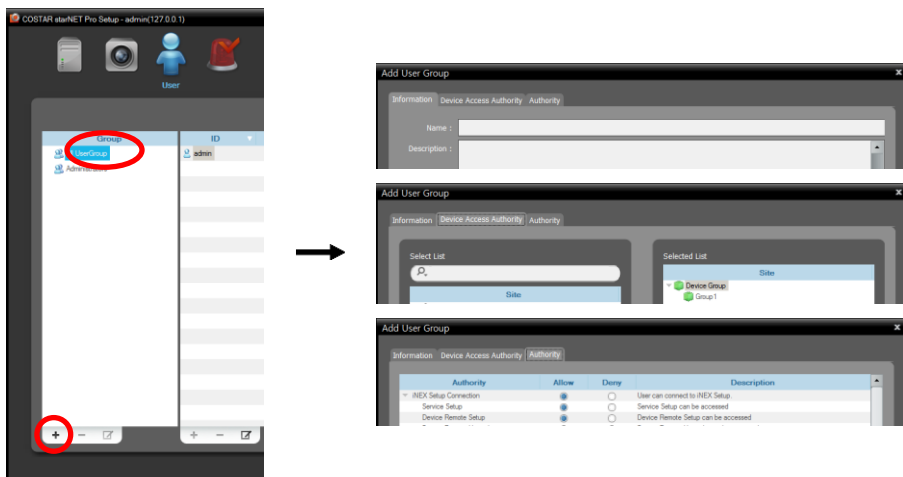
NOTE: Signal receivers should be connected to the server with monitoring service (Monitoring failover operation requires a connection to the server where the monitoring failover service is installed).

Chapter 15 — User Management

You can assign every user different authority levels for each function of the COSTAR starNET Pro program. The Administrators group has authority for all functions, and the authority settings are not editable. Go to the Start Menu → Click COSTAR starNET Pro → Run the COSTAR starNET Pro Setup program and enter login information → Select the User menu.



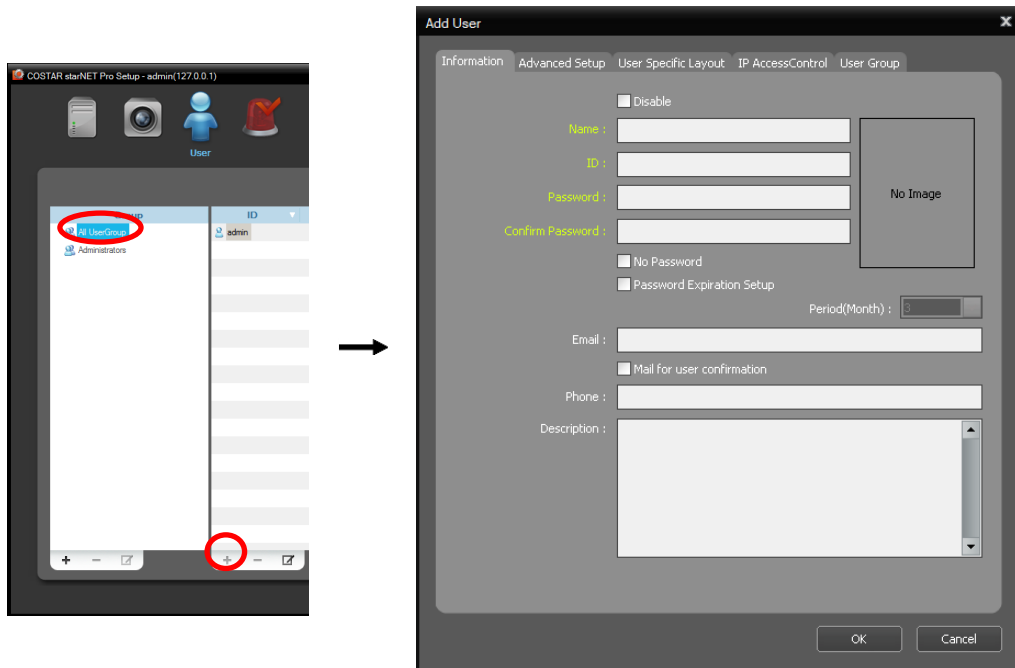
1. Click the **+** button at the bottom of the user group list. The Add User Group window appears.



- Information tab: Enters the user group name.
- Device Access Authority tab: Grants or limits authority for the access to each device.
- Authority tab: Grants or limits authority for each function.

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.



Information

- ☒ **Disable:** The COSTAR starNET Pro program no longer considers the user registered in the administration service.
- **Name:** Enter the user name.
- **User Image:** Double click No Image to add a user's image.
- **ID, Password, Confirm:** Enter a unique user ID and password (8 to 16 characters without spaces) for access to the COSTAR starNET Pro program.
- ☒ **No Password:** Allows you to log in without a password when running the COSTAR starNET Pro 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.
- **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 18 — Event Management (p. 169) for details about notifying event detection via E-mail.
- ☒ **Mail for user confirmation:** Send the confirmation mail to the email address preset by the user.
- **Phone, Description:** Enter the telephone number and description of the user if you want. Only numbers and "-" are allowed when entering a telephone number.

Advanced Setup

Monitoring Group : ▼ User Group
Administrators
User

Time Allowed : <Always Allowed> ▼

☐ From 2022-06-20 16:44:01

☐ To 2022-06-20 16:44:01

PTZ Control Priority 100000

Edit

- **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 16.2 Managing Events, Event Acknowledgement (p. 194) for details about the event forwarding.
- **Time Allowed:** Allows you to limit the login time of the user to the COSTAR starNET Pro program.
 - **Always Allowed:** Does not limit the login time.
 - **Time Coverage Setup:** Allows you to add, modify or delete a time Preset. An added Preset will be displayed in the list and selecting the Preset applies the Preset setting. The user will be allowed to log in the COSTAR starNET Pro program only during the period set in the Preset.
 - **Set Manually:** The user will be allowed to log in the COSTAR starNET Pro program only during the period you set.

- **PTZ Control Priority:** Sets the user's PTZ Control Priority. The lower the number, the higher the priority.

User Specific Layout

Information Advanced Setup **User Specific Layout** IP AccessControl User Group

Live 1: Not Use ▼

Live 2: Not Use ▼

Live 3: Not Use ▼

Live 4: Not Use ▼

OK Cancel

- **Live:** Select a layout displayed on the live tab when a user logs in to the COSTAR starNET Pro client.

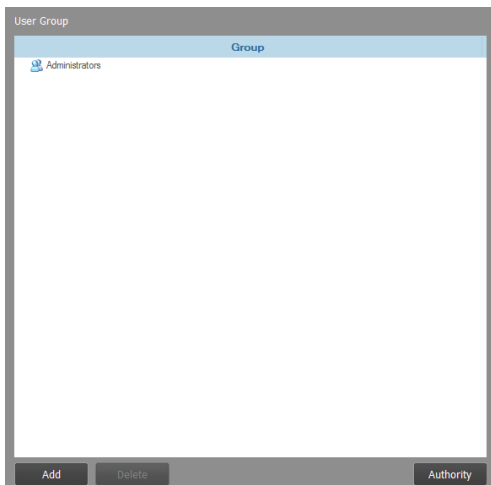
IP AccessControl



The IP AccessControl interface features a top section with a dropdown menu set to 'Allow' and two IP address input fields, both containing '0 . 0 . 0 . 0'. Below this is a table with a header 'IP Range' and a single row with an 'Allow' status. To the right of the table are buttons for 'Add', 'Delete', 'Up', and 'Down'. At the bottom, there is a 'MAC Address' input field with six segments, each containing a dot. Below this is another table with a header 'MAC Address' and a single row with an 'Allow' status. To the right of this table are 'Add' and 'Delete' buttons.

- Grants or limits access from users using the IP addresses within a certain range.
- MAC Address Access Control: Grants access to a specific MAC address. If no MAC address is registered, access to any address is granted.

User Group

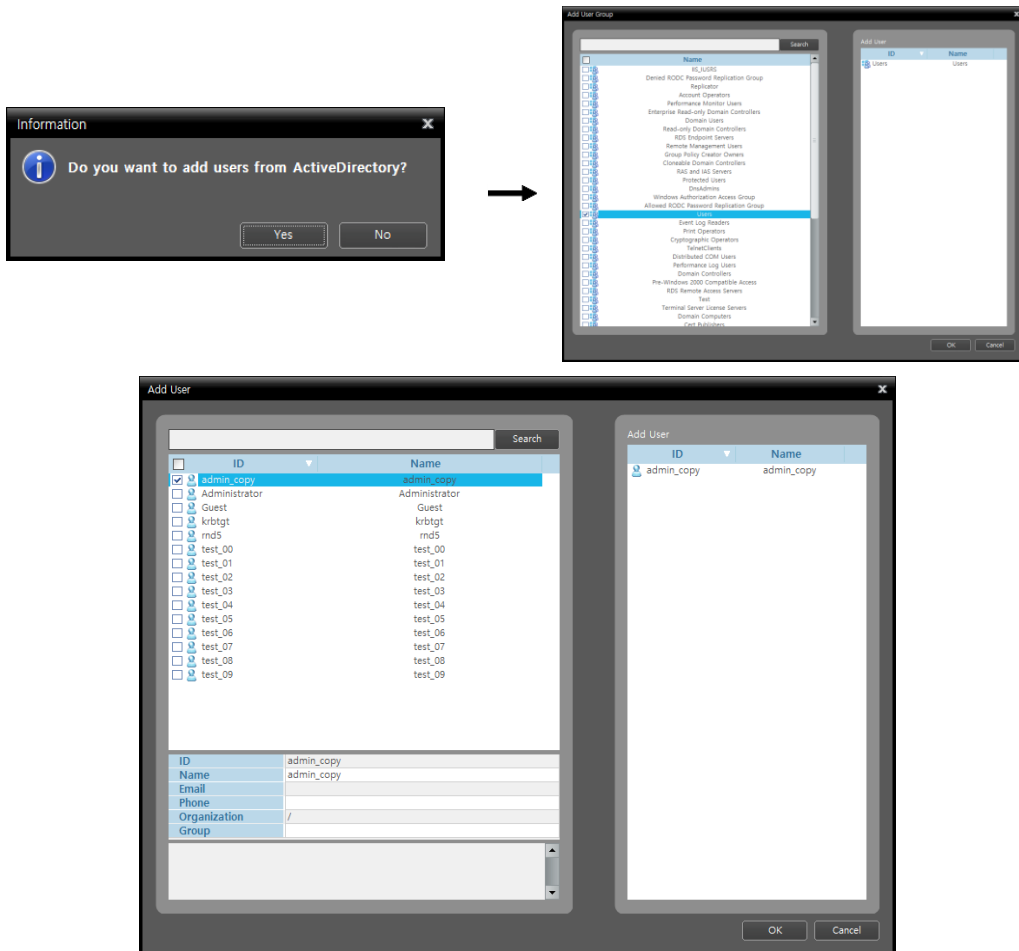


The User Group interface has a title bar 'User Group' and a main area with a header 'Group'. Below the header is a list item 'Administrators' with a user icon. At the bottom of the interface are three buttons: 'Add', 'Delete', and 'Authority'.

- Select a user group to register the user. The user can be registered in multiple user groups. The user group's device access authority and the user's authority are combined to decide the ultimate authorities.

Add User from ActiveDirectory

This option is supported only when all services are located with the server which has joined active directory domain.



- **Add ActiveDirectory User Group:** Adds an ActiveDirectory user group as an COSTAR starNET Pro user. A user in this registered ActiveDirectory user group can log on to the COSTAR starNET Pro program.
- **Add ActiveDirectory User:** Adds a user from ActiveDirectory to COSTAR starNET Pro.

Chapter 16 — Event Management

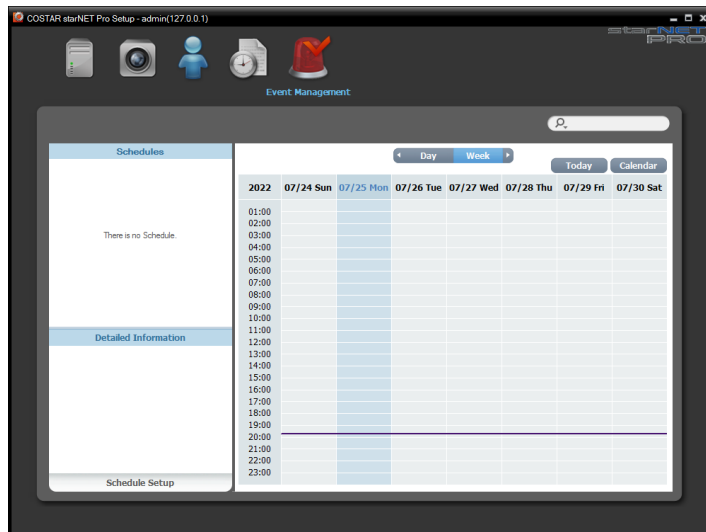
You can manage event detection notification to the Client system based on a preset event management schedule and monitor or play back the event-detected video on the Client system. Event related functions may not be supported depending on the protocol that the device uses and the device model (supported protocols: DirectNET protocol, some versions of the Axis, Panasonic BB, Panasonic WV (DG), Baster, Mobotix, Pelco, RTSP/STP, Protocol-H, IQinVision, Sony, and ONVIF™ Conformance protocols). Ask your dealer or distributor for details.

16.1 Setting up Event Management Schedule

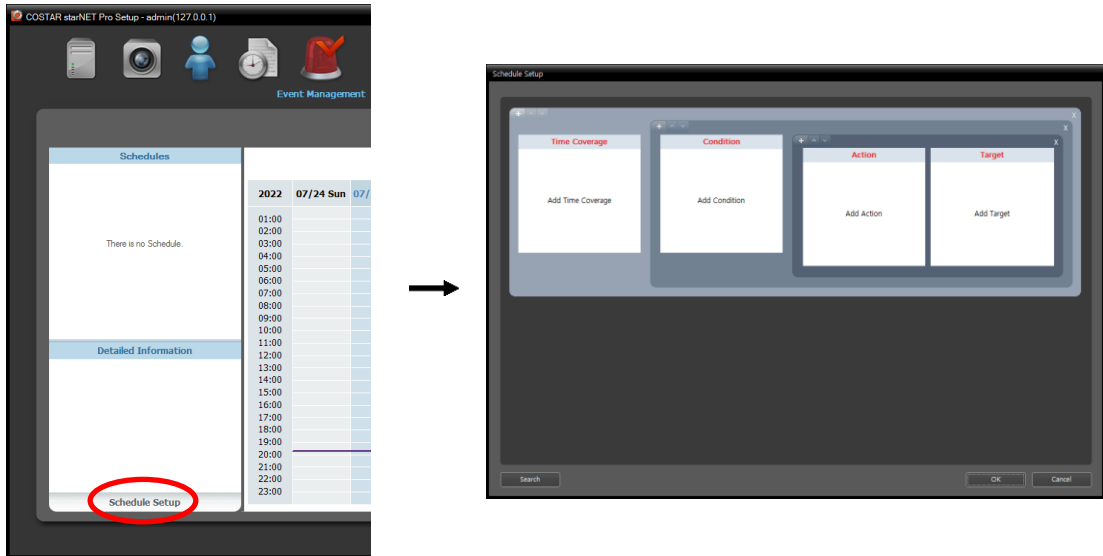
First, check the following and run the Setup program.

- Services should be running on the system. Refer to 3.1 Running Services (p. 25) for details.
- Devices should be added to a device group. Refer to Chapter 14 — Device Management (p. 142) for details.

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



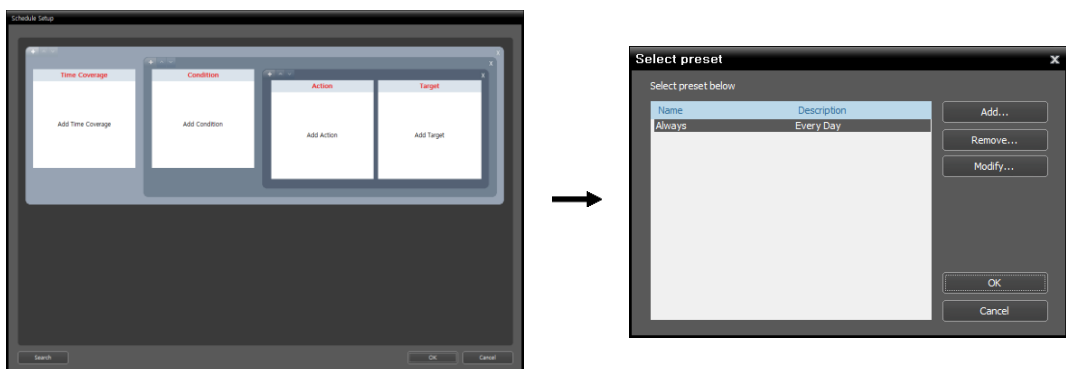
Click the Schedule Setup button at the bottom. The Schedule Setup window appears, and schedule windows are displayed with the current settings for each Preset.



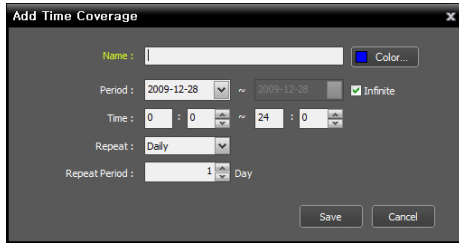
- **Time Coverage:** Sets up the schedule time. You can set up more than one time range.
- **Condition:** Sets up the event condition. You can set up more than one event condition for the same schedule time.
- **Action:** Sets up the event action. You can set up more than one event action for the same event condition.
- **Target:** Sets up the users to manage the events.

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.



Add Time Coverage

Name: Color...

Period: 2009-12-28 ~ 2009-12-28 ☒ Infinite

Time: 0 : 0 ~ 24 : 0

Repeat: Daily

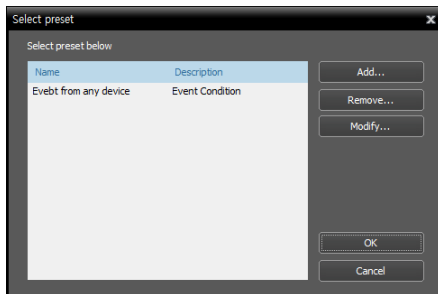
Repeat Period: 1 Day

Save Cancel

- **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.



Select preset

Select preset below

Name	Description
Event from any device	Event Condition

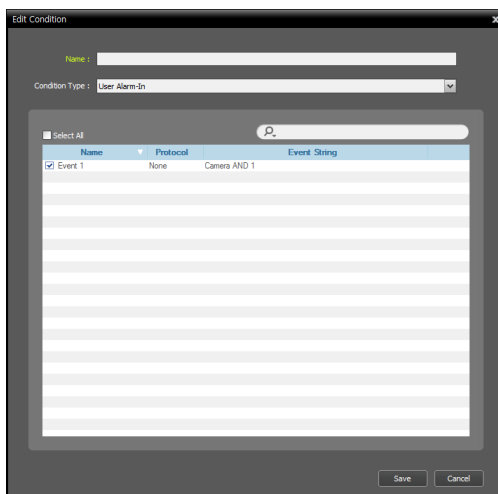
Add...
Remove...
Modify...

OK
Cancel

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.
- **Condition Type:** Select an event condition type.

User Alarm-In



Edit Condition

Name:

Condition Type: User Alarm-In

☒ Select All

Name	Protocol	Event String
<input checked="" type="checkbox"/> Event 1	None	Camera AND 1

Save Cancel

This notifies you of user alarm-in events based on the event action setting in the **COSTAR starNET Pro** program. Refer to **Chapter 16—Device Management, User Alarm-In Event Setup** (p. 138) for details about registering the user alarm-in event.

- **Name:** Displays a list of user alarm-in events registered on the administration service.
- **Protocol:** Displays the protocol that the event uses.
- **Event String:** Displays the event string that triggers a user alarm-in event.

Select a user alarm-in event to be notified of.

Time Condition

The 'Add Condition' dialog box has a title bar with a close button. It contains a 'Name' field, a 'Condition Type' dropdown menu set to 'Time Condition', and a 'Time' field with a clock icon. At the bottom are 'Save' and 'Cancel' buttons.

This notifies you at certain times based on the event action setting.

- Time: Specify the notification time.

Event Condition

The 'Add Condition' dialog box for Event Condition shows a 'Name' field, a 'Condition Type' dropdown set to 'Event Condition', and two main panels. The left panel, 'Select Target to produce event and event type', has a search bar and a tree view with 'Event from any device', 'All Devices', and 'Device Group'. The right panel, 'Selected List', is empty. Below the left panel is an 'Event Types' section. 'Save' and 'Cancel' buttons are at the bottom.

This notifies you of specific events based on the event action setting in the devices.

- 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.

This screenshot shows the 'Event from any device' configuration. In the 'Select Target' panel, 'Event from any device' is selected. The 'Event Types' section shows 'Motion Detection' checked. The 'Selected List' panel shows 'Event from any device' with 'Motion Detection' selected under the 'Service' category.

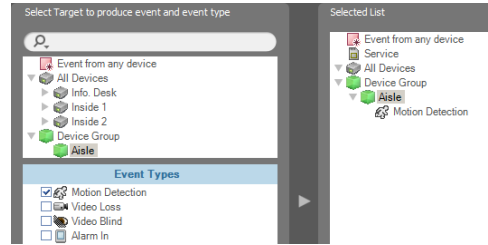
- All Devices: Select to notify events when user-defined types of events are detected from the selected device or camera.

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.

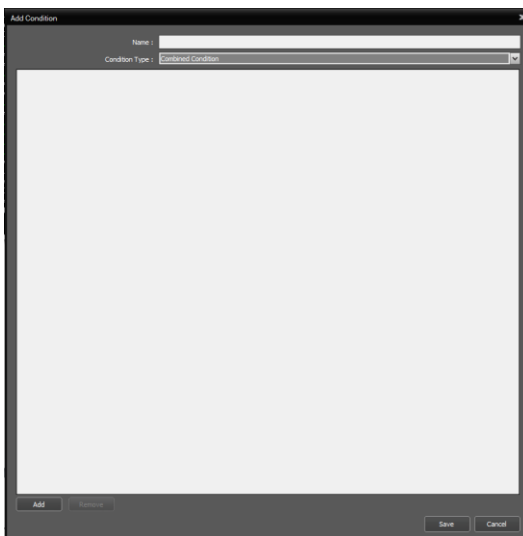
This screenshot shows the 'All Devices' configuration. In the 'Select Target' panel, 'All Devices' is selected, showing a tree view of devices including 'Info Desk', 'Inside 1', and 'CAM1' through 'CAM4'. The 'Event Types' section shows 'Motion Detection' checked. The 'Selected List' panel shows 'Event from any device' with 'Motion Detection' selected under the 'Service' category, and 'CAM1' selected under the 'Device Group' category.

- **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.

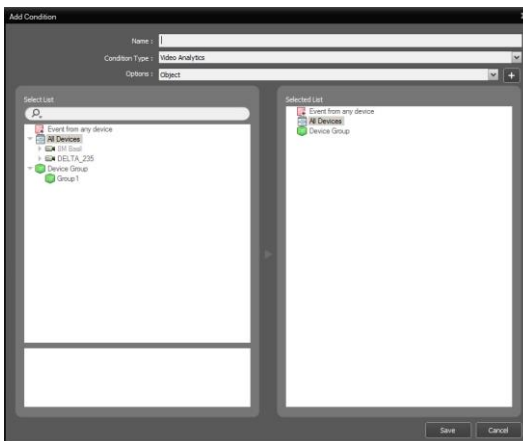


Combined Condition



The event action operates according to the action settings when more than two conditions are simultaneously met.

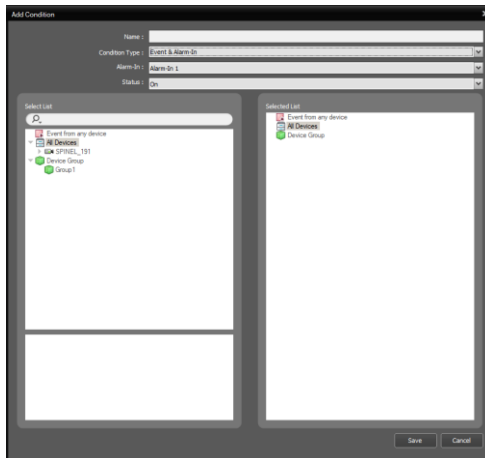
Video Analytics Condition



In Video Analytic Service, the event action operates according to the action settings when the types of event, rule name and object meet the condition.

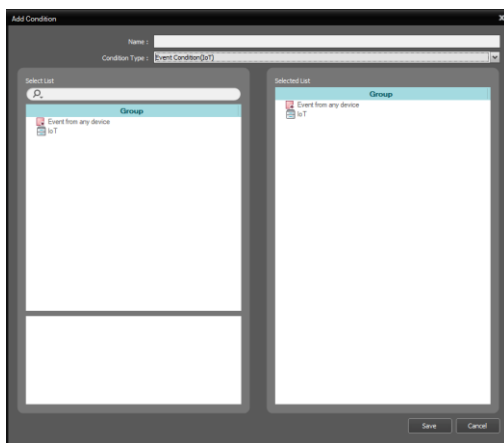
For example, you can make the setting to operate the action only when it is human that triggers loitering event.

Event & Alarm-In Condition



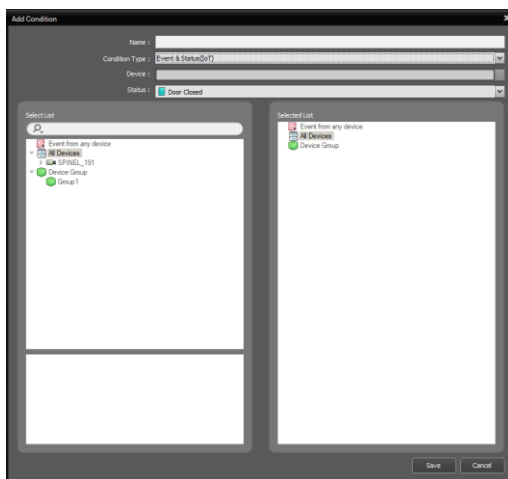
After the alarm-in event occurs, the combined condition can be set so that the action setting is activated when the event occurs.

Event Condition (IoT)



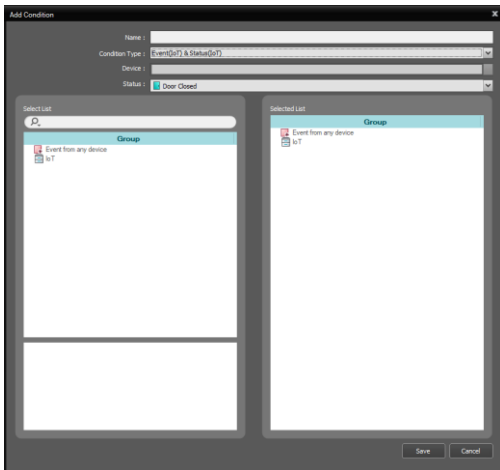
The event action operates according to the action settings when IoT event is detected.

Event & Status (IoT) Condition



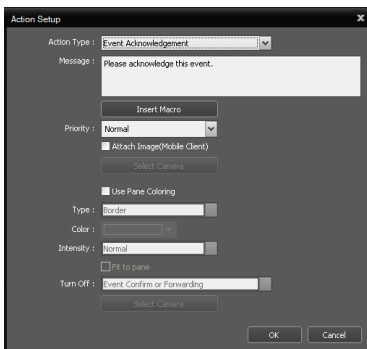
After the IoT event occurs, the combined condition can be set so that the action setting is activated when the event occurs.

Event (IoT) & Status (IoT) Condition

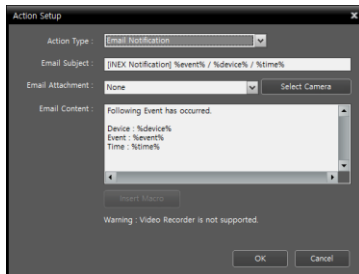


The combined condition can be set so that the action setting is activated when the two IoT events occur.


3. Set up the event action by double clicking the Action schedule window and selecting a desired action type.
 - **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 16.2 Managing Events, Event Acknowledgement (p. 188).

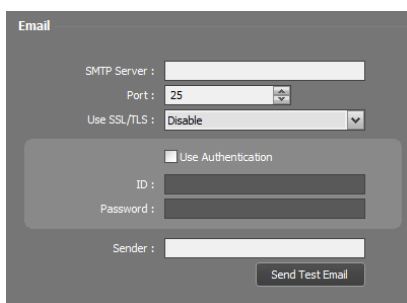



- **Message:** Enter the message to be displayed in the Client program.
 - **Priority:** Select the priority of the event. The priority will be displayed in the event log.
 - **Attach Image(Mobile Client):** Sends a still image of the event that occurred during event acknowledgement. It is only available on the mobile client, and it only works for the recording device registered to the recording service.
 - **Use Pane Coloring:** Add the background color of pane.
 - **Type:** Select the type of pane coloring.
 - **Border:** Render the border in the specified color.
 - **Fill:** Overlay render the pain in the specified color.
 - **Color:** Select the color.
 - **Intensity:** Set the transparency/opacity levels or set the thickness of a border line.
 - **Fit to Pane:** Resize the area to fit within the boundaries of a pane.
 - **Turn Off:** Turn off the paint coloring effect when confirming or forwarding events or clicking the pane.
 - **Select Camera:** Select the camera to apply pane coloring effect.
- **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 Attachment:** Attach the still image of the selected camera.
- **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.

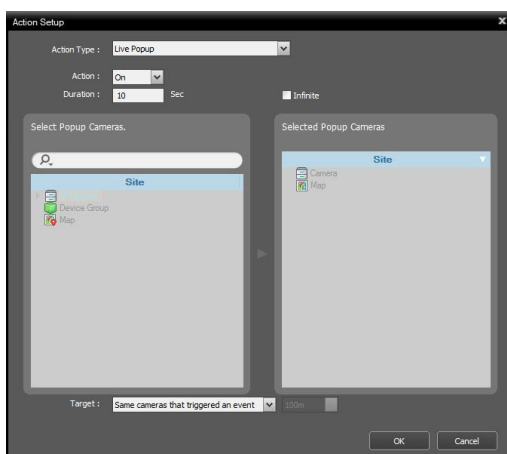
For this to work properly, you should enter the SMTP server information for sending email (COSTAR starNET Pro Setup program → Service menu →  (System Setup) button) and enter the email address of the Client user to be notified. Refer to **Chapter 15 — User Management** (p. 168) for details about entering the email address of the Client user to be notified.



Click the  (System Setup) button in the Service menu to enter the SMTP server information.

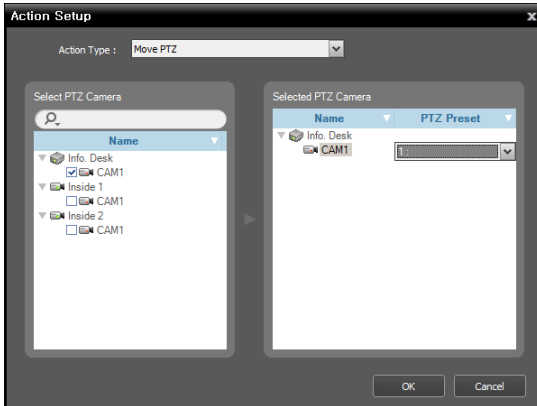
- **SMTP Server, Port:** Enter the email address and port number of the SMTP server. Select **Use SSL/TLS** if the SMTP server requires SSL (Secure Sockets Layer) authentication.
- **Use Authentication:** Select and enter the ID and password if the SMTP server requires user authentication.
- **Sender:** Enter the sender's email address.
- **Send Test Email:** Click the button to test if the SMTP server information is correct.

- **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 **16.2 Managing Events, Live Popup** (p. 187).



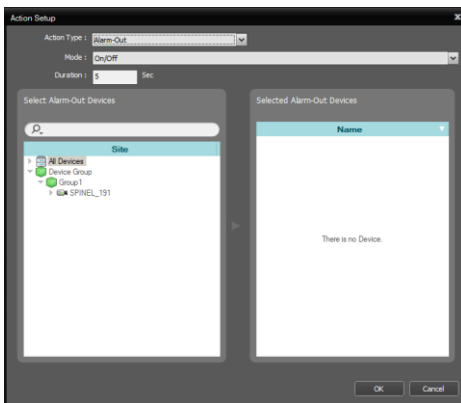
- **Action:** Specifies whether or not to display the popup window.
- **Duration:** Enter the duration for the display of popup video to last. Selecting the **Infinite** option keeps the popup window on the screen.
- **Select popup Cameras:** Select the cameras (maximum 4) from which video will pop up. Selecting the **Same cameras that triggered an event** option pops up video only from the camera where an event is detected.
- **Target:** Select the target to display the popup. Select radius to display the popup the camera footages within the radius based on the GPS information.

- **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 supports the PTZ Preset function).



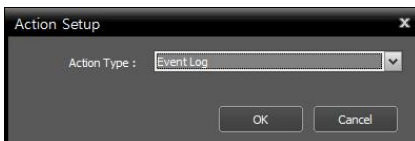
- **Select PTZ Camera:** Select cameras to move. This is supported for PTZ cameras only.
- **Selected PTZ Camera:** Displays the selected cameras and allows you to select a Preset position for the camera to move. Refer to 5.4 Controlling Cameras, PTZ Control, PTZ Preset Control (p. 91) about setting 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 DirectNET protocol).

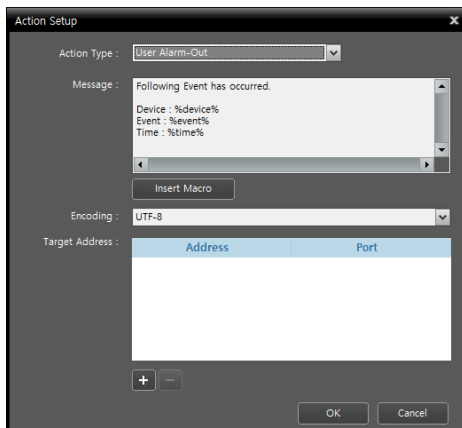


- **Duration:** Enter the duration for the alarm out to last.
- **Mode:** Select On, Off, or On/Off.
- **Select Alarm Out Devices:** Select alarm out devices to activate.

- **Event Log:** Saves the event log when an event is detected based on the event condition setting. Refer to 18.2 Managing Events, Event Acknowledgement (p. 183).

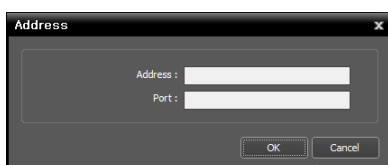


- **User Alarm Out:** Send text strings (UTF-8 encoding) via TCP networking to the devices designated below when an event is detected (based on the event condition setting).

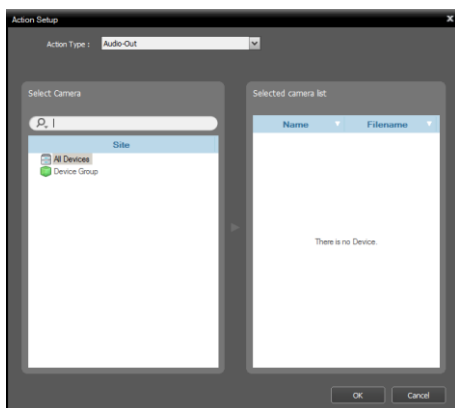


- **Message:** Enter the text string to be sent.
- **Encoding:** Select the text encoding.
- **Target Address:** Click the **+** button at the bottom and enter the IP address and port number of the device to receive the text string.

NOTE: If you want to associate User Alarm Out with a user alarm-in event, enter the IP address of the COSTAR starNET Pro system to trigger a user alarm-in event and the alarm in port number of the monitoring service of the COSTAR starNET Pro system to trigger a user alarm-in event.



- **Audio-Out:** Plays the audio from the selected camera when an event is detected according to the event condition settings.



- **Select Camera:** Select a camera to perform the audio-out.
- **Selected Camera list:** Select an audio file to play from the list of selected cameras.

- **HTTP Send:** Sends the HTTP to the device when an event is detected according to the event condition settings.

The 'Action Setup' dialog box for 'HTTP Send' contains the following fields and controls:

- Action Type:** A dropdown menu set to 'HTTP Send'.
- SSL:** A dropdown menu set to 'http'.
- HTTP Method:** A dropdown menu set to 'Get'.
- Enter URL:** A text input field.
- Parameter:** A large text area for entering parameters.
- Target Address:** A table with two columns: 'Address' and 'Port'.
- Buttons:** '+', '-', 'OK', and 'Cancel' buttons at the bottom.

- **SSL:** Select a SSL to use.
- **HTTP Method:** Select a method between Get or Post.
- **Enter URL:** Enter URL to use.
- **Parameter:** Enter a necessary parameter.
- **Target Address:** Click the **+** button and enter the IP address, port number, ID and password of the device which will receive the HTTP.

The 'Address' dialog box contains the following fields and controls:

- Address:** A text input field.
- Port:** A text input field.
- ID:** A text input field.
- Password:** A text input field.
- Buttons:** 'OK' and 'Cancel' buttons at the bottom.

- **Play Sound:** Plays a sound file (*.wav) set by the monitoring service when an event is detected.

The 'Action Setup' dialog box for 'Play Sound' contains the following fields and controls:

- Action Type:** A dropdown menu set to 'Play Sound'.
- Filename:** A text input field with a file selection icon (folder and arrow) to its right.
- Buttons:** 'OK' and 'Cancel' buttons at the bottom.

- **TTS:** Plays a message set by the monitoring service when an event is detected.

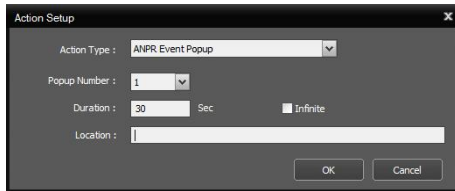
The 'Action Setup' dialog box for 'TTS' contains the following fields and controls:

- Action Type:** A dropdown menu set to 'TTS'.
- Message:** A large text area for entering the message.
- Insert Macro:** A button below the message text area.
- Voice Speed:** A dropdown menu set to '0'.
- Gender:** A dropdown menu.
- Buttons:** 'OK' and 'Cancel' buttons at the bottom.

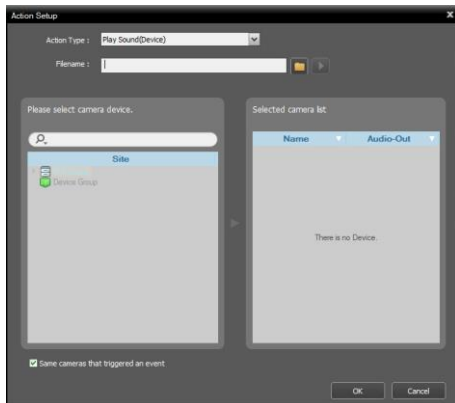
- **Message:** Enter the message to be displayed.
- **Speaking Rate:** Select the speaking rate of the message playback.
- **Gender:** Set the gender of message playback. For more information on TTS support, please refer to Microsoft Speech Service.

- (<https://docs.microsoft.com/en-us/azure/cognitive-services/speechservice/language-support?tabs=spechtotext>)

- **ANPR Event Popup:** Displays a popup window with vehicle information (DenyList or AllowList) detected as an ANPR event. For some cameras, ANPR detection still images are also displayed.



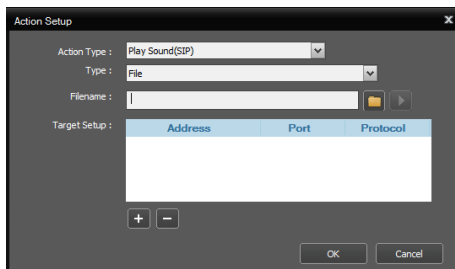
- **Play Sound(Device):** The device plays a sound file (*.wav) set by the monitoring service when an event is detected.



NOTE: Only G.711 is supported for audio codec.

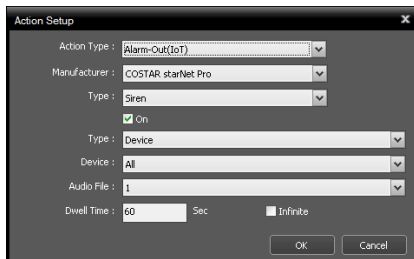
- **Filename:** Select a sound file.
- ☒ **Same cameras that triggered an event:** Applies a sound play action to the same cameras that triggered an event.

- **Play Sound(SIP):** The device plays a sound file (*.wav) or TTS set by the monitoring service when an event is detected.



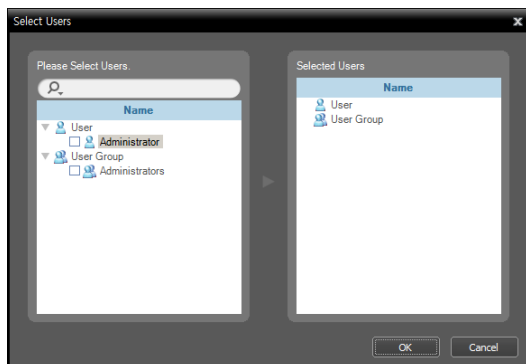
- **Type:** Select between a sound file and TTS.
- **Filename:** Select a sound file.
- **Target Setup:** Add SIP device server information.

- **Alarm-Out(IoT):** The monitoring service sends a siren action signal when an event is detected.




- ☒ **On:** Toggles on/off the siren.
- **Type:** Select the siren action target between device and group.
- **Audio File:** Select the audio file to play on the siren.
- **Dwell Time:** Select the dwell time of the siren action. Select **Infinite** to turn off the siren manually.

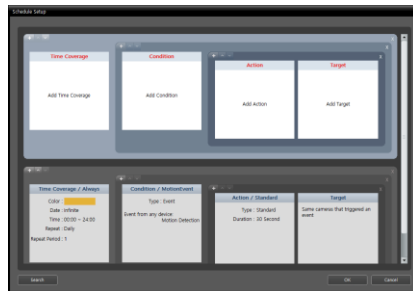
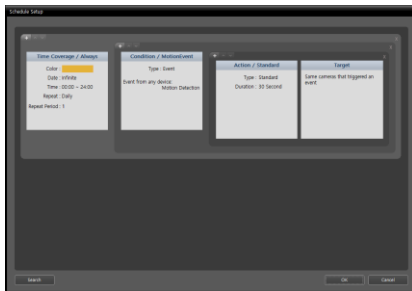
4. Select the users to be notified the events after double clicking the **Target** schedule window.




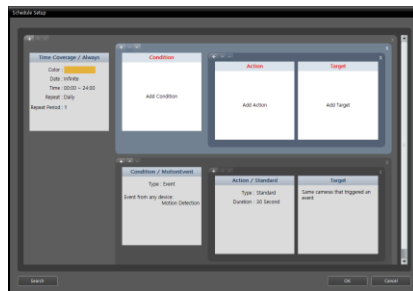
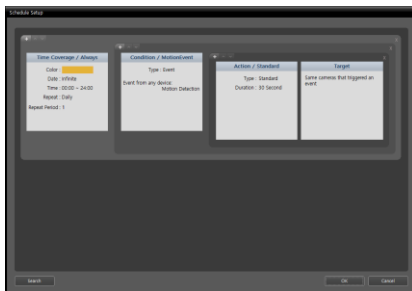
Managing Schedule


Adding a New Schedule

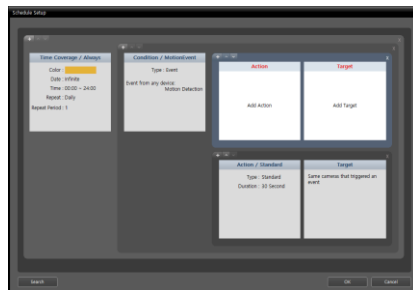
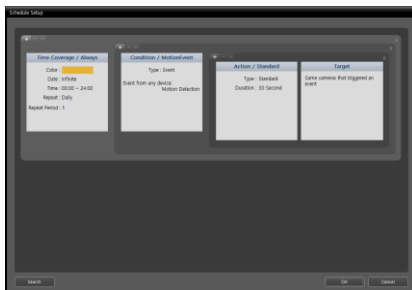
- Adding a new schedule with a different time range: Clicking the  button in the upper left corner of the Time Coverage schedule window allows you to add a new schedule with a different time coverage.



- 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.

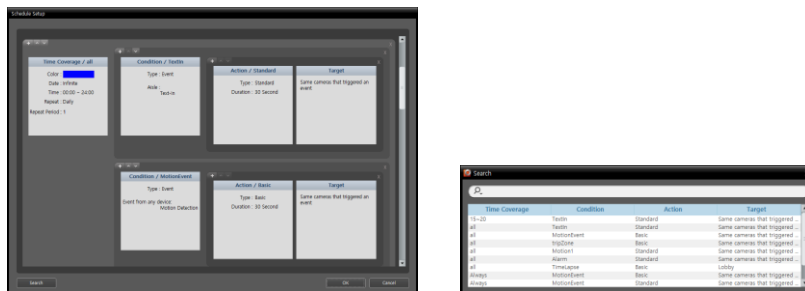


- Adding a new schedule with the same time range and target: Clicking the  button in the upper left corner of the Action schedule window allows you to add a new schedule with the same time range and target.

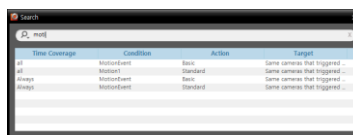


Searching a Schedule

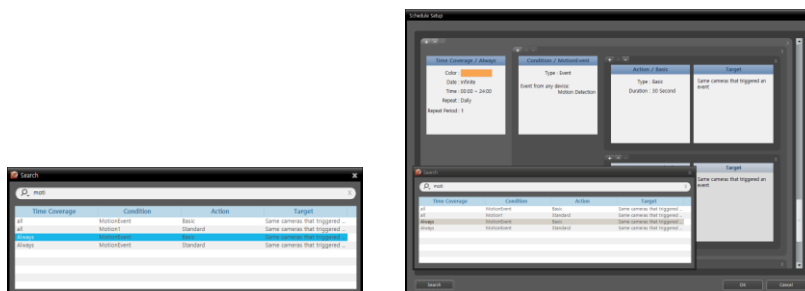
Clicking the Search button on the left bottom of the Schedule Setup window displays the Search window.




- When entering the text in the search box at the top: Search results are displayed at the bottom.





- When selecting a schedule from the list below: The scroll moves to the position of the selected schedule.



Deleting a Schedule

Clicking the  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.

16.2 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.

- Services should be running on the system. Refer to 3.1 Running Services (p. 25) for details.
- Devices should be added to a device group. Refer to Chapter 16 — Device Management (p. 137) for details.
- Event management schedules should be set up. Refer to 18.1 Setting up Event Management Schedule (p. 169) for details.

Live Popup

Popup Screen

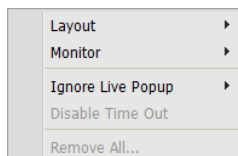
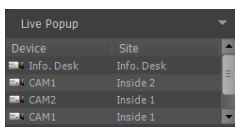
You can monitor live video from a camera with a detected event. Popup screens appear based on the event management schedule which is set on the **Action** schedule window – **Live Popup** action when events are detected. The **Live Popup** list displays the list of live popup screens currently displayed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



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 5.5 Controlling Cameras, Control Toolbar (p. 91) 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 5.5 Controlling Cameras, Live Screen Menu (p. 92) for details.

Live Popup List




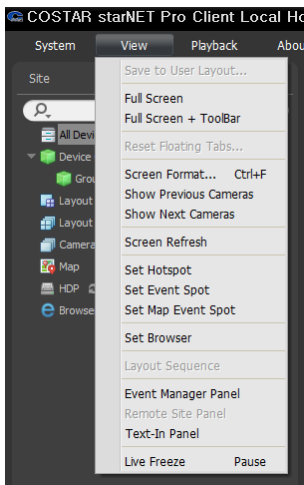
Clicking the arrow button in the upper right corner displays a live popup menu. The live popup menu allows you to change the popup screen settings.

- **Layout:** Select the display format of popup screens. If **Use Single Popup** is selected, only one popup is displayed on the screen.
- **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.

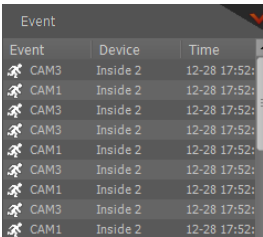
Event Acknowledgement

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.

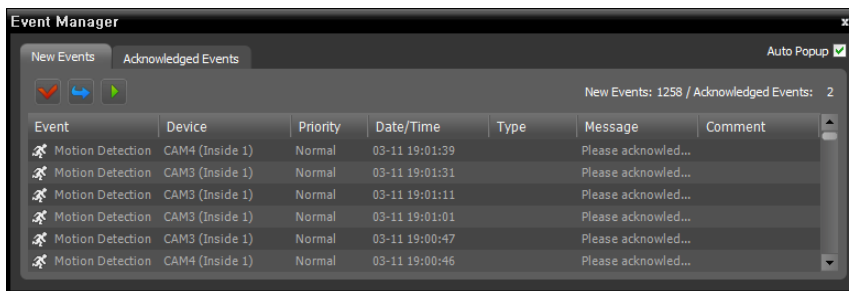


OR







Event	Device	Time
CAM3	Inside 2	12-28 17:52:
CAM1	Inside 2	12-28 17:52:
CAM3	Inside 2	12-28 17:52:
CAM3	Inside 2	12-28 17:52:
CAM1	Inside 2	12-28 17:52:
CAM3	Inside 2	12-28 17:52:
CAM1	Inside 2	12-28 17:52:
CAM3	Inside 2	12-28 17:52:
CAM1	Inside 2	12-28 17:52:

The Event Manager panel is displayed.

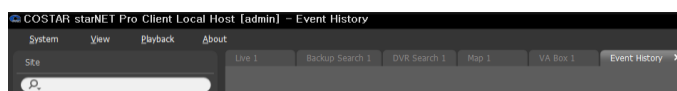
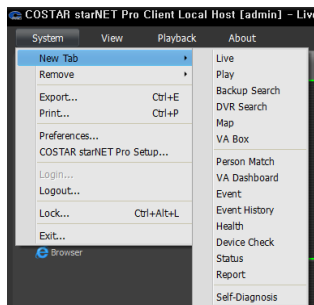


The list of events is displayed that notified to the Client system based on the preset event management schedule.

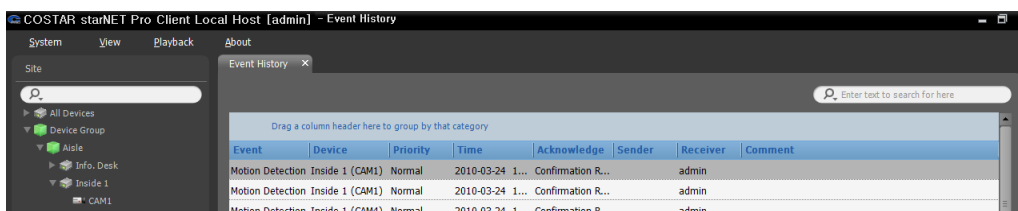
- **Auto Popup** : Pops up the Event Manager panel automatically when the Client system is notified of an event.
- **New Events**: Displays events that the Client system is notified of but not yet acknowledged.
 -  (Acknowledge Event): Acknowledges the selected event in the list, and the selected event 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 15 — User Management (p. 173) 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.

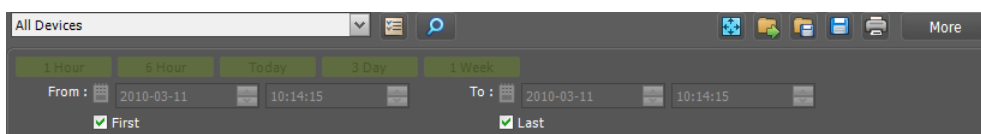


The log entries are displayed. Clicking the right mouse button on a column header displays a menu and allows you to sort data as you want.



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 17 — Map Editor

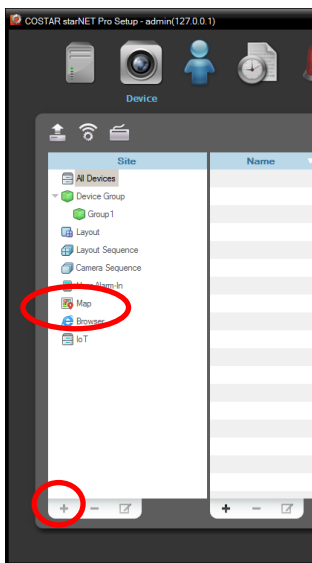
You can register a map to monitor video from cameras, event detection and input/output device's status of devices registered on the administration service on a map on the Client system.

NOTE: This function may not be supported depending on the protocol that the device uses and device model (supported protocols: DirectNET protocol, some versions of the Axis, Panasonic BB, Panasonic WV (DG), Baster, Mobotix, Pelco, RTSP/STP, Protocol-H, IQinVision, Sony, and ONVIF™ Conformance protocols). Ask your dealer or distributor for details.

17.1 Registering Map

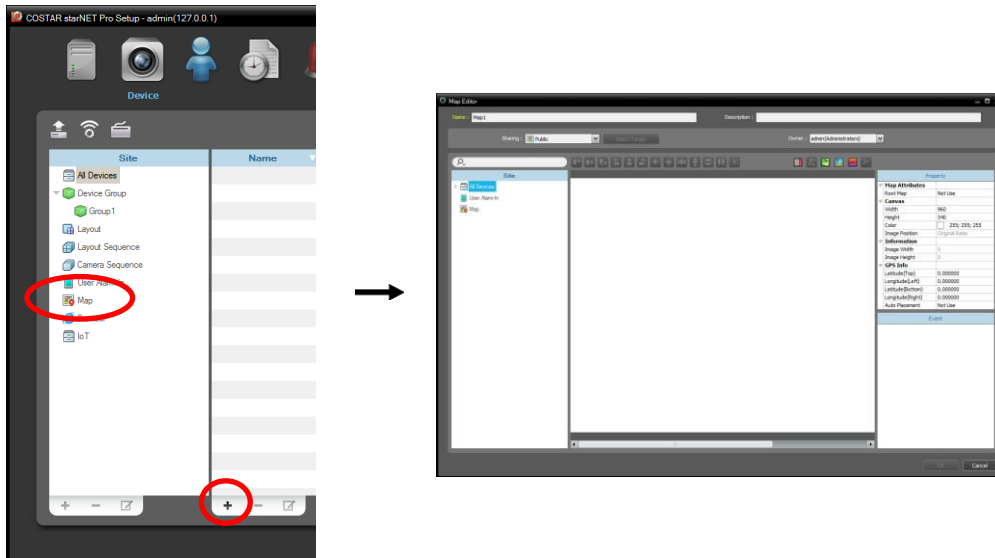
Register Map Group

1. Go to the Start menu, and click COSTAR starNET Pro Setup, and select the Device menu.
2. Click Map in the Site panel, and then the **+** button at the bottom of the Site panel on the left. The Add Map Group window appears.

The 'Add Map Group' dialog box has a title bar with a close button (X). It contains two text input fields: 'Name:' and 'Description:'. The 'Description:' field has a vertical scrollbar. At the bottom right, there are two buttons: 'OK' and 'Cancel'.

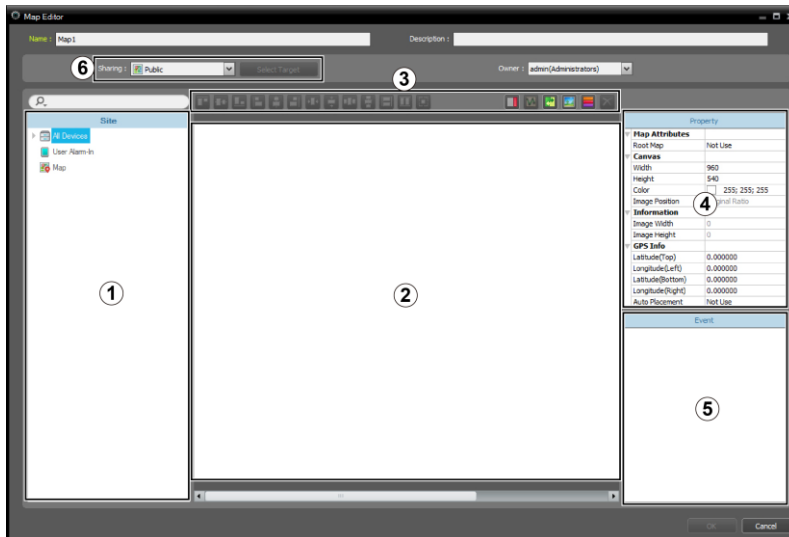
Register Map








1. Go to the **Start** menu, and click **COSTAR starNET Pro 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 **19.2 Setting up Map** (p. 193) for details.
5. Entering a map name and clicking the **OK** button completes registration of the map.

17.2 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. 195) 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.
- ⑥ **Sharing/Owner:**
 - Sharing: Sets the range for sharing.
 - Select Target: Select the specific target for sharing.
 - Owner: Sets the map owner.

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.

Property	
▼ Map Attributes	
Root Map	Not Use
▼ Canvas	
Width	960
Height	540
Color	<input type="color"/> 255; 255; 255
Image Position	Original Ratio
▼ Information	
Image Width	0
Image Height	0
▼ GPS Info	
Longitude(Left)	0.000000
Latitude(Top)	0.000000
Longitude(Right)	0.000000
Latitude(Bottom)	0.000000
Auto Placement	Not Use
▼ Device Type	[Camera]
Camera	True
VA	False
PIR	False
Alarm-In	False
Alarm-Out	False
Network Alarm-In	False
Text-In	False
Audio-In	False

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="color"/> 255; 255; 255
Background Color	<input type="color"/> 85; 110; 215
Opacity	80
Align Text	Left
▼ Information	
Name	BANK 1



General	
Text	test
Font	Microsoft Sans Serif
Font Size	9
Text Color	<input type="color"/> 0; 0; 0
Background Color	<input type="color"/> 255; 255; 255
Align Text	Left, Top
Bold	Not Use
Italic	Not Use
Underline	Not Use
Strikethrough	Not Use
X Coordinate	149
Y Coordinate	171
Width	61
Height	25

- **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.
- **GPS Info:** Sets the GPS information and auto placement of the canvas.
 - **Longitude, Latitude:** Sets the GPS information of left top and right bottom of the canvas.
 - **Auto Placement:** Sets the auto placement option using the GPS information.
 - **Device Type:** Select a device type for auto placement.

- **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.
 - **Camera View:** Sets the angle, pan, distance, etc (supported only for a camera).
 - **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

This 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 18 — Video Wall Service

The video wall service allows you to control monitoring on multiple monitors with network keyboards for centralized monitoring in a surveillance center.

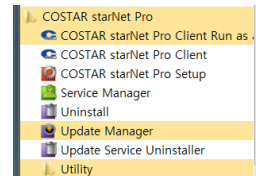
If the video wall service is registered on an administration service, the COSTAR starNET Pro system allows you to control monitoring for devices registered on the administration service.

Number of video wall services, video wall agent systems and monitors are as follows:

- Video Wall Service Registration: Maximum of eight per administration service
- Video Wall Agent System Registration: Maximum of 64 per video wall service depending on the type and number of the licenses. Ask your dealer or distributor about the number of video wall agent system that can be registered using your COSTAR starNET Pro software.
- Monitor Registration: Maximum of 6 per video wall agent system

18.1 Running Services

When the video wall service is installed, the service runs automatically. You can also start or stop running the service manually. Go to the **Start Menu** → Click **COSTAR starNET Pro** → Run the **Service Manager** program.



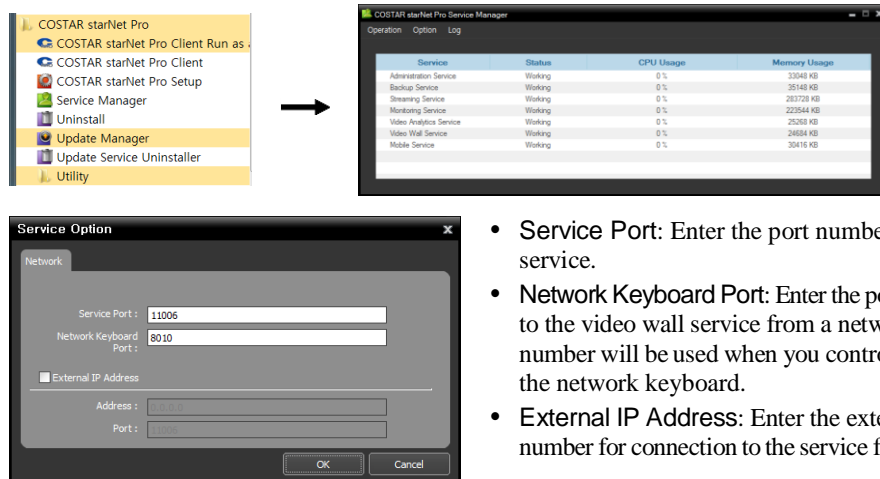
Service	Status	CPU Usage	Memory Usage
Administration Service	Working	0%	33048 KB
Backup Service	Working	0%	35148 KB
Streaming Service	Working	0%	257728 KB
Monitoring Service	Working	0%	222544 KB
Video Analytics Service	Working	0%	25268 KB
Video Wall Service	Working	0%	24854 KB
Mobile Service	Working	0%	30416 KB

Check the status of the service. If the service is not listed as **Working** under **Status**, start the service manually.

18.2 Registering Video Wall Service

You must register video wall services (max. 8) on the administration service. If the IP address and port number of the administration server is entered correctly during the installation, the service is registered on the administration service automatically. Registering the video wall service on the administration service allows you to control monitoring for devices registered on the administration service.

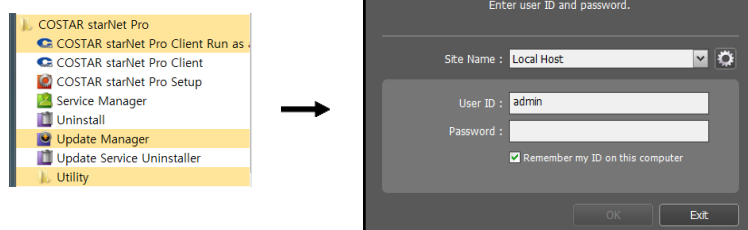
The video wall service should be connected to the administration service via the network connection, on which the video wall service is registered. Go to the Start Menu and click COSTAR starNET Pro. Run the Service Manager program and click the Option – Service Option menu.




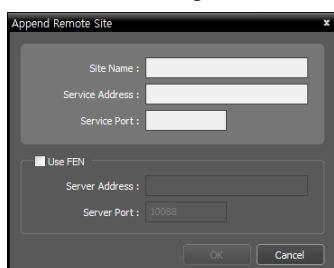
- **Service Port:** Enter the port number for connection to the service.
- **Network Keyboard Port:** Enter the port number for connection to the video wall service from a network keyboard. The port number will be used when you control the Agent system with the network keyboard.
- **External IP Address:** Enter the external IP address and port number for connection to the service from an external network.

Registering on Administration Service

1. Go to the Start Menu → Click COSTAR starNET Pro → Run the COSTAR starNET Pro Setup program and enter login information.



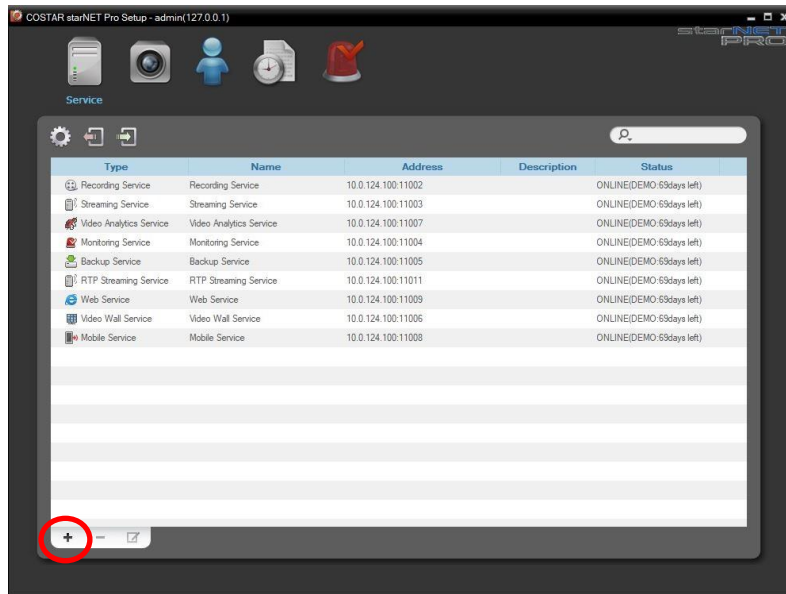
- **Site Name:** Select the administration service to connect to from the list. You can add other administration services to the list or modify information about the administration service in the list by clicking the  button at the right.



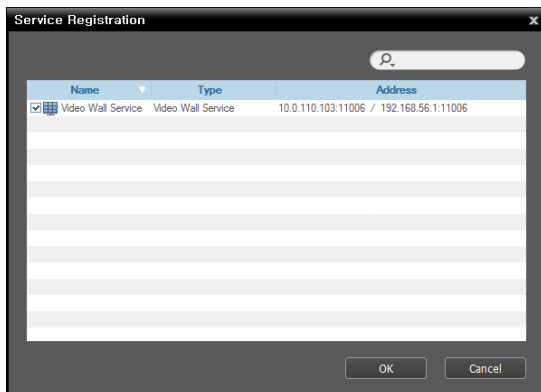
- **Site Name, Service Address, Service Port:** Designate the name of the administration service and enter the IP address and port number of the administration server to which the video wall service is connected (default: 11001).

- **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.
2. **Remember my ID on this computer:** Check the box if you want to save your ID for logging on.

3. Select the **Service** menu, and then register a video wall service on the administration service following the procedures below.

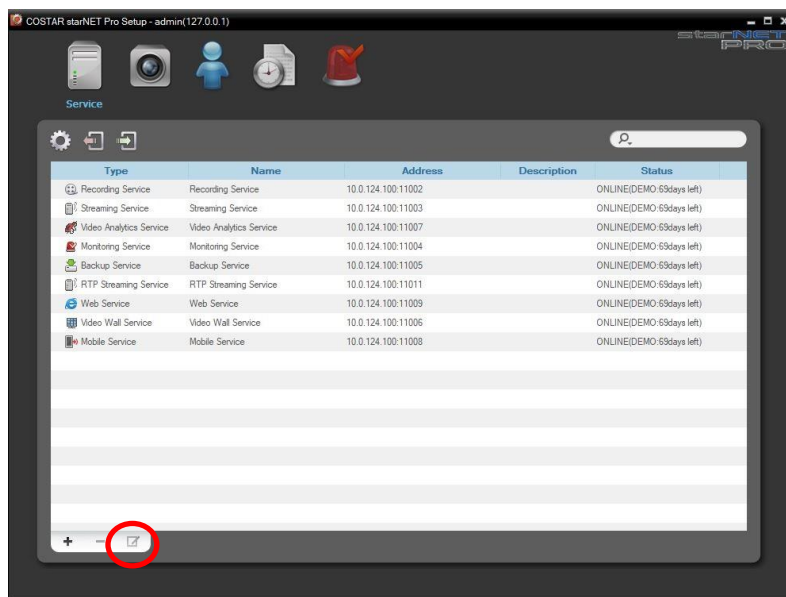



4. Click the **+** button at the bottom. The **Service Registration** window appears, and a list of available services is displayed with information about each service.

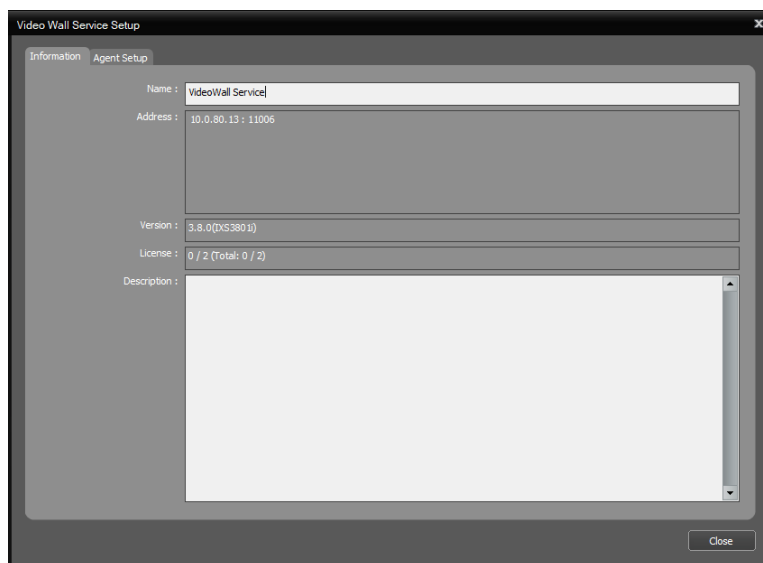


- **Name:** Displays services that are currently connected to the administration service via the network.
- **Type:** Displays the service type.
- **Address:** Display the IP address and port number of each server.

5. Select a video wall service to register on the administration service and click the OK button.



6. Select a video wall service and click the  button at the bottom. The Setup – Video Wall Service window appears. Select the Information tab.



7. Enter the video wall service's name and click the Close button.

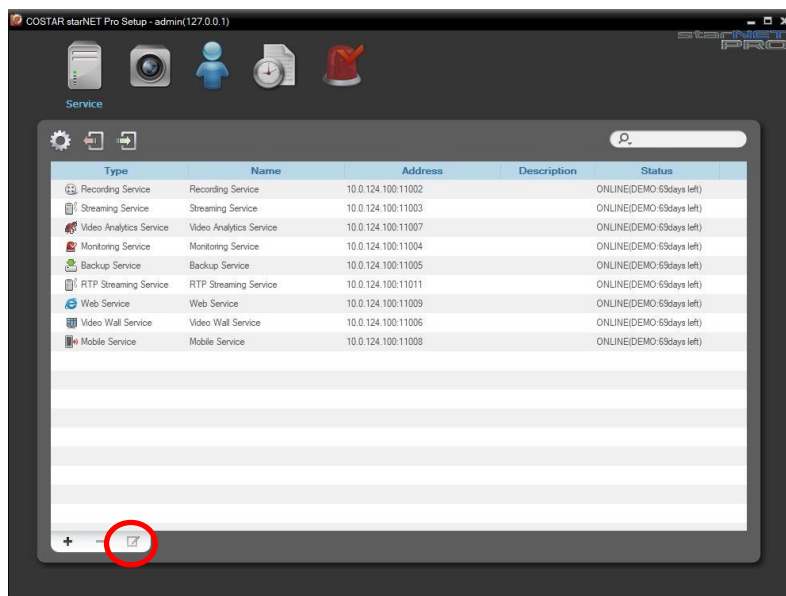
18.3 Registering Video Wall Agent System


You can control monitoring on multiple monitors with network keyboards.

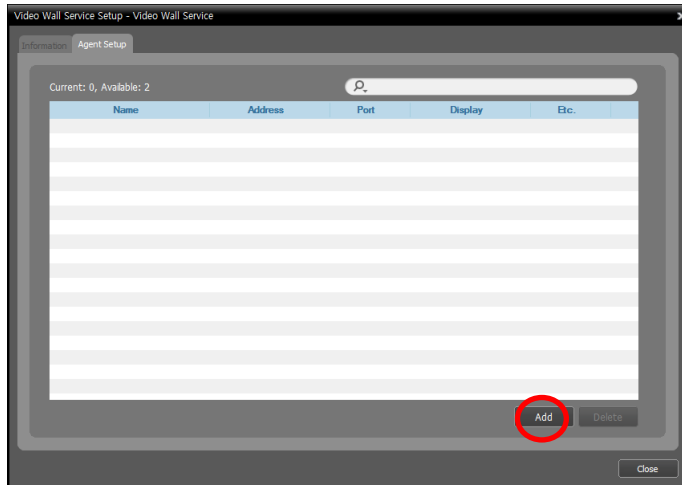
NOTE: If User Account Control is turned on in the Agent system, the Video Wall Agent program may not work. In this case, turn User Account Control off (*Start menu → Control Panel → User Accounts and Family Safety → User Accounts → Turn User Account Control off*) and run the Video Wall Agent program.

Registering Agent System

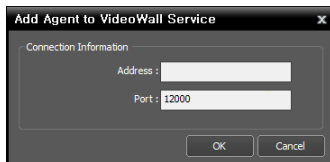
1. Go to the Start Menu → Click COSTAR starNET Pro → Run the COSTAR starNET Pro Setup program and enter login information.



2. Select a video wall service and click the  button at the bottom in the Service menu. The Setup – Video Wall Service window appears. Select the Agent Setup tab.

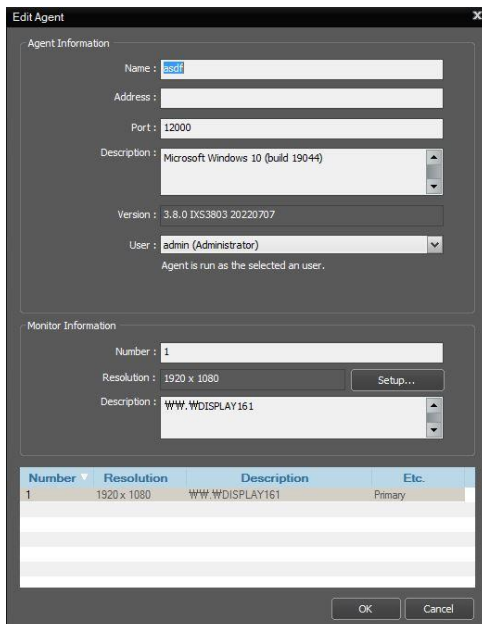


3. Click the Add button at the bottom. The Add Agent to Video Wall Service window appears.



- Address, Port: Enter the IP address and port number of the Agent system.

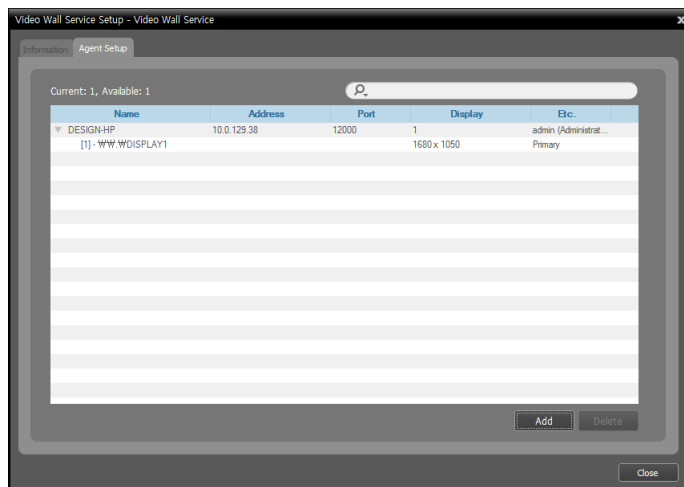
4. Click the OK button. The Edit Agent window appears.




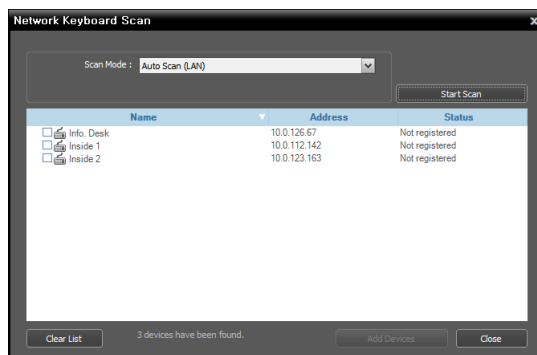
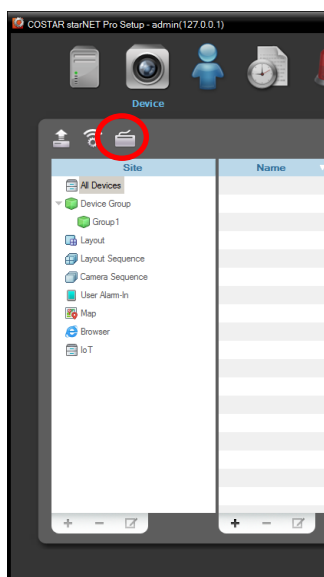
- Name: Allows you to change the Agent system name.
- Address, Port: Displays the IP address and port number of the Agent system.
- Description: Displays the Operating System information of the Agent system.
- User: The list of users registered on the administration service is displayed. Select a user of the Agent system to be registered. The Agent program will automatically run logging on as the selected user. Each user may have different authority for each device and function depending on the settings at the COSTAR starNET Pro Setup program → User menu. You can change the authority or password of each user at the User menu.
- Number: Displays ID of each monitor connected to the Agent system. The ID is used to distinguish the monitor from other monitors when controlling the Agent system with a network keyboard, so each must have a unique ID.

- Resolution: Displays the resolution of each monitor connected to the Agent system.
- Description: Displays information of each monitor connected to the Agent system.

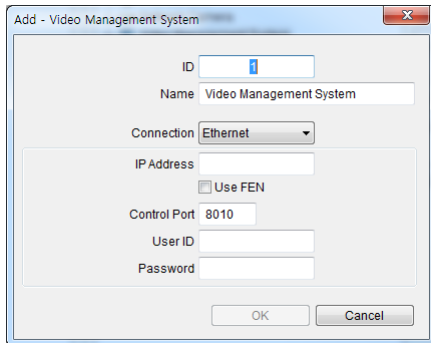
5. Click the OK button. A list of registered Agent system is displayed.



6. Register the network keyboard on the administration service: 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.



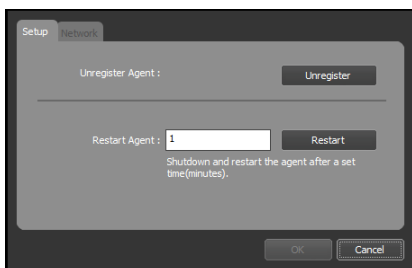
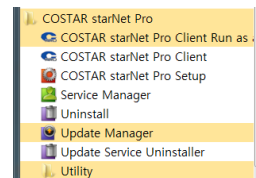
7. Register the video wall service on the network keyboard. Refer to the network keyboard's user manual for details.



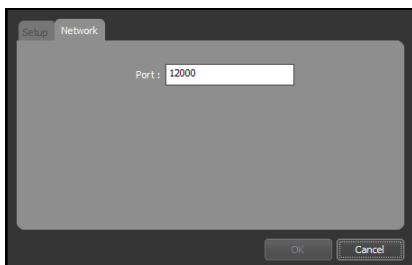
- **ID (video wall service ID):** The network keyboard assigns the ID automatically when the video wall service is registered, and you can change the ID. The ID is used to distinguish the video wall service from other video wall service when connecting to the video wall service with a network keyboard, so each must have a unique ID.
- **Name:** Set up a video wall service name for your reference.
- **IP Address:** Enter the video wall server's IP address. Do not check Use FEN.
- **Control Port:** Enter the Network Keyboard Port number set in the video wall service (Check the Network Keyboard Port number in the Service Manager program → Option menu → Service Option setting).
- **User ID, Password:** Enter the user ID and password for the connection to the video wall service. Check the user ID and password in the COSTAR starNET Pro Setup program → Service menu → video wall service → button → User Setup tab.

18.4 Setting up Video Wall Agent Setup

Go to the Start Menu → Click COSTAR starNET Pro → Click VideoWallAgent Setup.



- **Unregister Agent:** If the Agent system is not removed from a video wall service and all data is deleted while the COSTAR starNET Pro software is uninstalled, the Agent system cannot be registered again. In this case, clicking the Unregister button allows you to register the Agent system.
- **Restart Agent:** The Agent program runs automatically when the Agent program is registered on the video wall service, and the Agent program keeps running as long as the Agent system is operating. If you want to stop running of the Agent program temporarily, enter the duration and click the Restart button. The Agent program stops running and restarts after the entered length of time has expired.
- **Port:** Allows you to change the port number for the connection to the Agent system.



18.5 Connecting to Agent System

Select Devices:
1

1. Press on the network keyboard the video wall service ID on which the Agent system is registered.

D001

2. Press the **DEV** button.

D001

3. Press the monitor ID.

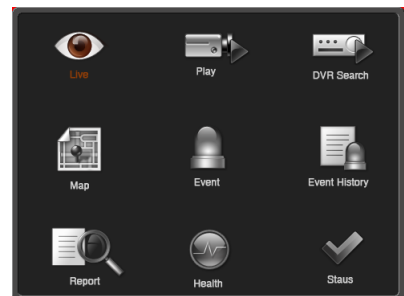
1

D001

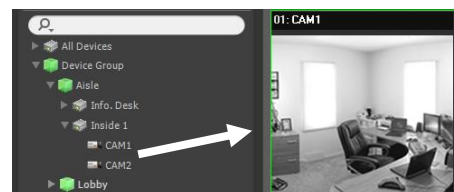
4. Press the **MON** button.

Monitoring Video and Playing Back Recorded Video



1. Press on the network keyboard the F2 button. A list of panels appears → Click Live or Play/DVR Search by using the mouse connected to the network keyboard.



2. Press on the network keyboard the F4 button. A site list is displayed in the current Live or Play/DVR Search panel → Select a site to connect to from the site list, and drag and drop it on the Live or Play/DVR Search screen by using the mouse connected to the network keyboard. Live or recorded video from the selected site is displayed on the screen.



3. Press on the network keyboard the **Menu** button. The live or DVR Search screen menu is displayed.

4. 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.

PTZ Control
Color Control
Image Zoom
Alarm Out
Listen
Talk
Audio Broadcast...
Instant Recording
MultiStream ▶
Hotspot
Event Spot
Map Event Spot
Draw Motion Block
Draw Video Analysis
Aspect Ratio ▶
Save Still Image...
Remove ▶

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

5. Refer to 25.4 – Network Keyboard Buttons (p. 254) for the explanations about controlling with other buttons of the network keyboard.

Chapter 19 — Recorded Video Backup

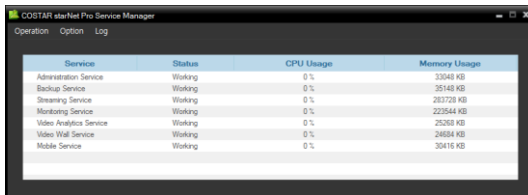
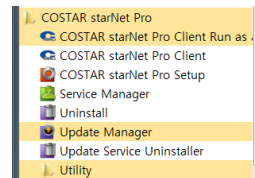
You can back up recorded video saved in the DVRs.

First, check the following and run the Setup program.

- Services should be running on the system.
- There should be recorded data in a DVR.
- The backup service should be registered on the administration service.

19.1 Running Services

When the backup service is installed, the service runs automatically. You can also start or stop running the service manually. Go to the **Start Menu** → Click **COSTAR starNET Pro** → Run the **Service Manager** program.

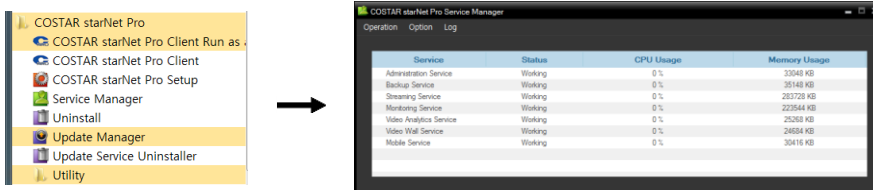


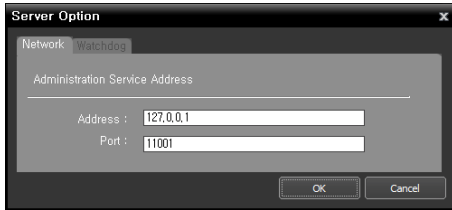
Check the status of the service. If the service is not listed as **Working** under **Status**, start the service manually.

19.2 Registering Backup Service

You must register backup services (max. 64) on the administration service. If the IP address and port number of the administration server is entered correctly during the installation, the service is registered on the administration service automatically. Registering the backup service on the administration service allows you to back up video saved in the DVRs registered on the administration service.

The backup service should be connected to the administration service via the network connection, on which the backup service is registered. Go to the **Start Menu** and click **COSTAR starNET Pro**. Run the **Service Manager** program and click the **Option – Service Option** menu.

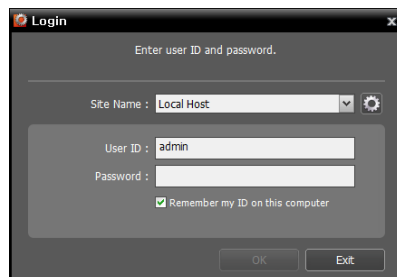
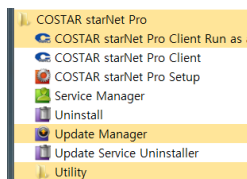





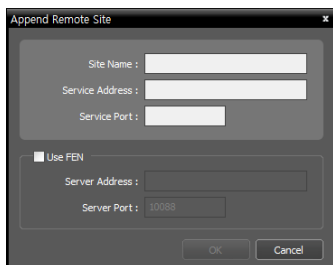
- **Address, Port:** Set up the IP address and port number of the administration server for connection to the administration service.

Registering on Administration Service

1. Go to the Start Menu → Click COSTAR starNET Pro → Run the COSTAR starNET Pro Setup program and enter login information.



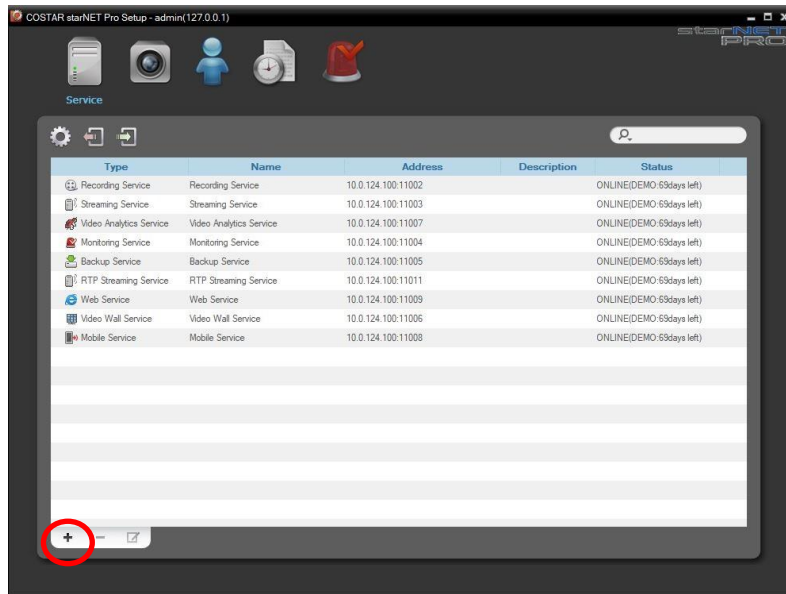
- **Site Name:** Select the administration service to connect to from the list. You can add other administration services to the list or modify information about the administration service in the list by clicking the  button at the right.



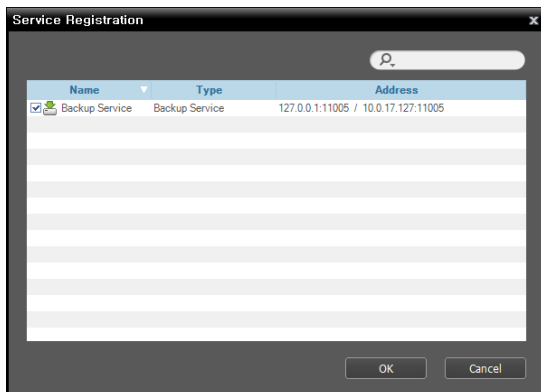
- **Site Name, Service Address, Service Port:** Designate the name of the administration service and enter the IP address and port number of the administration server to which the backup service is connected (default: 11001).

- **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.
- **Remember my ID on this computer:** Check the box if you want to save your ID for logging on.

2. Select the **Service** menu, and then register a backup service on the administration service following the procedures below.



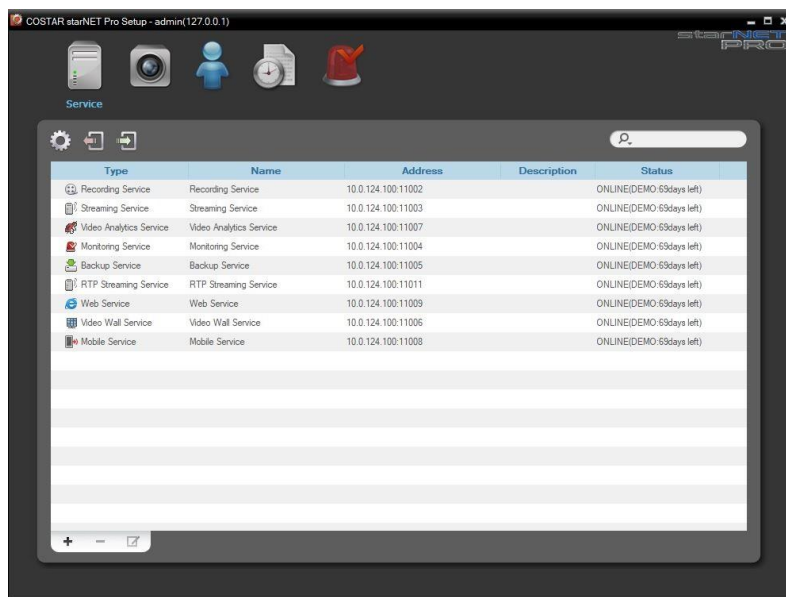
3. Click the **+** button at the bottom. The **Service Registration** window appears, and a list of available services is displayed with information about each service.




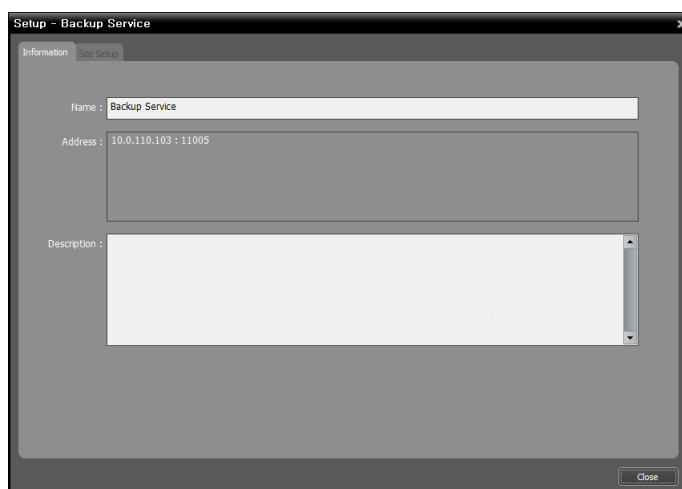
- **Name:** Displays services that are currently connected to the administration service via the network.
- **Type:** Displays the service type.
- **Address:** Display the IP address and port number of each server.

NOTE: Only the services of which the administration server information (*Service Manager* → *Option* → *Server Option*) matches the currently connected administration server are available.

4. Select a backup service to register on the administration service and click the OK button.



5. Select a backup service and click the  button at the bottom. The Setup – Backup Service window appears. Select the Information tab.

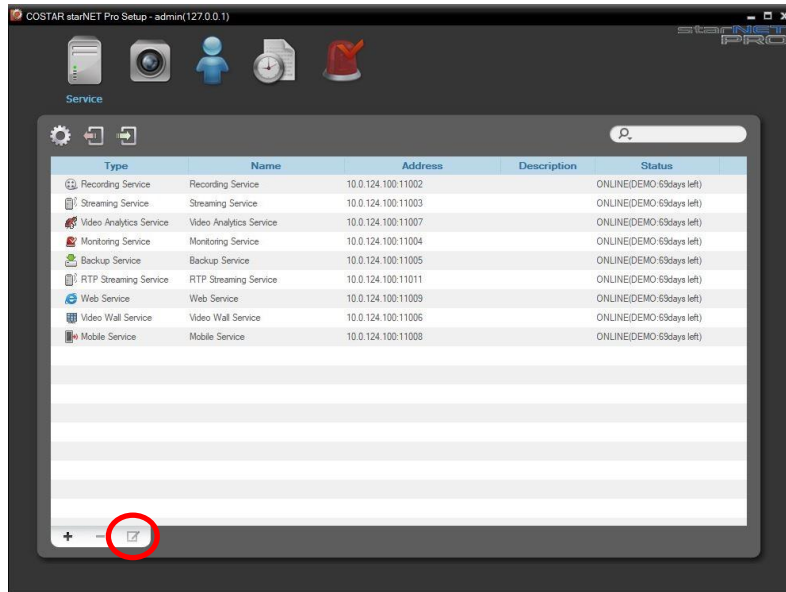



6. Enter the backup service's name and click the Close button.

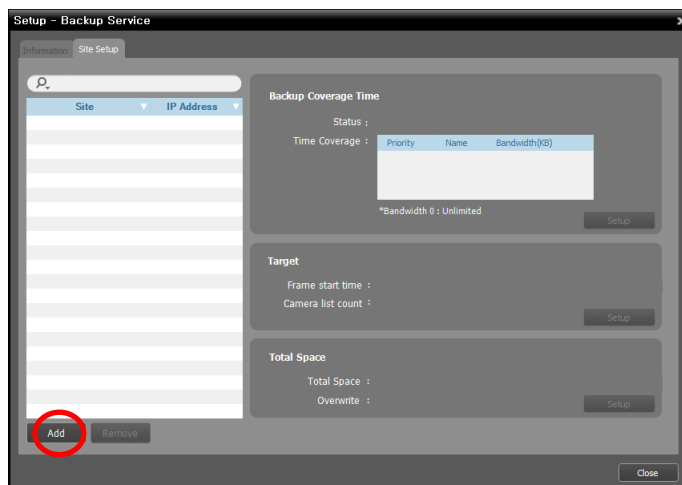
19.3 Adding Backup Sites

Adding to Administration Service

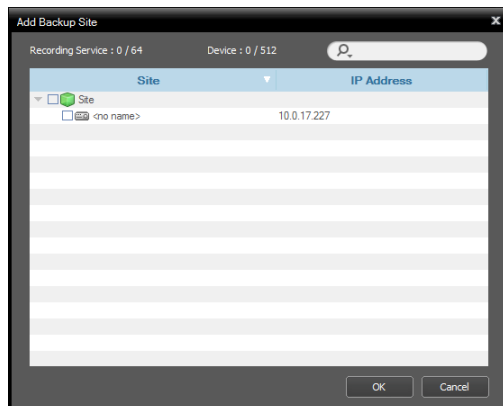
1. Go to the Start Menu → Click COSTAR starNET Pro → Run the COSTAR starNET Pro Setup program and enter login information.



2. Select a backup service and click the  button at the bottom in the Service menu. The Setup – Backup Service window appears. Select the Site Setup tab.



3. Click the Add button at the bottom. The Add Backup Site window appears, and a list of available DVRs is displayed.

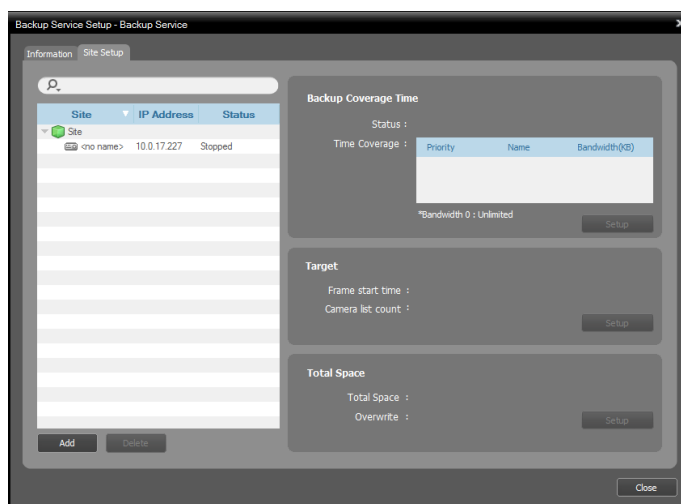


- **Site:** Displays DVRs that are currently connected to the administration service via the network.

NOTE: Only the services of which the administration server information (*Service Manager* → *Option* → *Server Option*) matches the currently connected administration server are available.

4. Select DVRs to back up and click the OK button.

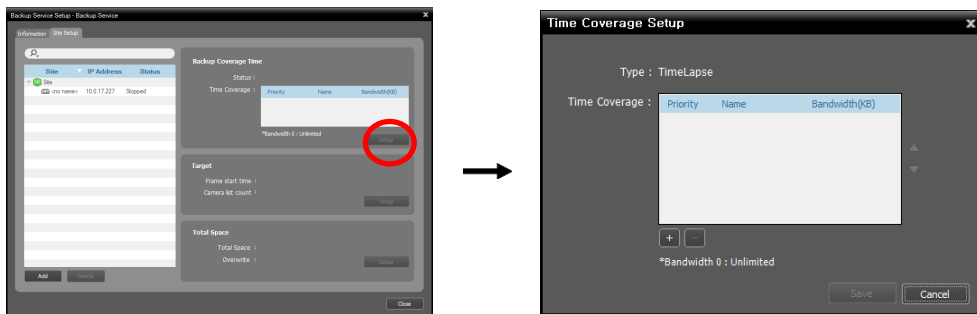
19.4 Setting up Backup Schedule



Select a DVR from the Site list after adding backup sites. You must set up a backup schedule separately for each DVR.

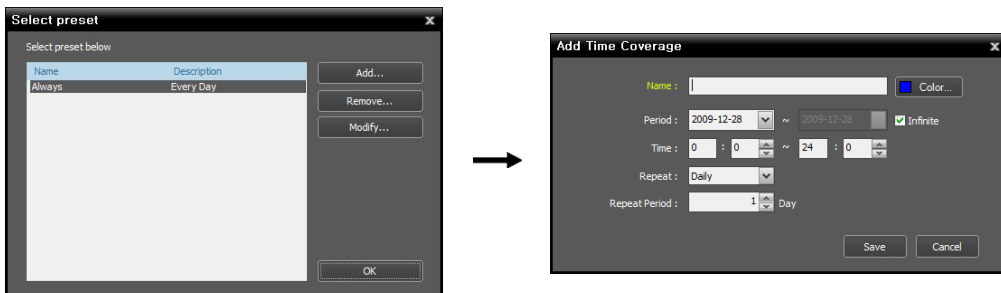
Backup Coverage Time

Click the Backup Coverage Time – Setup button and add a backup period Preset by clicking the **+** button.



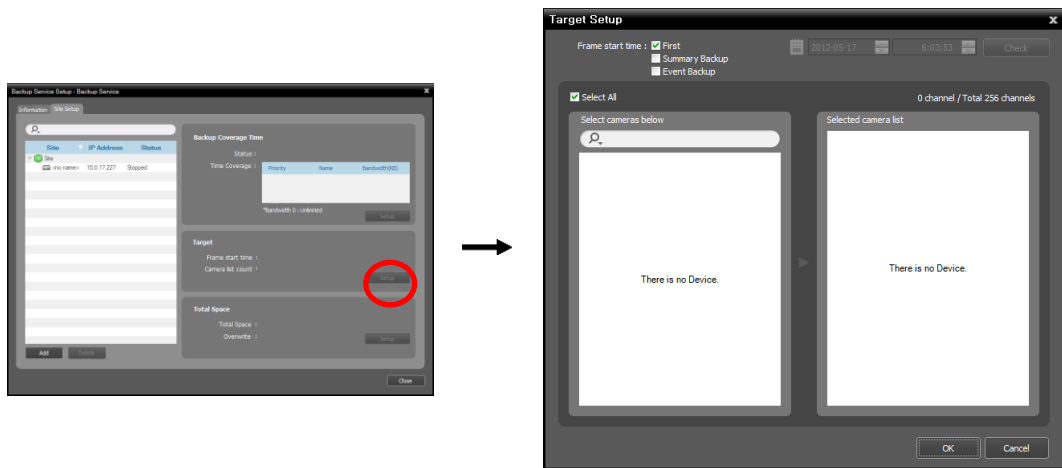
- **Priority:** Displays the priority of backup period Preset. You can change the priority by using the ▲ or ▼ button.
- **Name:** Displays the name of backup period Preset.
- **Bandwidth:** Sets up the maximum bandwidth. You can control the network bandwidth by limiting the network bandwidth depending on the network traffic. The proper bandwidth limit setting can minimize the decrease of recording speed when video is backed up while recording. However, if you limit the network bandwidth, backup speed might decrease.

You can add a new Preset or edit a saved Preset by clicking the Add or Modify button. Setting up the time span Preset for backup is identical to setting it up for recording.

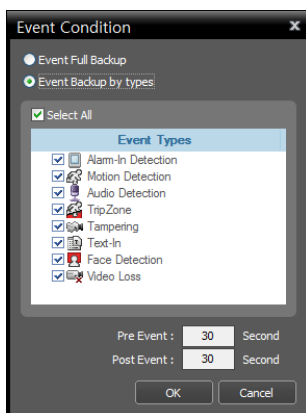


Target

Click the Target – Setup button and select cameras to back up video.



- **Frame start time:** Set up the time of the first frame of the recorded video to start backup, and click the Check button. You are required to select a segment if the administration server's time and date has 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. Selecting First starts backup from the first recorded video.
- **Summary Backup:** Backs up only key frames of recorded video. It allows backing up recorded data of longer period and makes the backup speed faster, but movements might not be smooth when playing back backed-up video. The key frame frequency is different depending on the encoding, and the higher the recording speed, the higher the frequency.



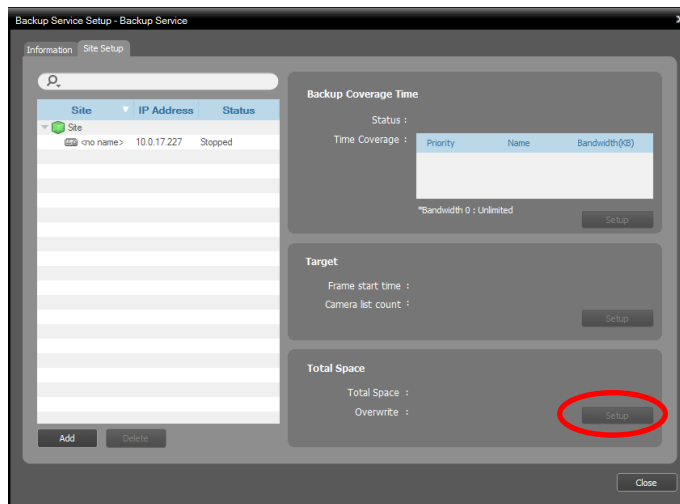
- **Event Backup:** Backs up event-based recorded video.
 - **Event Full Backup:** Backs up the entire event videos.
 - **Event Backup by types:** Backs up the selected events only. The pre/post of the event detect time is backed-up.

- **Select cameras below:** Displays a list of cameras that have recorded video, which can be backed-up.
- **Selected camera list:** Displays the list of cameras to be backed up.

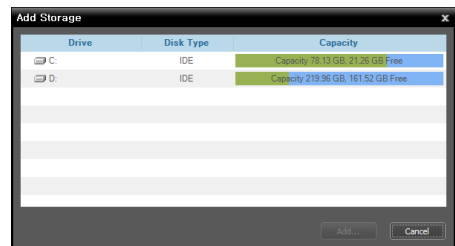
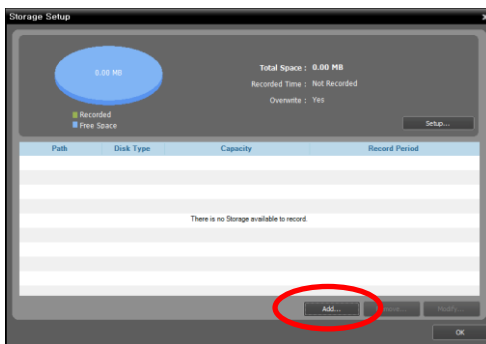
19.5 Allocating Storage

NOTES:

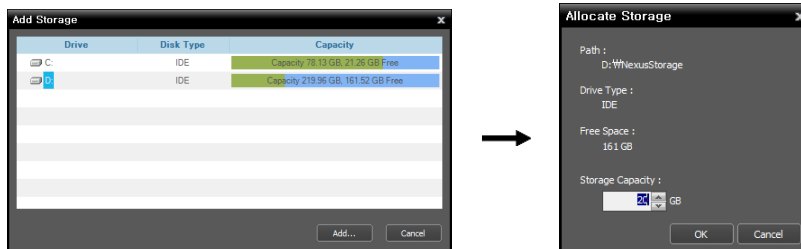
- USB hard disks cannot be allocated storage.
- It is recommended to add a new unformatted hard disk drive to ensure stable backup. If you are setting up a hard disk drive which contains data, however, you are to delete partition(s) and the file system in advance after formatting. Refer to the PC/server's user manual or consult with the PC/server manufacturer for details about how to format or delete the partition(s) and file system.
- When removing a hard disk drive that contains backed-up video from a backup server and installing it in another backup server, you cannot search or play back the video backed-up on the original backup server.
- The total amount of storage for one hard disk drive cannot exceed 50,000 GB.



1. Click the **Total Space – Setup** button after adding backup sites and the **Storage Setup** window appears. Click the **Add** button at the bottom. 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.
2. Select a hard disk drive to allocate storage and click the **Add** button at the bottom. The **Allocate Storage** window appears.



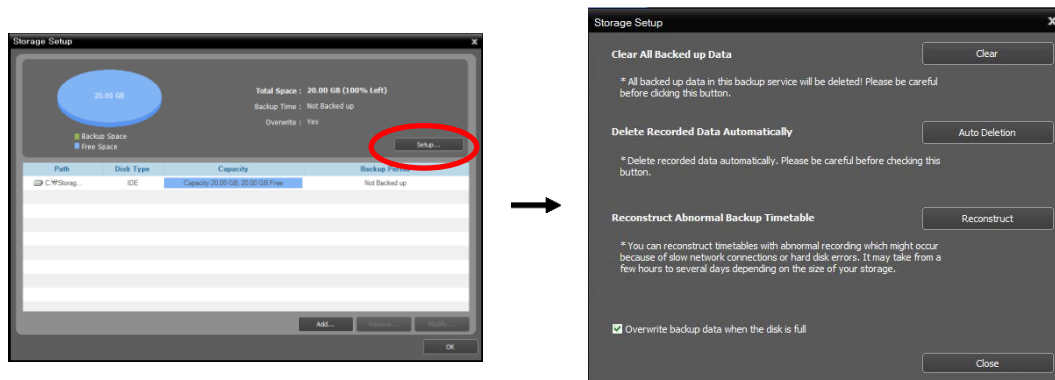
- **Path:** Displays the storage folder path.
- **Drive Type:** Displays the type of hard disk drive.
- **Free:** Displays the available storage capacity.
- **Storage Capacity:** Sets up the storage capacity to be allocated to the hard disk drive (Min. 20GB). If the COSTAR starNET Pro program is installed on the hard disk drive, you must reserve enough free hard disk depending on the installation environment. If the Windows operating system is installed on the hard disk drive, you must reserve more than 10GB of free hard disk for proper system operation. If no file system has been created on the hard disk drive, the backup server automatically creates a proprietary video database file system when storage is allocated to ensure more stable backup and allocates storage to the entire hard disk drive automatically.

Managing Storage

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

Storage of All Hard Disk Drives

Click the Setup button. The Storage Setup window appears.

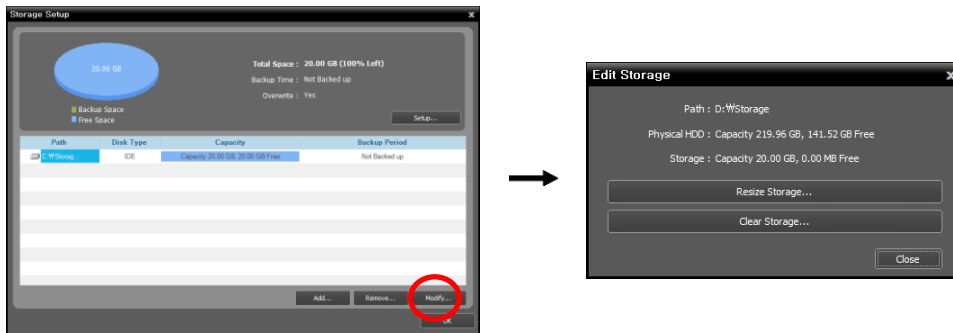


- **Clear All Backed-up Data:** Deletes all backed-up data on all hard disk drives used in the current backup server.
- **Delete Recorded Data Automatically:** Automatically deletes videos recorded before a certain period. Click the Auto Deletion button and select the Enable to set a period. For example, if you set the period to 30 days, videos backed up before 30 days are automatically deleted.
- **Reconstruct Abnormal Backup Timetable:** When the network connection between the backup server and the DVR is too slow or a hard disk drive in the backup server is damaged, the backed-up data and the timetable information of the backed-up 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 backed-up data correctly on the timetable in the Client program.

- ☒ **Overwrite backup data when the disk is full:** Checking the box backs up 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.



- **Resize Storage:** Allows you to increase the storage capacity.
- **Clear Storage:** Allows you to delete all data backed-up in the selected storage.

NOTE: Search or playback of backed-up data will be stopped when storage is resized or cleared.

CAUTION: Clearing storage deletes all data backed-up in the storage and the deleted data cannot be restored.

19.6 Backed-up Video Playback & Exportation

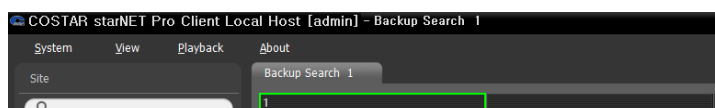
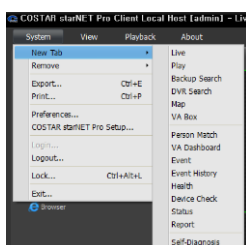
You can play back backed-up video or export backed-up video to USB devices.

First, check the following and run the Client program.

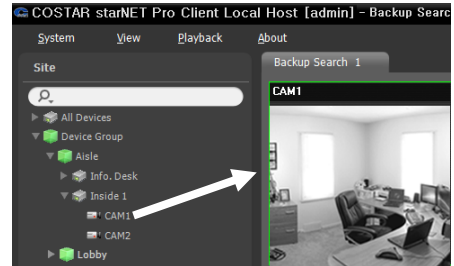
- Services should be running on the system.
- Devices should be added to a device group.
- There should be backed-up data in the backup server.

Playing back Backed-up Video

1. Search and playback of backed-up video in a backup server are supported in the Backup Search panel (maximum 4). If the Backup Search tab is not on the tab panel, go to the **System** menu, click **New Tab** and then **Backup Search**.



- Click the Backup Search tab on the tab panel → Select a device or a camera to connect to from the **Site** list and drag and drop it on the Backup Search screen. Backed-up video from the selected device or camera is displayed on the screen. You can move a camera screen to the desired location on the Backup 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 administration service, you can play video in the layout format by selecting a desired layout from the **Layout** list and dragging and dropping it on the Backup Search screen.

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.

- A panel toolbar, a timetable, a control toolbar and a screen menu are provided for playing back backed-up video. The way to play back backed-up video is identical to the way to play back recorded video.

Exporting Backed-up Video

You can export backed-up video to USB devices. Exporting backed-up video is identical to exporting recorded video.

Playing back Backed-up Video with HDP Player

The backed-up video saved in the hard disk drive can be played with the HDP player. Play the video by opening the file, named after the backed-up device (xxxx.bsd), in the Client system or drag&drop the file.

NOTE: This function does not work when the backup service is using the selected storage.

Chapter 20 — Failover Service

The failover service enhances system stability using a failover function. The failover services replace the administration, monitoring, or video wall service if any problems occur in the service. You can register as many failover services as the number of administration, monitoring, and video wall services.

NOTES:

- The system with the administration service and the system with the failover service must be time-synchronized.
- The failover service will replace only one of the video wall services when a problem occurs in two or more services. The number of failover services must equal the number of video wall services to replace all services.

20.1 Installation

NOTE: Disable your PC's Windows power saving function: *Start menu* → *Power Options* → set both *Turn off the display* and *Put the computer to sleep* to *Never* (*Power Options* → *Power Schemes* tab → set both *Turn off monitor* and *Turn off hard disks* to *Never* when using the Microsoft® Windows® XP operating system).

CAUTION: If an older version of **COSTAR starNET Pro** 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.

WARNING: Upgrading the firmware or software may introduce compatibility issues with third party products.

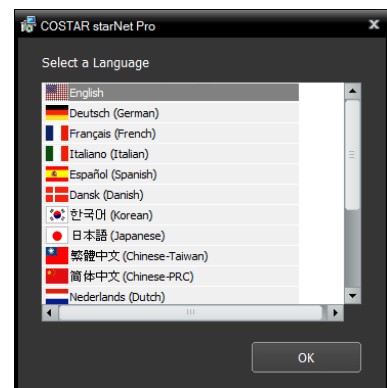
1. Insert the software CD in the failover server.
2. Run the `setup.exe` file in the `Setup` folder of the software CD.

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.

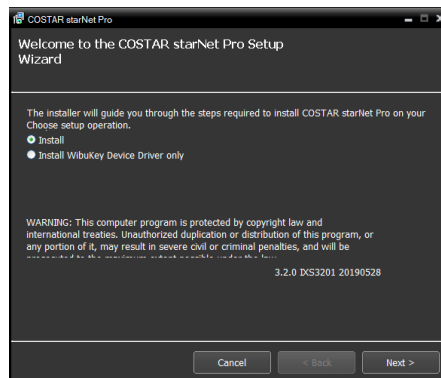
3. Select the language in which to run the program and then click **OK**.

NOTES:

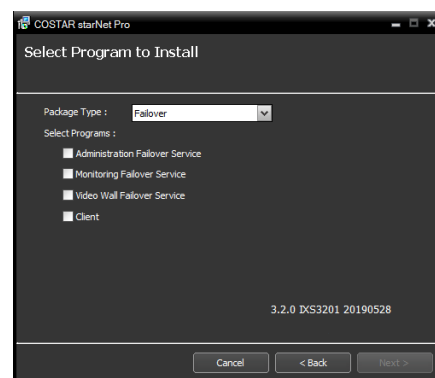
- To properly display the selected language, your PC's operating system should be set to support the selected language.
- To change the **COSTAR starNET Pro** program's language after the software has been installed, select *Language Selector* in the *COSTAR starNET Pro* → *Utility* folder of the *Start*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



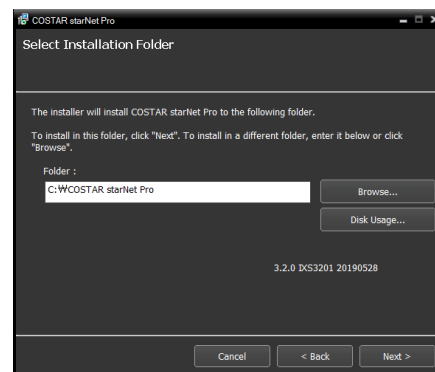
4. When the following screen appears, select **Install** and click **Next**.



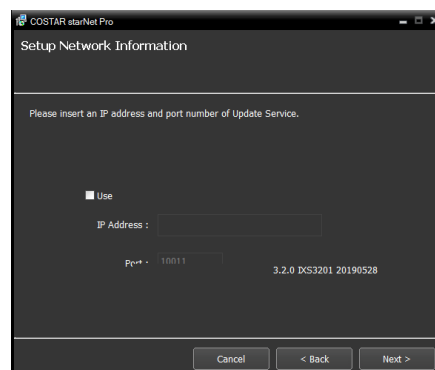
5. Select a service to install and click **Next**.



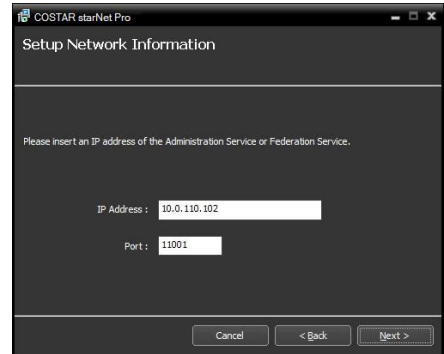
6. Designate the folder path to install the services. Clicking the **Disk Cost...** button shows the available and required disk space for each hard disk drive for the installation. Then click **Next**.



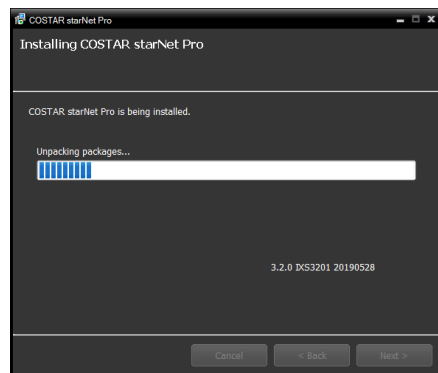
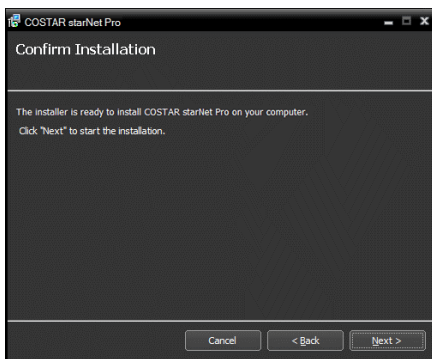
7. If you use the update service, it is required to enter the IP address and port number of the update server when installing the failover service. You can change the settings in the Service Manager program after completing installation.



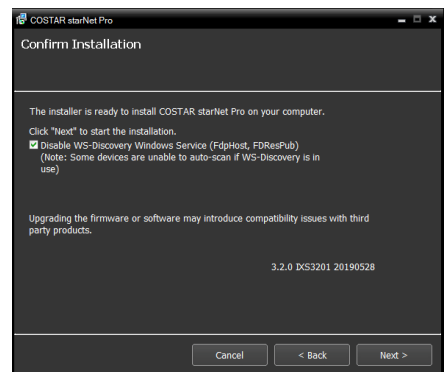
8. It is required to enter the IP address and port number of the administration server. You can change the settings in the Service Manager program after completing installation if necessary. When the installation is complete, the failover service is connected to the administration service via the network if the both services are operating.



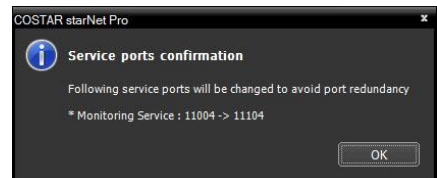
9. When the following screens appear, click Next.



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 COSTAR starNET Pro program cannot auto-scan devices using ONVIF™ Conformance protocol when scanning devices for device registration.

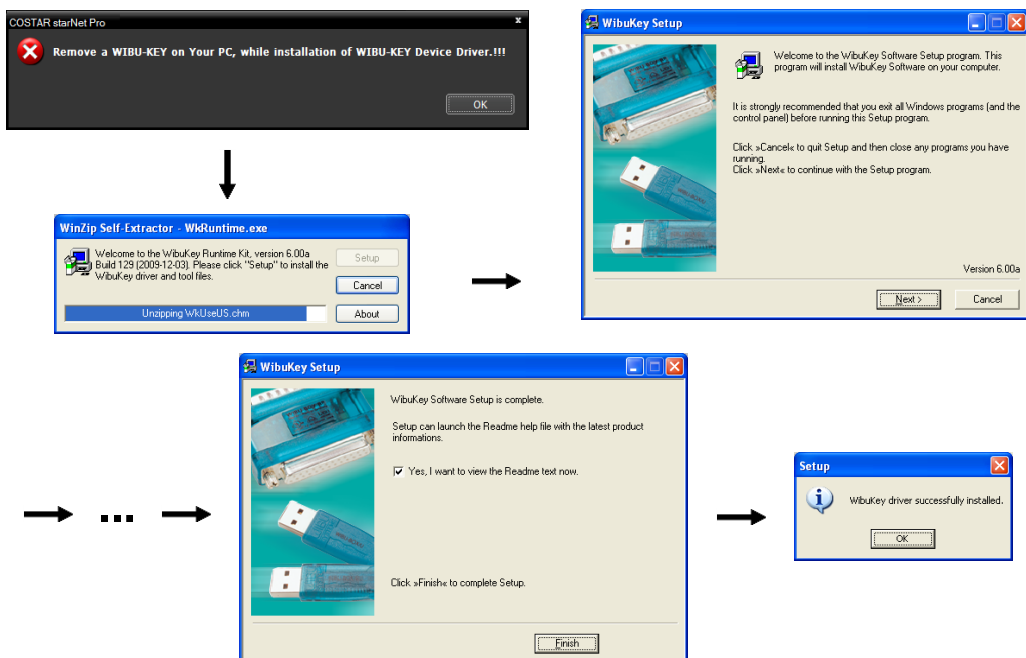


NOTE: The following screen appears when the port number of the service being installed is already in use, and the screen displays the port number that will be changed. The changed port number will be applied when the service starts operating after installation.



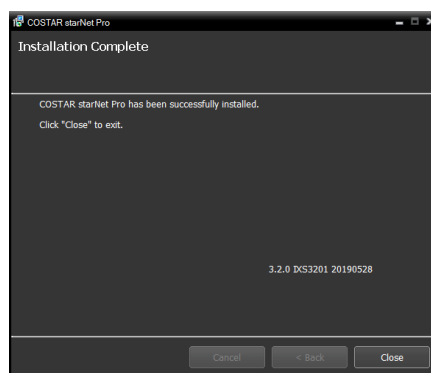
NOTE: .NET Framework and the Visual C++ Runtime Libraries are installed automatically, and it may take some time. This installation step will be skipped if the programs are already installed on your computer.

10. In order to use the WIBU Key license authentication, select Install Wibukey Driver and click Next. Disconnect the WIBU-Key from the server if a WIBU-Key is connected. Then install the WIBU-Key device driver following the instructions.



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

NOTE: After successfully installing WIBU-Key device driver, select whether to restart the PC.



12. Connect WIBU-Keys to the failover server.

20.2 Uninstall

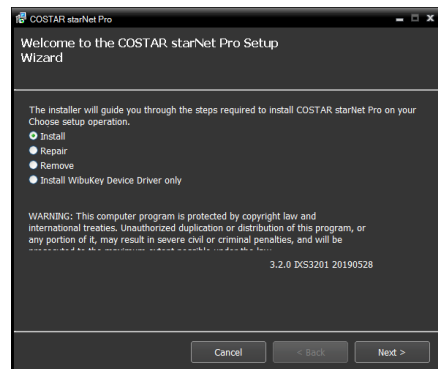
1. Stop running the services and COSTAR starNET Pro program first.

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

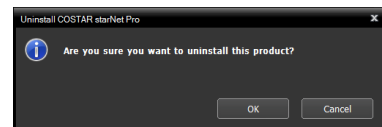
CAUTION: The COSTAR starNET Pro software should be uninstalled following the procedures below. If you delete the installation folder manually, the COSTAR starNET Pro software cannot be uninstalled or reinstalled.

2. Go to the Start Menu, and click COSTAR starNET Pro. Click Uninstall COSTAR starNET Pro.

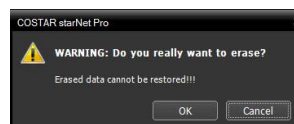
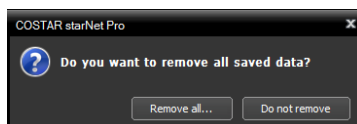
NOTE: You can uninstall the software by using the software CD. Insert the software CD in the server or Client PC and run the *setup.exe* file. Select *Remove* and click *Next*.



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.

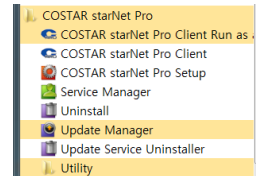


NOTE: The deleted data cannot be restored once the data is deleted.

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

20.3 Running Services

When the service is installed, the service runs automatically. You can also start or stop running the service manually. Go to the Start Menu → Click COSTAR starNET Pro → Run the Service Manager program.



Administration failover service

 A screenshot of the COSTAR starNet Pro Service Manager window. The title bar is "COSTAR starNet Pro Service Manager" with buttons for Operation, Option, and Log. The table shows the Administration Failover Service is Working with 0% CPU Usage and 20188 KB Memory Usage.

Service	Status	CPU Usage	Memory Usage
Administration Failover Service	Working	0 %	20188 KB

Monitoring failover service

 A screenshot of the COSTAR starNet Pro Service Manager window. The title bar is "COSTAR starNet Pro Service Manager" with buttons for Operation, Option, and Log. The table shows the Monitoring Failover Service is Working with 0% CPU Usage and 14104 KB Memory Usage.

Service	Status	CPU Usage	Memory Usage
Monitoring Failover Service	Working	0 %	14104 KB

Video wall failover service

 A screenshot of the COSTAR starNet Pro Service Manager window. The title bar is "COSTAR starNet Pro Service Manager" with buttons for Operation, Option, and Log. The table shows the Video Wall Failover Service is Working with 0% CPU Usage and 24316 KB Memory Usage.

Service	Status	CPU Usage	Memory Usage
Video Wall Failover Service	Working	0 %	24316 KB

Streaming failover service

 A screenshot of the COSTAR starNet Pro Service Manager window. The title bar is "COSTAR starNet Pro Service Manager" with buttons for Operation, Option, and Log. The table shows the Streaming Failover Service is Working with 0% CPU Usage and 148580 KB Memory Usage.

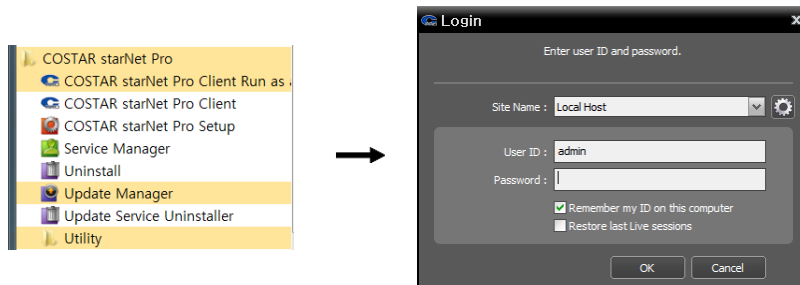
Service	Status	CPU Usage	Memory Usage
Streaming Failover Service	Working	0 %	148580 KB

Check the status of service. If the service is not listed as **Working** under **Status**, start the service manually.

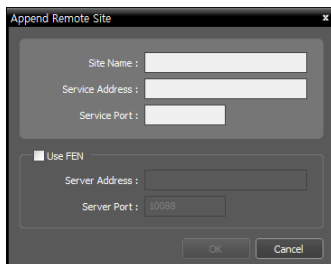
20.4 Log In

You are required to log in to the administration service as follows when running the Setup and Client programs.

Go to the **Start Menu** → Click **COSTAR starNET Pro** → Run the **COSTAR starNET Pro Setup** program and enter login information.



- **Site Name:** Select the administration service to connect to from the list. You can add other administration services to the list or modify information about the administration service in the list by clicking the button at the right.



- **Site Name, Service Address, Service Port:** Designate the name of the administration service and enter the IP address and port number of the administration server (default: 11001/11000).

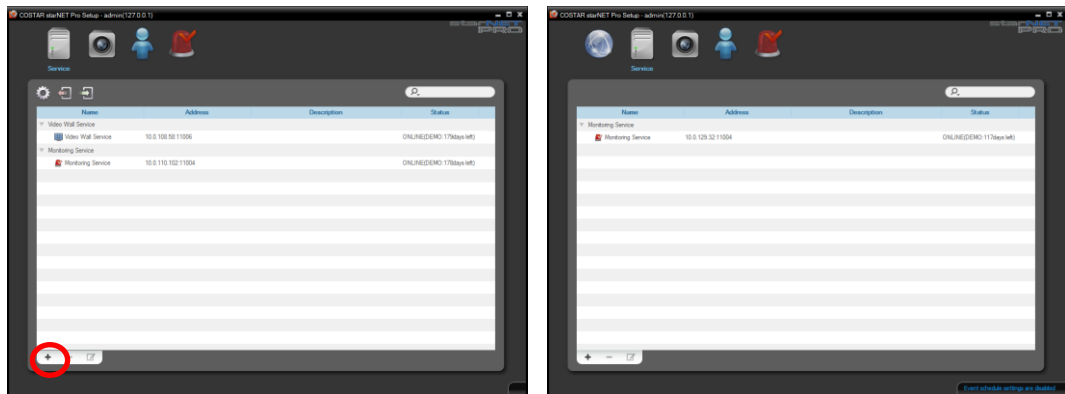
- **User ID, Password:** Enter your user ID and password. The default user ID is **admin** and default password is **12345678**. You can change the user ID and password in the User menu.
- **Remember my ID on this computer:** Check the box if you want to save your ID for logging on.
- **Restore last 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).

20.5 Registering Services

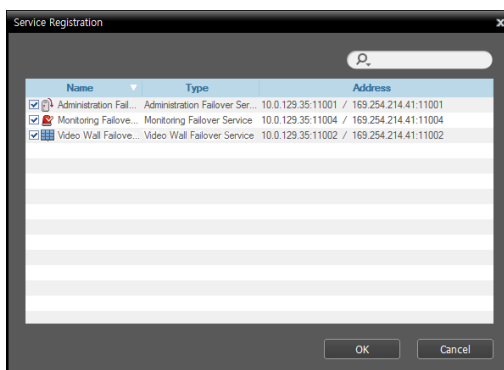
NOTE: Check that a monitoring, or video wall service is registered. It is available to register each service's failover service only when the service is registered.

Go to the **Start Menu** → Click **COSTAR starNET Pro** → Run the **COSTAR starNET Pro Setup** program and enter login information.

Select the **Service** menu, and then register administration, monitoring, or video wall failover service following the procedures below.

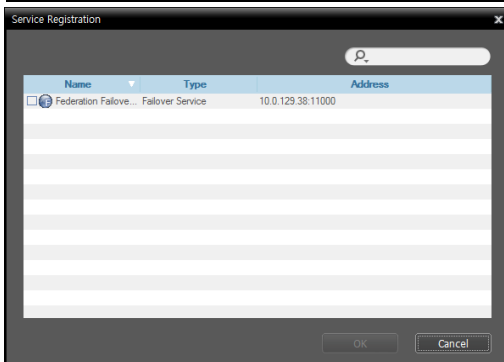


1. Click the **+** button at the bottom. The **Service Registration** window appears, and a list of available services is displayed with information about each service.

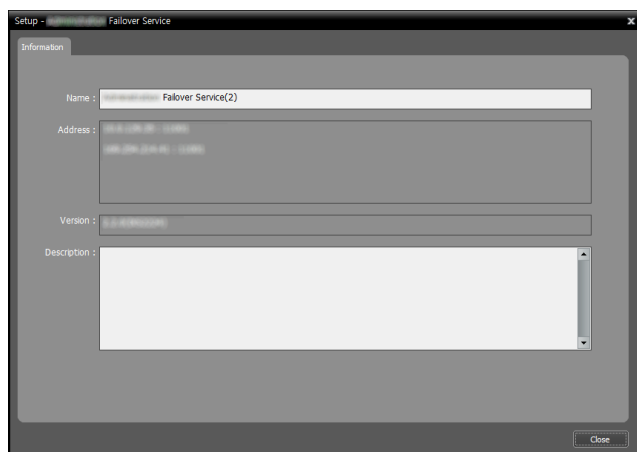
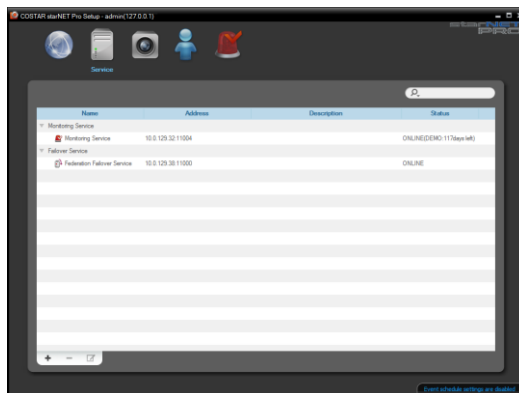
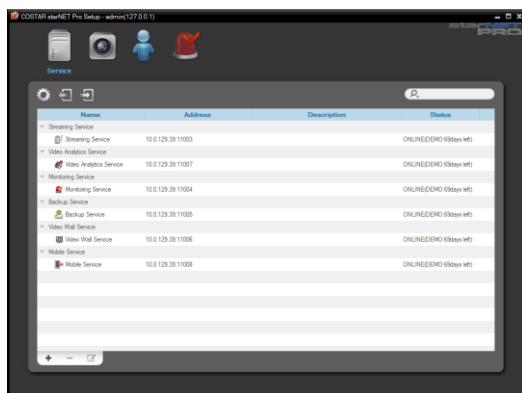


- **Name:** Displays services that are currently connected to the administration service via the network.
- **Type:** Displays the service type.
- **Address:** Display the IP address and port number of each server.

NOTE: Only the services of which the administration server information (*Service Manager* → *Option* → *Server Option*) matches the currently connected administration server are available.



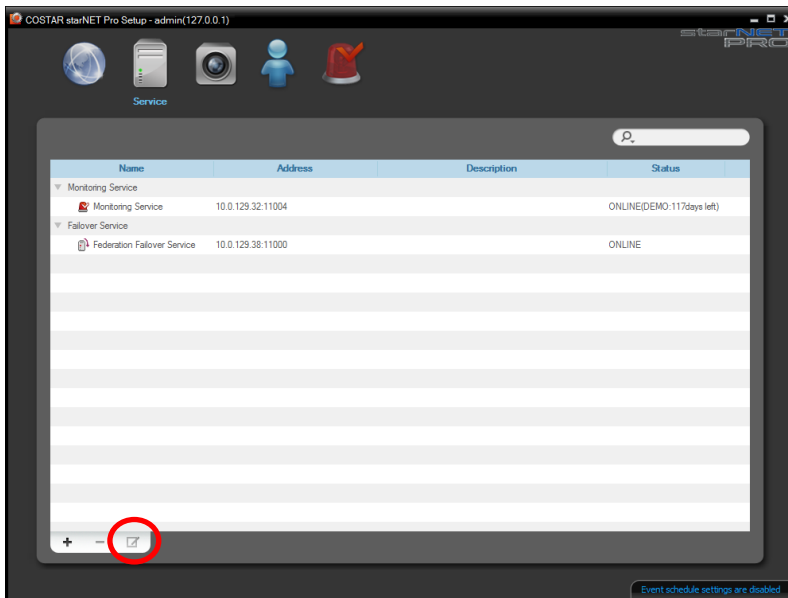
2. Select administration, monitoring, or video wall failover service to register on the COSTAR starNET Pro system, and the selected services are displayed in the service list.



Select a failover service and click the ☒ button at the bottom. You can change the failover service's name.

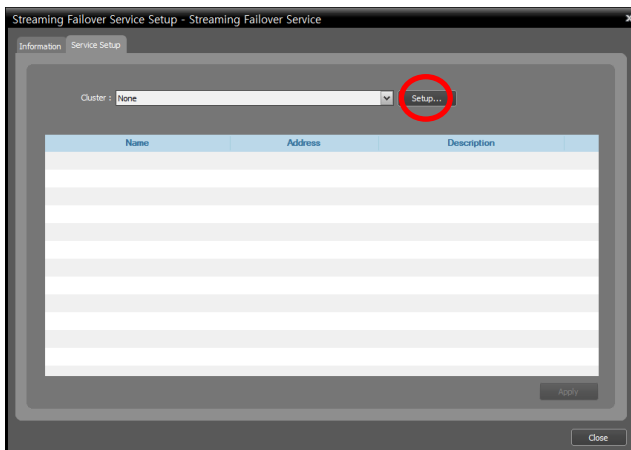
20.6 Failover Service Configuration

You are required to configure the streaming failover service and video wall failover service for the services to operate properly. Setting up and operating the COSTAR starNET Pro Client program of the COSTAR starNET Pro failover software is identical to that of the COSTAR starNET Pro software.



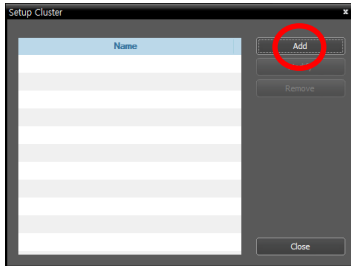
Select a failover service and click the ☒ button at the bottom.

Streaming Failover Service

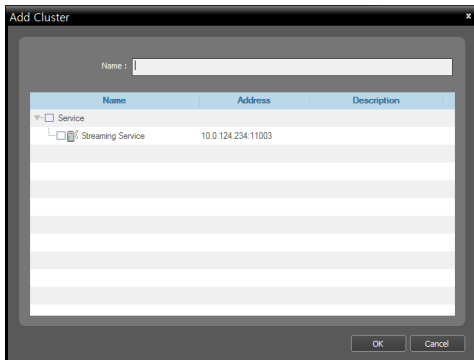


Click the Service Setup tab and click the Setup... button.





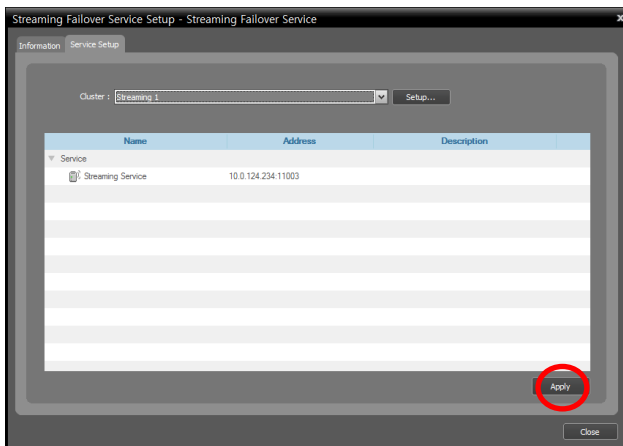
Click the Add button.



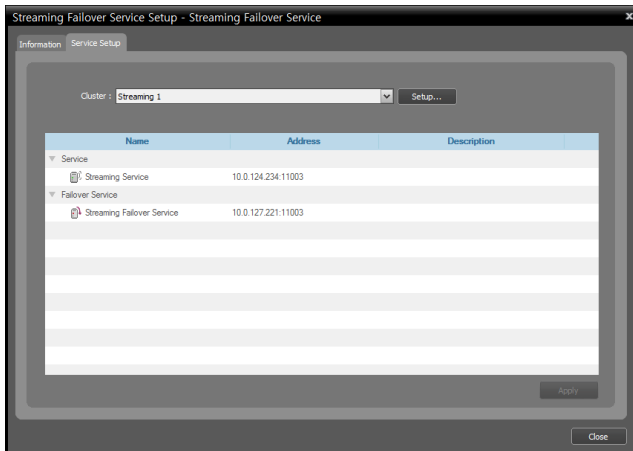
A list of available services is displayed. You can cluster more than one streaming service for one failover service. Select streaming services to cluster.

Enter the cluster name and click the OK button.

NOTE: Only the services of which the administration server information (*Service Manager* → *Option* → *Server Option*) matches the currently connected administration server are available.

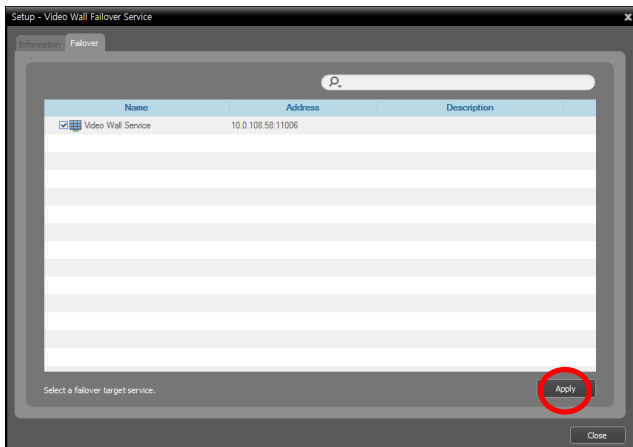


A list of clustered services is displayed. If you have added more than one cluster, you can choose from the Cluster drop-down list. Click the Apply button.



Whenever any problem occurs in one of the listed streaming services, the failover service will replace the streaming service.

Video Wall Failover Service



Click the Failover tab and select a video wall service. It is not allowed to cluster video wall services, and the failover service will replace only one service.

Click the Apply button.

NOTE: Only the services of which the administration server information (*Service Manager* → *Option* → *Server Option*) matches the currently connected administration server are available.

Chapter 21 — VA Box

You can search video analysis information and analyze with graphs and images by using devices connected to VA Box. Video Analysis Report is supported in the VA Box panels (max. 3). Select **New Tab** from the menu and click **VA Box** to add a tab.

21.1 Connection and Search

1. Select a device from the devices connected to VA Box on the **Site** list, and drag and drop on the device VA Box panel. When connected, the name of the device is displayed on the top right and top center of the panel, and time search, VA function and device select options are activated at the bottom left.







2. Select a VA function (People Counting, Queue Management, Heat Map) page from the bottom left combo box.
3. Select a VA device and time range, and click **Search** button (🔍) to see the video analysis data as a graph and image.
4. Drag and drop other device on the VA Box panel to change the device. Select **Logout** from the **System** menu to disable the device.

Report Toolbar



Use the toolbar at the bottom of the panel to search a specific VA report.

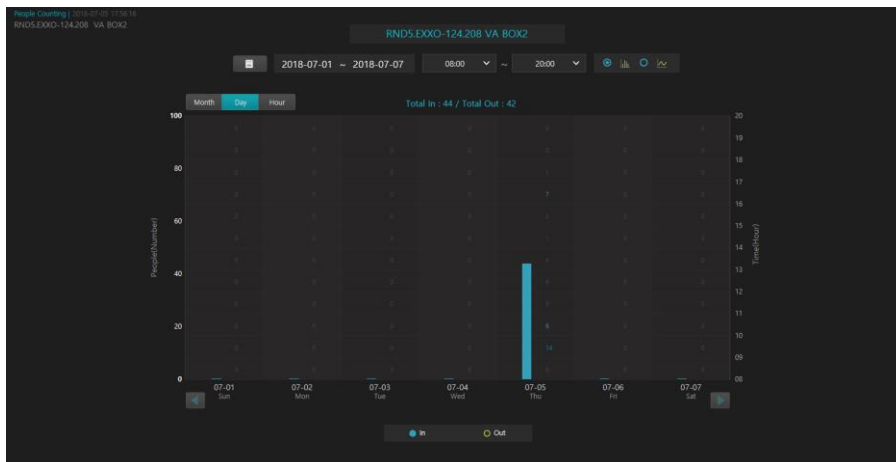
- **From, To:** Set date and time for VA report search. Type specific date and time, or select **First** or **Last** option. Click **Today**, **1 week**, **1 month**, **6 months** or **1 year** to adjust the **From** and **Last** interval.
-  **People Counting** (VA function): Select a VA function page.
-  **VABOX1** (Select VA device): Select a VA Box device.
-  **(Full Screen)**: Displays the report panel in full-screen format.
-  **(Save)**: Saves the data of the report page as an excel (.csv) or image file.








Page Information

People Counting | 14-04-2017 13:48:11
EXXO VA BOX2

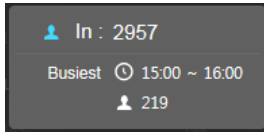
- Current VA page type
- Current time of the VA report search
- The name of the device connected to VA Box
- The name of VA Box device

21.2 People Counting



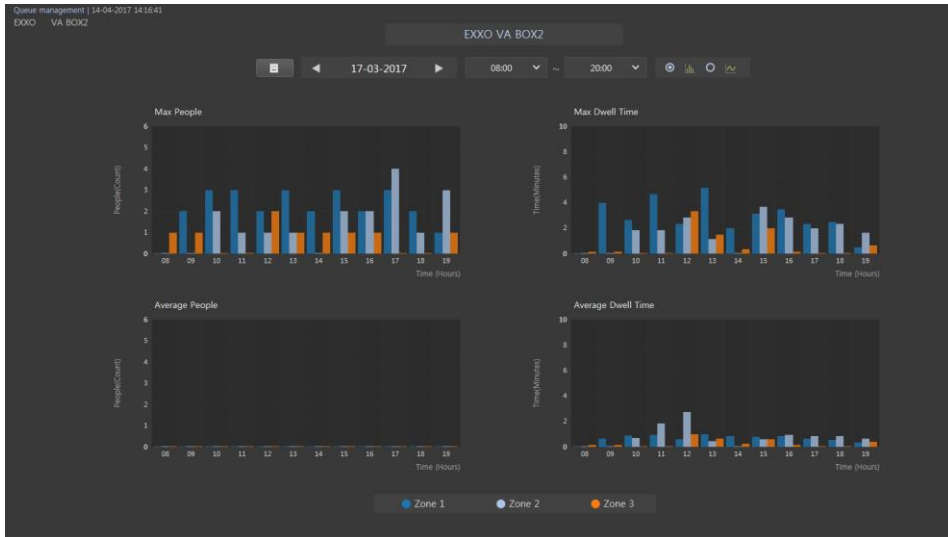
- **Total In/Total Out:** Displays the total number of In/Out counts of the current page period.
-  : Select a specific date from the calendar.
- **Search Period:** Displays the period shown on the current page.
-  : Select between a bar graph and a line graph.
-  : Select the X-axis value (Month, Day, Hour). For the Hour unit, select from 15 minutes, 30 minutes and 1 hour.
-  : Select from 08:00~23:00, 24 Hour, AM, PM to display people counting of the specific time zone according to the selected time unit, as a bar or line graph. The number of people is displayed on the graph.
- **People(Number):** The left Y-axis shows the value of the bar/line graph.
- **Time(Hour):** The right Y-axis shows the time of numbers indicated on the graph.
-  : Move backward by 1 year (Month), 1 week (Day), 1 day (Hour) according to the search period unit.
-  : Move forward by 1 year (Month), 1 week (Day), 1 day (Hour) according to the search period unit.
-  : Select between In/Out to see each data.

- **Graph Tooltip:** Hovering the mouse over the bar/line graph displays the Tooltip information.



- In : 2957 : Indicates the number of people of the selected data.
- Busiest : Indicates the busiest time of the selected data.
- : indicates the number of people during the busiest time of the selected data.

21.3 Queue Management



- : Select a specific date from the calendar.
- : Move to the date with the previous data.
- : Move to the date with the later data.
- **Search Date:** Displays the date of the current page.
- 08:00 ~ 20:00 : Selecting start time and end time displays the graph of the specific time range.
- : Select between a bar graph and a line graph.
- Zone 1 Zone 2 Zone 3 : Select a specific zone to see the data.

🕒 13:00 ~ 14:00		🕒 11:00 ~ 12:00	
Zone 1	4	Zone 1	08m 00s
Zone 2	3	Zone 2	04m 00s
Zone 3	4	Zone 3	02m 00s

- **Graph Tooltip:** Hovering the mouse over the bar/line graph displays the Tooltip information.
- 13:00 ~ 14:00 : Displays the time of the selected data.
- 4 / 08m 00s : Displays the number of selected people and the dwell time for each zone.

21.4 Heat Map



- **Date/Time Search:** Selecting the start/end date and start/end time displays a corresponding heat map image on a still image and thumbnail images.
- **Edit Zone:** Edit a heat map zone. Check the box to define the zone with a mouse click. Specify the area on the still image with the left mouse button, and click the first point or the right mouse button to complete defining the zone. Press **Delete** to cancel the previous point while specifying the area, and press **Esc** to cancel the entire specification.
- **Dewarping:** This button is activated when the still image is a fisheye image. Click the button for the fisheye dewarping on the still image. Use the quick control by clicking the **Ctrl** + mouse button when the dewarping is deactivated.
- **Reset:** Resets the still image with data from the area displayed in the date/time search and changes to the area set in NVR.
- **Day/Hour:** Displays the unit of a single thumbnail.
- **Still Image:** Displays the latest image of the camera connected to the selected VA Box.
- **Thumbnail Images:** Displays images divided by a regular time unit, according to the selected date/time above. Select a thumbnail to enlarge the thumbnail image as a still image. Change the time unit or click the **Reset** button to change the still image back to the specified time range. To change the still image back to the specified time range, click the selected thumbnail.
- **Opacity:** Adjusts the opacity of the heat map image.
- **Level:** Displays values in contour form on the heat map image.
- **Color Schema:** Displays a color schema of a heat map. 4 kinds of color schema are available.

Chapter 22 — Person Match Service

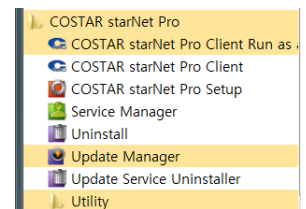
The person match service provides the search for a specific person tracing.

NOTES:

- The person match service allows searching only when a video has been recorded under the recording service or on a recorder in the case of the Recorded Footage mode.
- In the case of the Pre-processed Footage mode, Video Analytics service (IDLA) and database must be configured with saved meta data for searching.
- You can select the Person Match service mode in the *System Setup* menu.
- The minimum size of a person for detection should be over 48 x 96 pixel.

22.1 Running Services

When the service is installed, the service runs automatically. You can also start or stop running the service manually. Go to the Start Menu → Click COSTAR starNET Pro → Run the Service Manager program.



Person Match service

A screenshot of the COSTAR starNet Pro Service Manager window. The window has a title bar and three tabs: Operation, Option, and Log. The Operation tab is active, displaying a table with the following data:

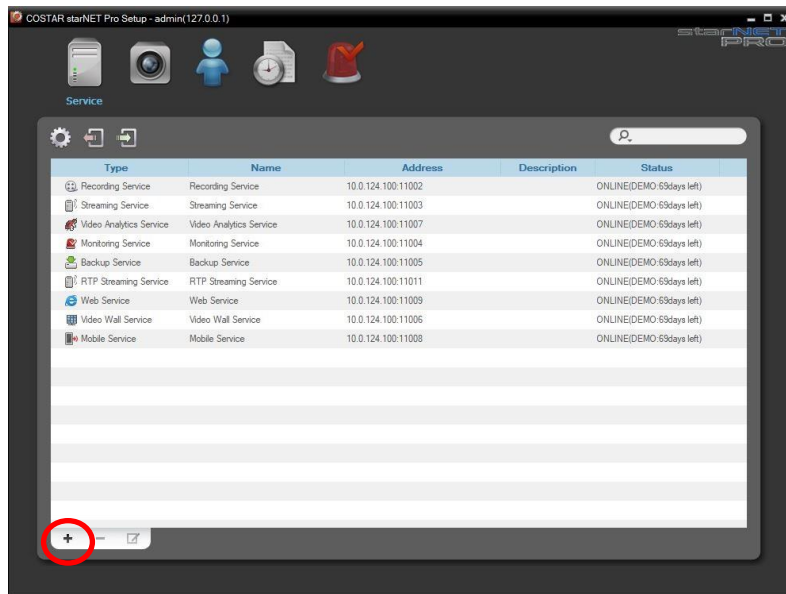
Service	Status	CPU Usage	Memory Usage
Person Match Service	Working	0 %	1037140 KB

Check the status of service. If the service is not listed as **Working** under **Status**, start the service manually.

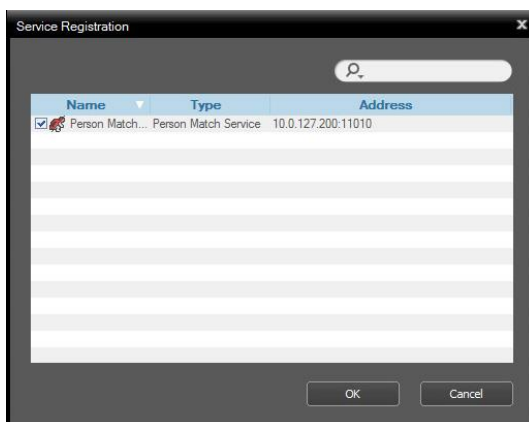
22.2 Registering Services

Go to the Start Menu → Click COSTAR starNET Pro → Run the COSTAR starNET Pro Setup program and enter login information.

Select the **Service** menu, and then register person match service following the procedures below.



Click the **+** button at the bottom. The **Service Registration** window appears, and a list of available services is displayed with information about each service.

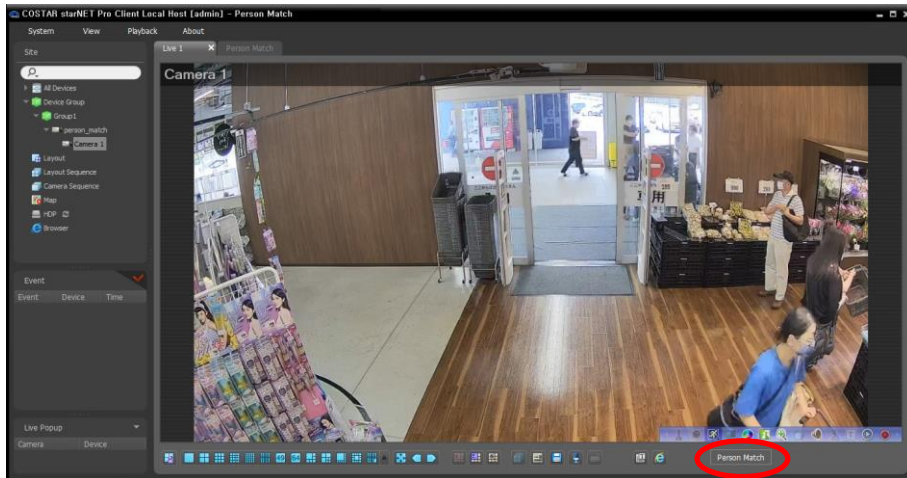


- **Name:** Displays services that are currently connected to the administration service via the network.
- **Type:** Displays the service type.
- **Address:** Display the IP address and port number of each server.

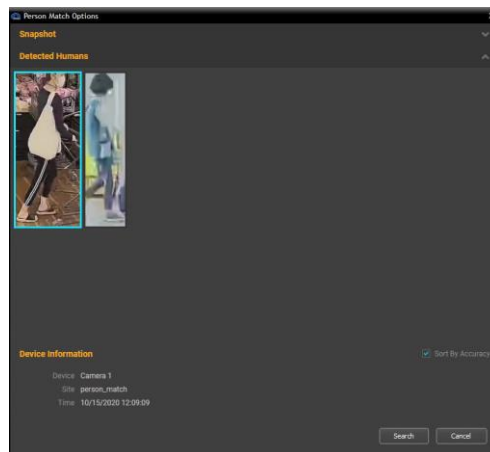
NOTE: Only the services of which the administration server information (*Service Manager* → *Option* → *Server Option*) matches the currently connected administration server are available.

22.3 Searching

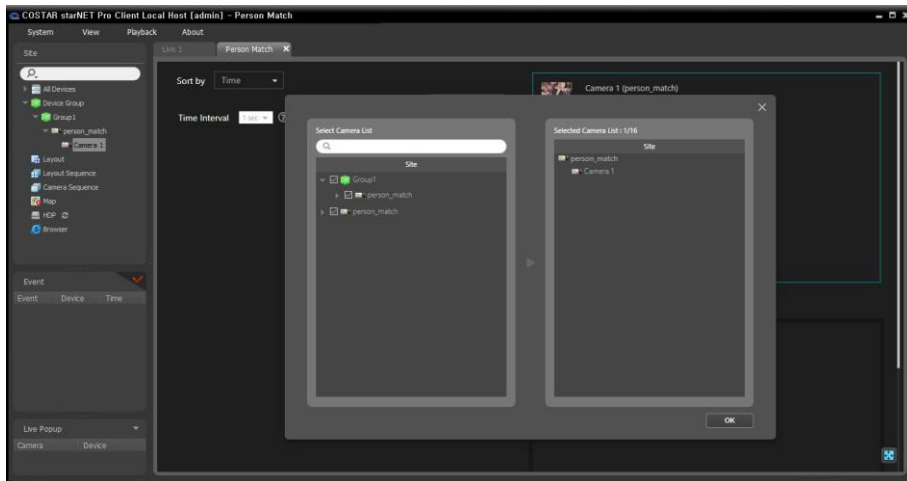
1. Select a device from the Live tab, Play tab or DVR Search tab and click the **Person Match** button on the right bottom.



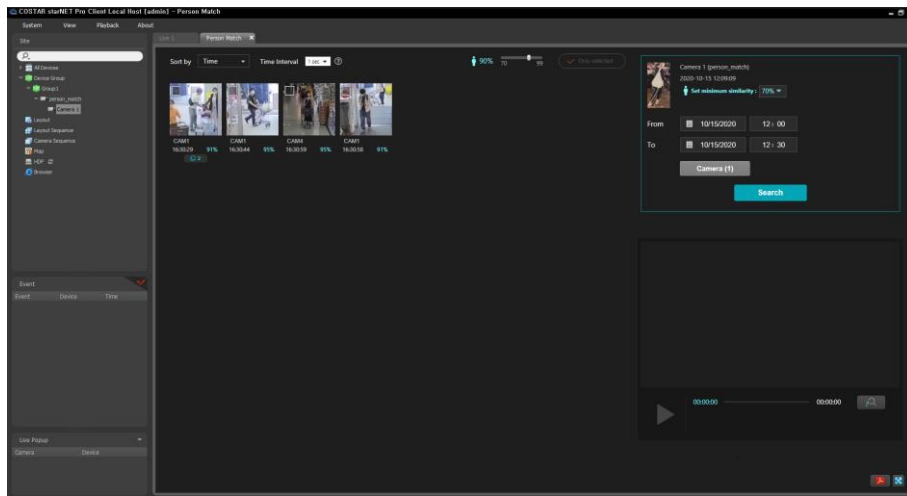
2. Select a person to trace and click the **Search** button.



- Click the Camera button to select cameras to search.



- Select the time range for search and click Search to display the search results.



- Sort by: Select the sort criteria.
- Time Interval: Select the time interval for images to display.
- Similarity Bar: Set the minimum similarity by adjusting the similarity bar.
- Set minimum similarity: Select the minimum similarity for searching.
- Only selected: Displays the selected image only.
- (Move to): Turns to the Play tab and moves to the time of the current playback device.
- (Save as PDF): Saves the current tab as a PDF file.
- (Full Screen): Displays the current tab in full screen.
- (Save as JPG): Saves the selected image as a JPG file (This option is displayed only when Only selected is clicked).
- (Save as a Clip): Saves the selected image as a clip (This option is displayed only when Only selected is clicked).

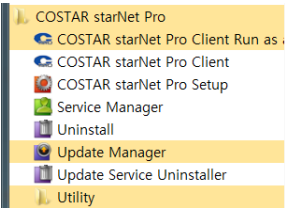
Chapter 23 — RTP Streaming Service

RTP Streaming service relays video and audio data of devices connected to the streaming service using the RTSP protocol.

NOTE: RTP Streaming service is available when devices are registered under the streaming service.

23.1 Running Services

When the service is installed, the service runs automatically. You can also start or stop running the service manually. Go to the Start Menu → Click COSTAR starNET Pro → Run the Service Manager program.



RTP Streaming service

A screenshot of the 'COSTAR starNet Pro Service Manager' window. It features a table with four columns: 'Service', 'Status', 'GPU Usage', and 'Memory Usage'. The table lists several services, all of which are in a 'Working' status. The 'RTP Streaming Service' is specifically highlighted in the list.

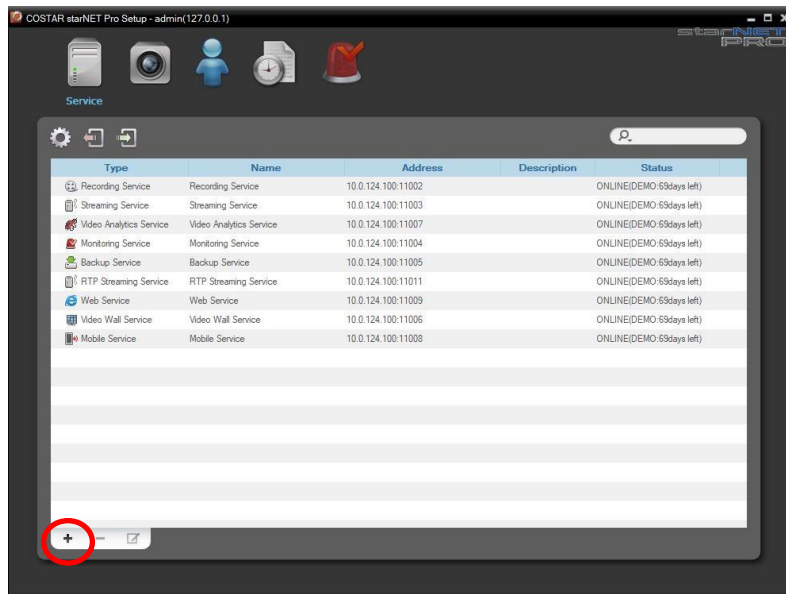
Service	Status	GPU Usage	Memory Usage
Administration Service	Working	0 %	736 KB
Processing Service	Working	0 %	888 KB
Streaming Service	Working	0 %	5087 KB
Monitoring Service	Working	0 %	2184 KB
Video Analysis Service	Working	0 %	84632 KB
RTP Streaming Service	Working	0 %	94480 KB
Person/Plate Service	Working	0 %	12688 KB

Check the status of service. If the service is not listed as Working under Status, start the service manually.

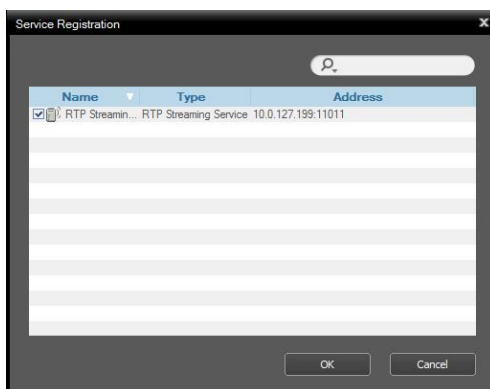
23.2 Registering Services

Go to the Start Menu → Click COSTAR starNET Pro → Run the COSTAR starNET Pro Setup program and enter login information.

Select the **Service** menu, and then register RTP Streaming service following the procedures below.



Click the **+** button at the bottom. The **Service Registration** window appears, and a list of available services is displayed with information about each service.



- **Name:** Displays services that are currently connected to the administration service via the network.
- **Type:** Displays the service type.
- **Address:** Display the IP address and port number of each server.

NOTE: Only the services of which the administration server information (*Service Manager* → *Option* → *Server Option*) matches the currently connected administration server are available.

23.3 RTSP URL Rule

RTSP URL rule of RTP Streaming service is as follows:

`rtsp://[RTP Streaming Service IP]:[rtsp port]/idis?trackID=[device identifier number]& streamID=[stream index]&audio=[0 or 1]`

1. **RTSP Service IP:** Enter the IP address of the RTP Streaming service.
2. **RTSP Port:** Enter the RTSP port number. The default RTSP port is 554, and the port number can be edited in **Service Manager**.
3. The necessary parameters for RTSP URL are as the following:
 - **trackID=[device identifier number]:** Device identifier number displayed in **Configuration Tools**.
4. The additional parameters for RTSP URL are as the following:
 - **streamID=[stream index]:** Device stream number (Default: 1)
 - **audio=[0 or 1]:** Audio request option (0: no request, 1: request)
NOTE: For G726, the number behind the codec name indicates the Bitrate value.
5. The codec supported by the RTP Streaming service is as the following:
 - Video: H.264, H.265
 - Audio: G711U(64K), G711A(64K), G726(16K, 24K, 32K, 40K)
NOTE: The number behind the audio codec name indicates the Bitrate value.
6. The parameters (trackID, streamID, audio) of RTSP URL are not case-sensitive.

23.4 RTSP Client Precautions

- RTP Streaming service only supports TCP connection. The player which plays the video/audio data received from RTP Streaming service should have RTSP connection after the TCP setup.
- When connecting RTSP via RTP Streaming service in Client, the account information (COSTAR starNET Pro user account information) is necessary. The selected account must satisfy the conditions regarding access authority, real-time monitoring authority, accessible time and accessible IP in order to connect to the device.
- RTP Streaming service saves the codec information suitable for trackID and streamID, and utilizes them for RTSP connection. trackID and streamID for the initial RTSP connection have no saved codec information, therefore, the default codec information (H.265, G711U) is saved and used for the RTSP connection. If the received codec information is different from the saved one, RTP Streaming service updates the codec information and disconnects RTSP for Client's RTSP reconnection.



For example, when the actual video codec of trackID and streamID is H.264 for the initial RTSP connection, RTP Streaming service uses the default codec information, H.265. However, RTSP is disconnected after updating to H.264, which is the received video codec information. When the Client attempts connection with the same trackID and streamID, RTSP connection is successfully completed with the correct codec information (H.264 in this case).

Chapter 24 — VA Dashboard

The information of violations and events detected from a VA device is displayed in a dashboard format. Up to 4 sites can be searched and displayed with results. Select **New Tab** from the **System** menu and click **VA Dashboard** to add a tab.

24.1 VA Dashboard Screen



- ① **Page Name:** Displays the current page name. Click the  (edit) button or double-click to edit the name. The page name is maintained until the next login.
- ② **Search Range Setup and Menu:** Set up the search range selecting between the preset or user custom options. Click the  (menu) button to use actions related to the current page.
- ③ **Violations:** Displays violation information within the search range and a graph visualizing the violation trend.
- ④ **Events:** Displays detected events and items within the search range as a graph and a list.
- ⑤ **Site Panel Title Bar:** Displays the registered site name and setting buttons of the site panel. When the site panel is folded, the summary of violation information is displayed.

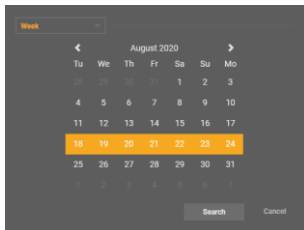
NOTE: You can adjust the size of each section by dragging the size adjust bar between the violations and events sections.

Search Range

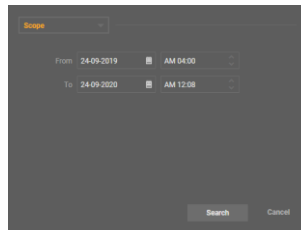
You can set the scope of search between the preset mode and the user custom mode.



- **Today:** Searches for today's data.
- **This Week:** Searches for this week's data including today. You can select the starting day of a week from **System** → **Setup** → **System** → **Date/Time**.
- **This Month:** Searches for this month's data including today.
- **Custom:** A user can select the search range. Select from the calendar by Day, Week, Month, or enter From/To range under Scope.



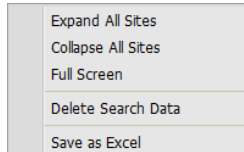
Search by Week



From/To Search

Page Menu

Functions which can be applied to the page or the whole site panel are provided.



- **Expand All Sites:** Expands all of site panels.
- **Collapse All Sites:** Collapses all of site panels.
- **Full Screen:** Displays the current page in full screen mode.
- **Delete Search Data:** Deletes the search data of all site panels.
- **Save as Excel:** Saves violation and event information of all site panels as an excel file.

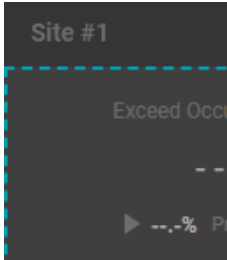
Site Panel Toolbar

Actions and settings of the site panel can be controlled.

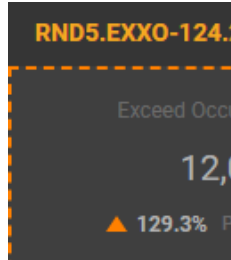
- (Refresh): Reloads data of the site panel.
- (Stop Search): Stops the data search. Search results before the pause are displayed on the panel.
- (Save as Excel): Saves violation and event data as an excel file.
- (Delete Search Data): Deletes all search results displayed on the site panel.
- (Unregister Site): Disconnects the registered site.
- (Settings): Configure the site panel settings.
- (Collapse/Expand): Collapses or expands the site panel.

24.2 Registration and Search

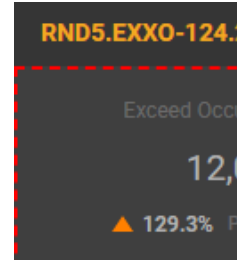
1. Select a device from the **Site** list and drag to the device site panel. Depending on whether or not a site can be registered, the border color is displayed in the site panel as the following.



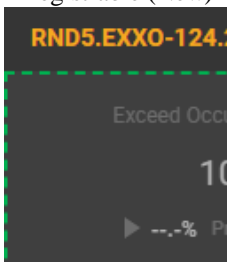
Registrable (New)



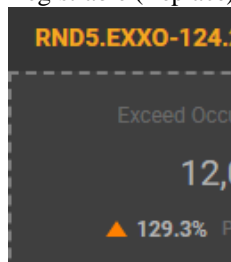
Registrable (Replace)



Unable to Register



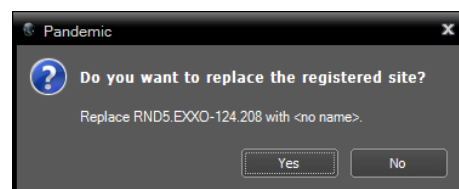
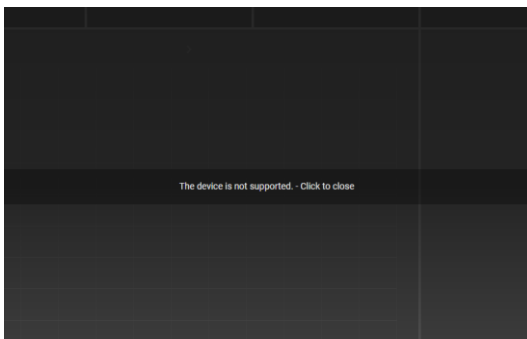
Register while Searching





Same Site or Re-register


2. If you drag and drop a site which cannot be registered, a notifying message pops up on the site panel. If you drop a registrable site on the panel with already registered site, a message pops up which asks if you would like to replace.

NOTE: If the panel is during search or attempts to register the same site, the action is ignored.




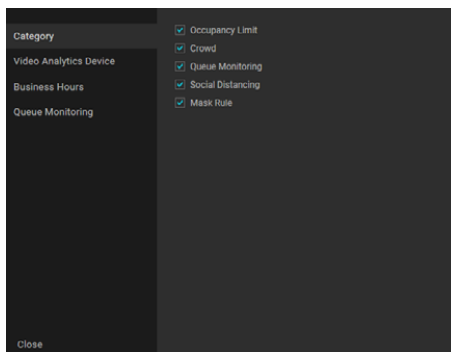
3. When a site is registered on the site panel, the site name is displayed and the  (Unregister Site) button and the  (Settings) button are activated.

NOTE: If more than one site are available, the search section is activated.

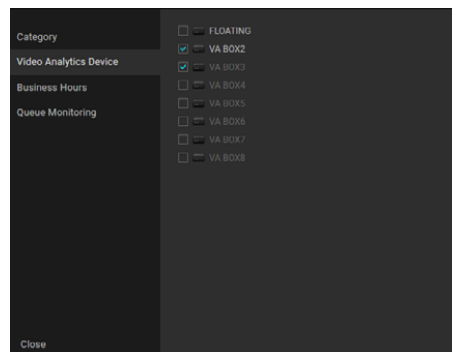
4. Select the scope of search to start data search. Select from Today, This Week, This Month or click Custom to designate the search range and click Search. The search range is displayed on the left. If no data is available within the search range, the “There is no video analytics data” message is displayed on the site panel.
5. Once the search is complete, a graph illustrating violation/event information and violation trend.
6. Click the  (Unregister Site) button to disconnect the registered device from the site panel.

24.3 Site Panel Setup

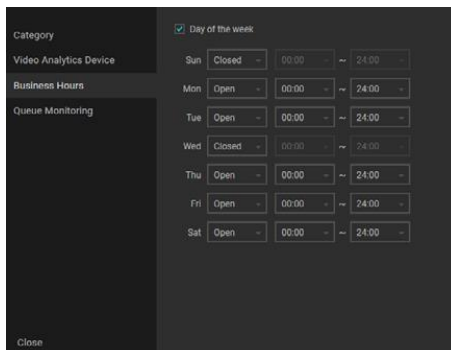
Configure the site panel settings. Click  (Settings) from the site panel toolbar to bring up the setup window.



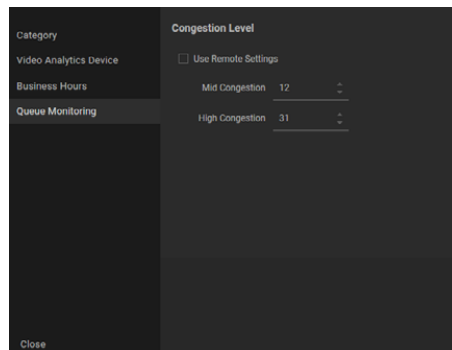
Category



Video Analytics Device



Business Hours



Queue Monitoring

- **Category:** Select the data to display on the dashboard.
- **Video Analytics Device:** Select a video analytics device for data search.
- **Business Hours:** Set up the time range in which data is displayed. Select Day of the week to configure time for each day. Select Closed under the Day of the week option to exclude the selected day.
- **Queue Monitoring:** Set the medium or high congestion level for queue monitoring. Enabling Use Remote Settings will use the medium or high congestion level set on the recorder.

Violation

The violation (Exceed Occupancy Limit, Crowd Detections, Queue Monitoring, Social Distancing Violations, Mask Rule Violations) search results are displayed.

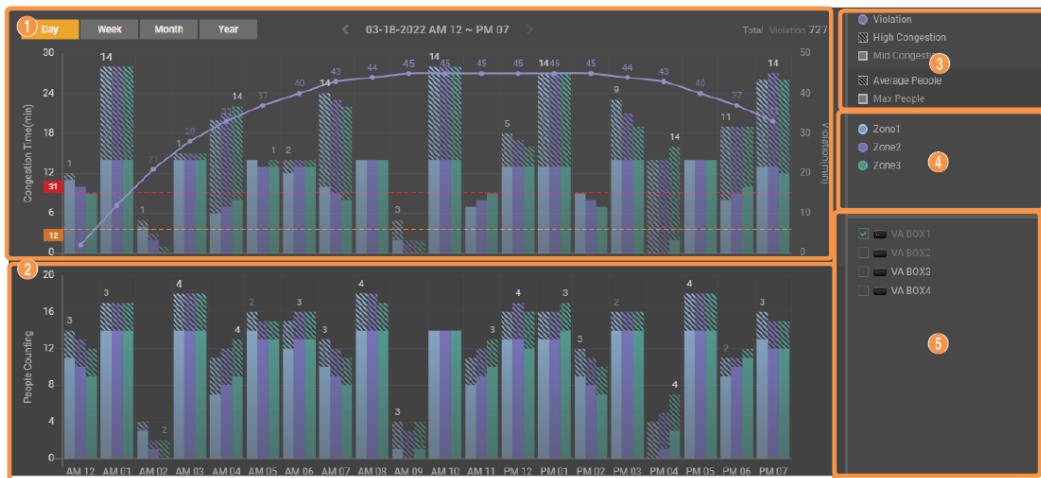


- ① Violation Data Tile: Displays the searched violation information according to categories. Clicking a tile displays each violation trend on the graph, and clicking the selected tile again displays the violation trend of all categories.
- ② Unit of Time: Select the value for the x-axis of the graph.
 - Day: Displays data for a day, up to 24 hours on an hourly basis.
 - Week: Displays data for a week, up to 7 days on a daily basis.
 - Month: Displays data for a month, up to 31 days on a daily basis.
 - Year: Displays data for a year, up to 12 months on a monthly basis.
- ③ Graph Time Range: Displays the time range of the data on the graph. Click to change the date/time of the graph.
- ④ Total Data Value: Indicates the total sum of values displayed on the graph for each category.
- ⑤ Legend: Indicates the data displayed on the graph. Click to toggle on/off.

NOTE: The legends for Crowd Detections, Social Distancing Violation and Mask Rule Violation are not displayed, since each has only one legend.
- ⑥ Video Analytics Device List: Displays data of selected video analytics devices on the graph.
- ⑦ Graph: Displays violation data and additional data as a bar or line graph.
 - The additional violation data are as the following:
 - Exceed Occupancy Limit: In/Out/Occupancy
 - Queue monitoring: Mid/High Congestion, Average/Maximum Number of People

Queue Monitoring Graph

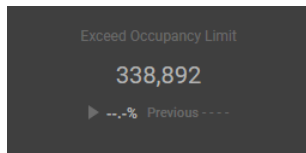
Queue monitoring simultaneously displays the congestion graph and the number of people graph.



- ① Congestion Data: Displays the time for crossing the congestion level.
 - Normal bar: Indicates medium congestion times.
 - Shaded bars: Indicates high congestion times.
 - Line: Indicates the violation time.
 - Orange/Red : Indicates medium/high congestion level. Dotted line is not displayed when Use Remote Settings is checked in Graph Settings > Queue Monitoring > Congestion.
 - Upper bar value: High congestion time represents the largest value among the zones at the same time. If High Congestion is disabled, the Medium Congestion Time represents the largest value.
- ② People Counting Graph: Displays the number of people data.
 - Normal bar: Indicates the average number of people.
 - Shaded bars: Indicates the maximum number of people.
 - Upper bar value: Indicates the highest average number of people among the districts at the same time. If the average number of people is disabled, the maximum number of people indicates the largest value.
- ③ Congestion/People Legend: Displays a legend for the Congestion/People Graph. Click to select whether or not to display each item.
- ④ Zone Legend: Indicates the area to display the Congestion/People Graph. Click to select an area to display on the graph.
- ⑤ Video Analytics Device List: Displays data of selected video analytics devices on the graph.

Violation Data Tile

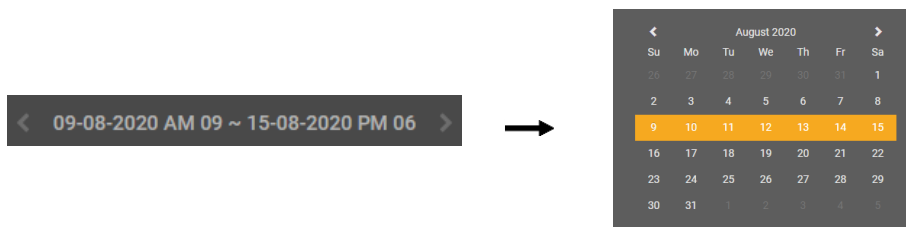
Information related to violation data is displayed.



- **Type:** Displays the type of violation.
- **Violation Value:** Displays the violation value within the search range.
- **Previous Value:** Displays the previous violation value. The search range is the same as the current search range.
- **Increase/Decrease Rate:** Indicates the increase or decrease rate between the previous and the current value.

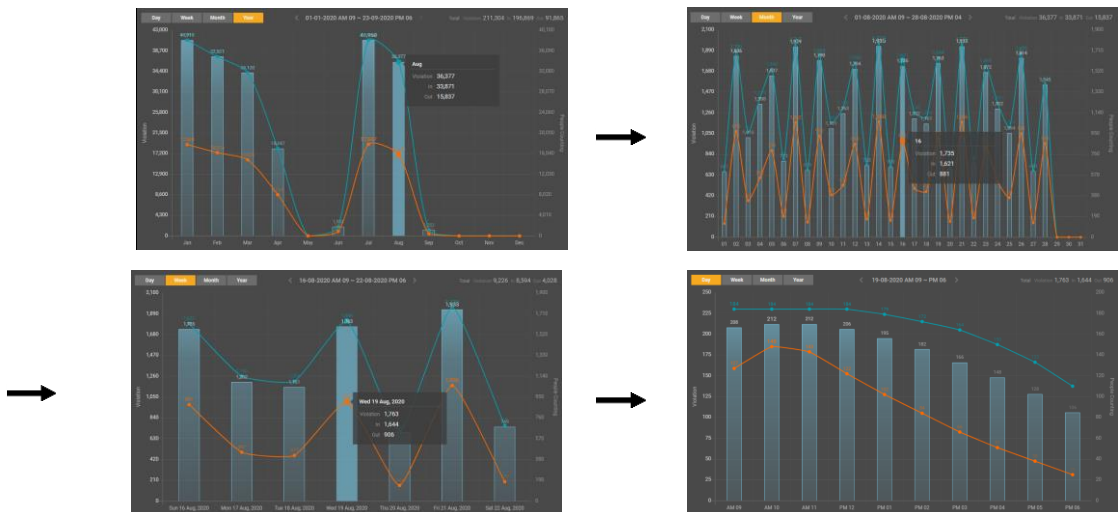
NOTE: Previous Value and Increase/Decrease Rate are not displayed in the case of *Custom* search range.

Time Shift of Graph



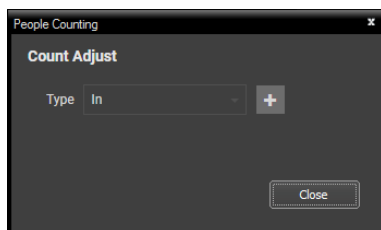
- Click the left/right of the time range or the ◀ / ▶ (Previous/Next) buttons on the right bottom of the graph to display the graph corresponding to the previous/next time range.
- Clicking the time range displays a calendar and selecting the time displays the corresponding data on the graph.
- Range of selection on the calendar differs according to the unit of time (day, week, month, year).
- Clicking the bar or line graph works as follows:
 - Left mouse click: Displays the graph in a narrower range of time unit. The graph including the time of the clicked bar or line is displayed.
 - Right mouse click: Displays the graph in a broader range of time unit. The graph including the currently illustrated range is displayed.

<Left Mouse Click on the Graph (Year – Month – Week – Day)>



NOTE: Right mouse click on the graph changes the time unit in the order of Day – Week – Month – Year.

People Count Adjust

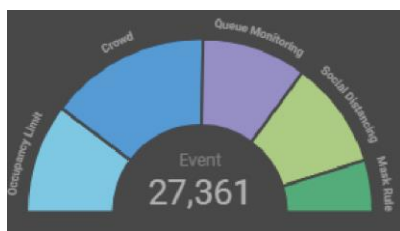


- In/Out data of Exceed Occupancy Limit can be modified from Count Adjust under Video Analysis.
- Select In or Out on the Count Adjust window and click the **+** button to increase the In/Out data.

Event






Violation events are displayed on the graph and list.

Event Chart



- The number of violation events for each violation type is displayed.
- Clicking the specific violation event activates the violation chart and the corresponding event items are displayed on the list.
- Clicking the selected violation event displays the total violation event items on the list.
- The number of selected violation event or the number of total events is displayed in the middle of the chart.
- The maximum number of events is 100,000.

Event List

Page 1  / 101		
Device	Time	
 VA BOX6	22-08 PM 11:59:18	
 VA BOX4	22-08 PM 11:58:49	
 VA BOX4	22-08 PM 11:57:18	
 VA BOX4	22-08 PM 11:56:09	

- Violation event items within the search range are listed (up to 100,000 items).
- 100 event items can be displayed on one page of list in maximum.
- The current page/total pages is displayed on the top of the list.
- Click the spin button on the right of the current page number to turn the page.
- Clicking the current page number to display the page list. Time indicates the time when the first event of the page occurred. Clicking the page item moves to the corresponding page.

Event List Tooltip

Social Distancing Violations	
Device	VA BOX2
Recorded Time	22-08-2020 PM 11:55:38
Camera	7, 8


- **Event Type:** Displays the violation type of the event.
- **Device:** Indicates the video analytics device where the event occurred.
- **Recorded Time:** Indicates the time when the event occurred.
- **Camera:** Displays the cameras related to the video analytics device where the event occurred.

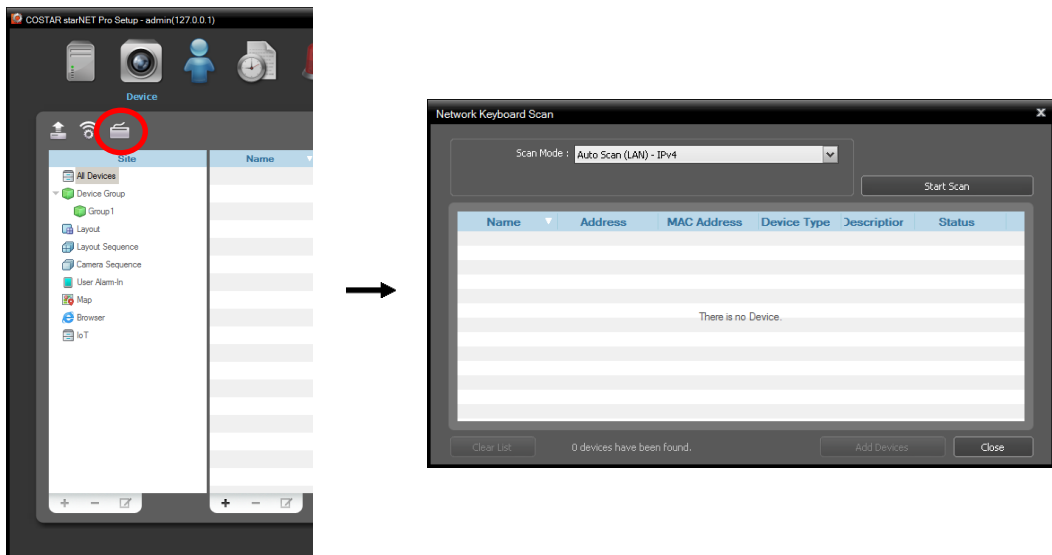
Chapter 25 — Controlling With a Network Keyboard

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

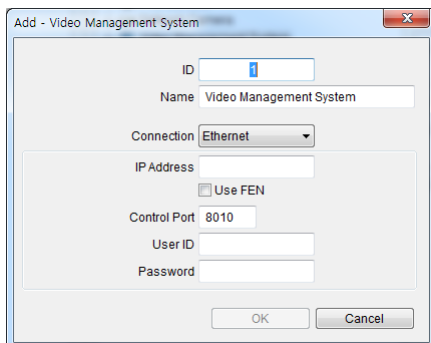
NOTE: This function is supported only for a specific model of a network keyboard which needs to be purchased separately.

25.1 Registering

1. Register the network keyboard on the administration service: Go to the Start Menu → Click COSTAR starNET Pro → Run the COSTAR starNET Pro 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 14.1 Registering Devices (p. 146) about registering a device.



2. Register the Client system on the network keyboard. Refer to the network keyboard's user 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 FEN.

- **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.



25.2 Connecting

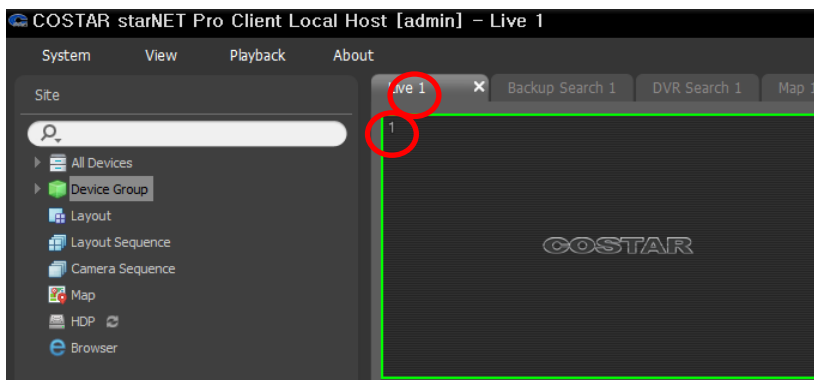
Network Keyboard LCD Display

Select Devices: 1

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

D001

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.

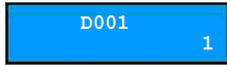


Select Devices:

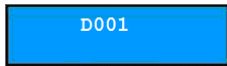
3. Pressing the **SHIFT** and **DEV** button at the same time releases the connection.

25.3 Operating

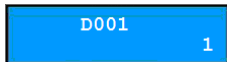
Monitoring Video



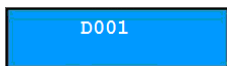
1. Press the Live tab ID on the network keyboard.



2. Press the **DEV** button.

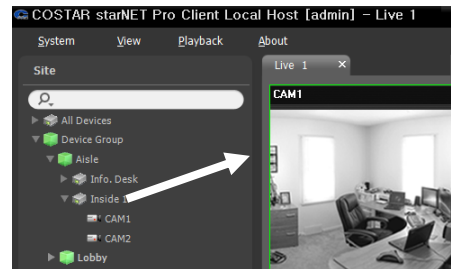


3. Press the camera screen ID.





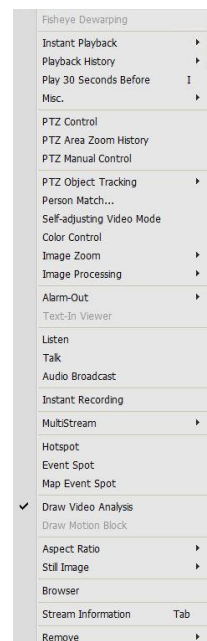
4. Press the **PANE** button.

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 25.4 Network Keyboard Buttons, Buttons for Client System Control (p. 255) for the explanations about other functions.

Playing Back Recorded Video



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



2. Press the **DEV** button.

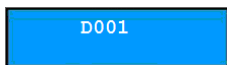
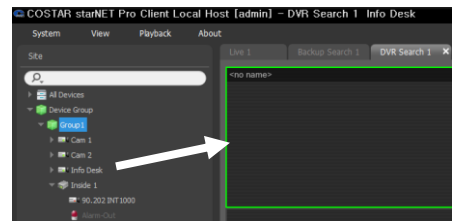


3. Press the camera screen ID.



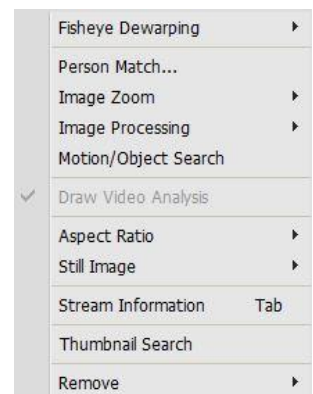
4. Press the **PANE** button.

5. Select a site to connect to from the Site list, and then drag and drop it on the 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 DVR Search screen menu is displayed.

7. Moving to the desired item by using arrow buttons and pressing the enter button (**Enter**) 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 25.4 Network Keyboard Buttons, Buttons for Client System Control (p. 255) for the explanations about other functions.

25.4 Network Keyboard Buttons



































The following is an explanation of the network keyboard buttons used to control the Client system. Refer to the network keyboard's user 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	<ul style="list-style-type: none"> Client system ID → DEV : Connects to the Client system.
	Disconnection	<ul style="list-style-type: none"> SHIFT & DEV : Releases the connection to the Client system.
	Panel Tab	<ul style="list-style-type: none"> Tab ID → DEV : Selects the panel tab.
	Camera Screen	<ul style="list-style-type: none"> Camera Screen ID → PANE : Selects the camera screen.
	Monitor	<ul style="list-style-type: none"> Monitor ID → MON : Selects the monitor.
	—	<ul style="list-style-type: none">  : 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) : Displays or hides the Preference setup screen of the Client program (System menu → Preference). F8 (SHIFT & F4) : Displays or hides the Client program's software version.

Buttons for Client System Control

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

Button	Designation	Operation
	Panic Recording On	• Camera Screen ID →  : Starts panic recording for the selected camera screen.
	Panic Recording Off	• Camera Screen ID → SHIFT &  : Stops panic recording for the selected camera screen.
	Alarm Out On	• 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	• 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	•  : 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.
	Search/Live	•  : Displays the 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.
	Fast Backward Play	•  : Plays video backward at high speed in the playback mode.
	Backward Step	• SHIFT &  : Plays video backward image-by-image in the playback mode.
	Play, Pause	•  : Plays back video. Pressing the button while playing back video pauses the video.
	Fast Forward Play	•  : Plays video forward at high speed in the playback mode.
	Forward Step	• SHIFT &  : Plays video forward image-by-image in the playback mode.
	Menu	• Displays the screen menu of the selected camera screen.
	Enter Button ()	• Selects an item in the screen menu of the selected camera. • Toggles the zoom size when in the zoom mode.

	Arrow Buttons	<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.
	Jog Dial	<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.
	Shuttle Ring	<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 26 — Web Service

You can monitor the real-time video of the site registered at the COSTAR starNET Pro system on the web browser. If the streaming service is activated, the realtime video from the device registered at the streaming server is displayed on the live monitoring screen. Check the followings and log onto the administrator service on the web browser.

NOTE: Web Service must be installed with the Client server.

NOTE: Web service must be running on the system to use Web Service.

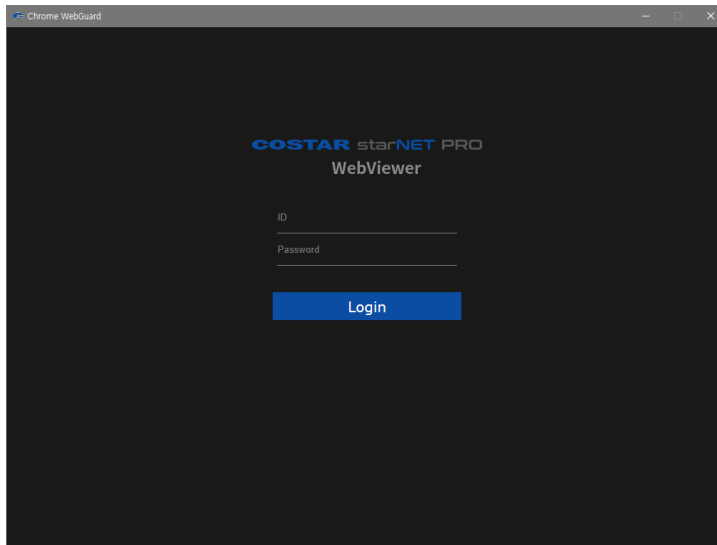
NOTE: A device must be added to a device group.

NOTE: Web Service is compatible with Internet Explorer 10 or more.

26.1 Login

1. Run the web browser and enter the address of the PC where the Web Service is installed(<http://PC address>). If it is an initial login, a message pops up to confirm ActiveX Control installation, and a login page appears after the installation. If it fails to install ActiveX Control, edit Run ActiveX Controls And Plug-ins options under the Options - Security settings.

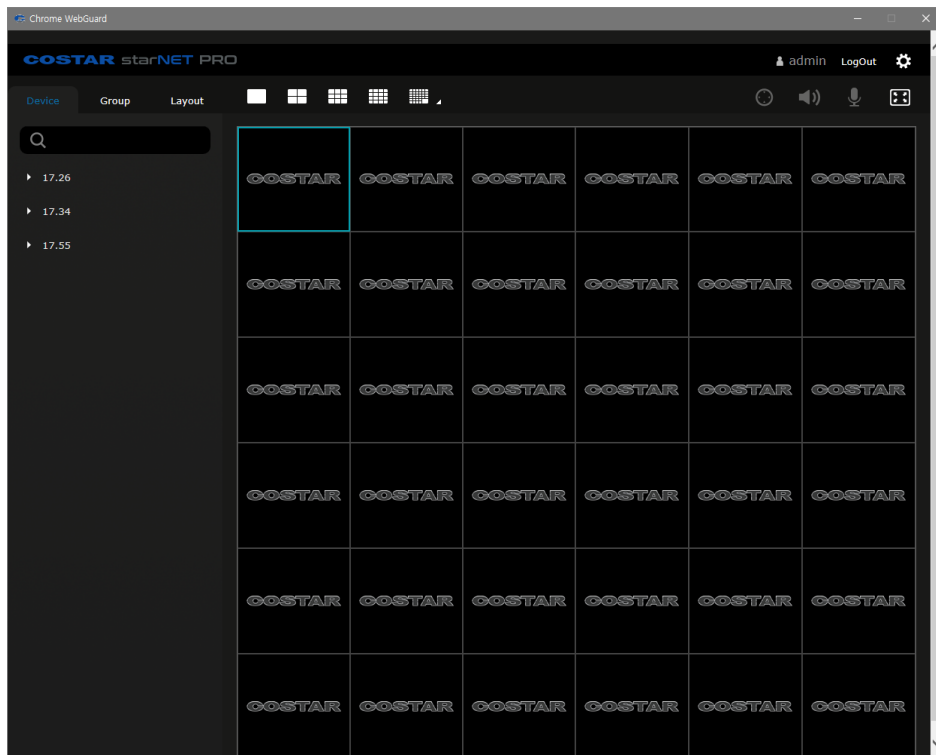
NOTE: Use [<http://PC address>] when using *System Settings > SSL*.



2. Enter the administration service ID and password. Press Enter or click Login.

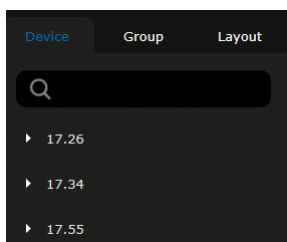
26.2 Web Service


After the login, Device, Group and Layout tabs are displayed on the left, and screen layout buttons are displayed on top of the screen. Account information, LogOut and settings buttons are displayed on the top right. Below these buttons, PTZ control, fisheye camera control, audio/microphone control and zoom in/out buttons are displayed.



Device

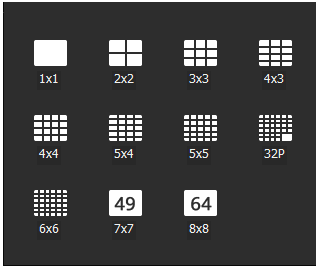
Displays the list of registered sites. Access the registered site by a mouse drag&drop.





-  (Search): Search a registered site. Search results are displayed while entering a search word.
- **Device:** Shows a list of devices registered at the administration service. Click on a device from the list and drag&drop on the box of the screen to watch the camera images connected to the device.
- **Group:** Shows a list of registered device groups. Click on a group from the list and drag&drop on the box of the screen to watch the camera images connected to the device group.
- **Layout:** Shows a list of registered layouts. Click on a layout from the list and drag&drop on the screen to run the layout monitoring.

Screen

Changes the screen layout, and monitors or controls the real-time images of the connected devices.





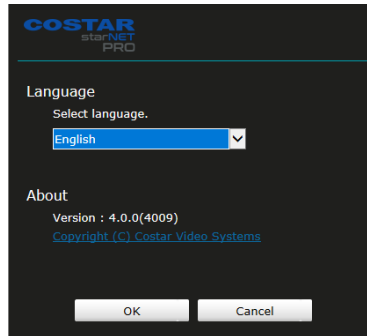
- **Layout:** Changes the screen layout. Click  to see more layout choices.
-  (Maximize Screen): Deletes the device list and maximizes the screen.

Account Information

Checks the account information and Web Service settings.



-  **admin** : Displays the name of the account.
- **LogOut** : Logs out the account.
-  : Selects a language of Web Service and displays the Web Service version.



26.3 Real-time Monitoring

You can monitor the real-time video of the registered site. Transmitted images are displayed on the monitoring screen, according to the device settings. If the streaming service is activated, the real-time video from the device registered at the streaming server is displayed on the live monitoring screen.

Monitoring and Disconnection

Select a site to connect from the list under Device, Group or Layout tabs, and drag&drop on the screen to display the real-time image. Select a camera and click the right mouse button to control or disconnect the camera.







- **PTZ Control:** Activated when the camera is a PTZ camera.
- **Fisheye Dewarping:** Activated when the camera is a fisheye camera.
- **MultiStream:** Select a stream if a camera controls MultiStream. The default settings is **Automatic Stream Control**, which automatically selects a stream depending on the screen resolution.
- **Aspect Ratio:** Select screen ratio from **Original Ratio**, **Fit to Screen** and **Fit to Screen (Aspect Ratio)**. The default setting is **Original Ratio**.
- **Remove:** Select from **Camera**, **Device** and **All Devices** to remove. Select **All Devices** disconnects all cameras connected to the screen.


Camera Control

You can control cameras by using a control toolbar and a screen menu.

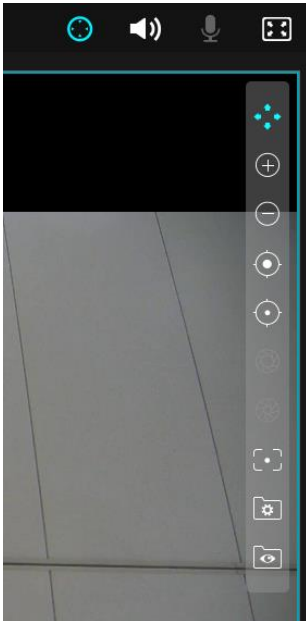









-  (PTZ Control): Turns on/off the PTZ control. It is only activated when the selected camera is a PTZ camera. Refer to the following **PTZ Control** about details.
-  (Fisheye Dewarping): Turns on/off the fisheye dewarping control. It is only activated when the selected camera is a fisheye camera. Refer to the following **Fisheye Dewarping Control** about details.
-  /  (Audio/Microphone Control): Turns on/off the audio/microphone functions of the camera.

PTZ Control

Clicking the  (PTZ Control) button on the control toolbar displays the PTZ control menu on the right side of the selected camera. Some functions may not work depending on the camera model.



NOTE: If the size of a camera pane is small, the PTZ control menu may not be displayed. Change the layout to display the PTZ control menu.

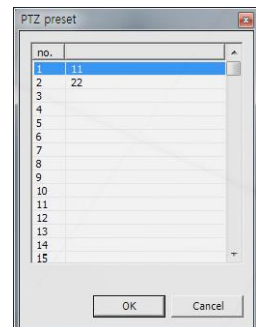
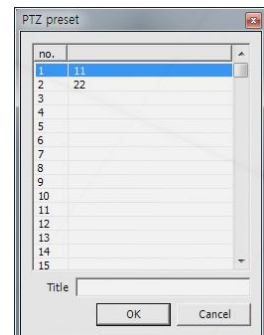


-  (Direction Control): Displays or hides the  (Direction Control Panel). You can control the direction of the PTZ camera by clicking the arrow buttons on the direction control panel or by clicking and dragging the mouse on the camera screen.
-  (Zoom In/Out): Zooms the camera lens in or out.
-  (Focus Near/Far): Focuses on near or far objects.
-  (Iris Open/Close): Opens or closes the iris of the camera lens.
-  (One Push): Automatically adjusts focus when the image is out of focus after the image is zoomed in or out (only works for some models of Network Camera connections).
-  (Set/View Preset): See PTZ Preset Control (p. 88) for an explanation of this function.

PTZ Preset Control

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

4. Move the PTZ camera to the desired position.
5. 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.
6. 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.



ePTZ Control

You can control Pan, Tilt, and Zoom function more accurately.

NOTE: This is supported only for some models of camera.



Controls Pan, Tilt, and Zoom function. Dragging the mouse, the size of dragging indicates the speed of PTZ.


- Left button drag: Left/Right (Pan control), Up/Down (Tilt control)
- Right button drag: Zoom control

PTZ OneClick Move Control


You can control Pan-Tilt to move your point to the center of the screen. You can move the position exactly you want with minimum input.

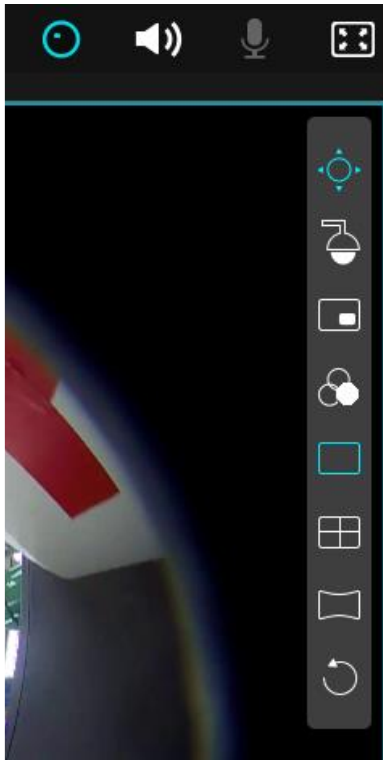
NOTE: This is supported only for some models of camera.











Clicking the  (OneClick Move) button on the control toolbar and any point of PTZ camera pane moves anywhere you want. Dragging the mouse zooms the part of screen.

Fisheye Dewarping

Clicking the  (Fisheye Dewarping) button on the control toolbar displays the fisheye dewarping toolbar and allows you to dewarp fisheye image. The mount type set in the device is a default.



-  (ePTZ): Controls Pan, Tilt, and Zoom function. Dragging the mouse, the size of dragging indicates the speed of PTZ.
 - Left button drag: Left/Right (Pan control), Up/Down (Tilt control)
 - Right button drag: Zoom control
-  (Mount Type): Choose a position that the camera is mounted. The available Screen Type changes depending on this setting.
-  (Main PiP): Displays PiP (Picture in Picture) view to select the area easily in the main view screen.
-  (Filter): Select filters. Filters include Nearest Neighbor, Linear, Cubic and Nearest Neighbor on ePTZ.
-  (Main View): Select the main view mode.
-  (Quad View): Select the 2x2 view mode.
-  (Panoramic): Select the panoramic mode.
-  (Display Source Image): Cancels the adjustment and reloads the original image.

Appendix

Hotkey

System Menu

System

Hotkey	Operation
Ctrl + E	Save screen capture image file, execute log file save if other log save is supported
Ctrl + Alt + P	Execute the print output function in tabs that support screen capture image output and other print output
Ctrl + Alt + L	Manual execution of Client S/W lock function
Ctrl + Shift + P	Run the Preference Device page

Screen

Hotkey	Operation
Ctrl + Enter	Toggle selected tab full screen
Ctrl + Alt + Enter	Toggle full screen with selected tab toolbar
Ctrl + F	Screen division selection/creation dialog box pop up
Ctrl + PgDn	Go to the previous group of the screen format
Ctrl + PgUp	Go to the next group of the screen format
Shift + Enter	Toggle selected camera pane 1x1 format
PgDn	Select the previous pane of the selected camera pane
PgUp	Select the next pane of the selected camera pane
F3	Run the screen magnifier
Ctrl + Q + ROI-Drag	Selected camera pane video image drag designated area pixel counter display
Ctrl + Alt + E: (COSTAR starNET Pro)	Toggle Panic Event Manager panel popup

Monitoring

Hotkey	Operation
T	Toggle two-way audio
Shift + Home	Toggle full screen including toolbar of selected tab
Home	Screen division selection/creation dialog box pop up
Pause(Break)	Move the previous group of the screen format

Play

Hotkey	Operation
Ctrl + Space	Toggle play/pause playback sessions for selected camera pane.
Ctrl + Shift + Space	Toggle batch play/pause of selected playback sessions.
Ctrl + L	Increase playback speed
Ctrl + J	Decrease playback speed
Ctrl + K	Reset playback speed (stop playback)
Ctrl + P	Normal speed playback
Ctrl + H	Fast forward play
Ctrl + G	Fast Backward play
Ctrl + T	Jump to time
Home	Jump to the start
End	Jump to the most recent point
F	Jump to the next frame (Forward Frame)
D	Jump to the previous frame (Backward Frame)
Ctrl + Right Arrow	1 sec. forward
Ctrl + Left Arrow	1 sec. backward
Shift + Right Arrow	1 min. forward
Shift + Left Arrow	1 min. backward
Alt + Right Arrow	10 min. forward
Alt + Left Arrow	10 min. backward
(Play or stop button) Scroll the mouse wheel	Jogging frame by frame
(Step playback or previous/next button) Scroll the mouse wheel	Jump to the specified time
(Jog shuttle) Scroll the mouse wheel	Shuttle step control
(Jog shuttle) Rightclick on the mouse	Shuttle lock
(Jog shuttle) Click the mouse wheel button	Shuttle reset (pause, unlock)

Monitoring

Hotkey	Operation
L	Toggle two-way audio
Tab	Display OSD with camera pane video stream information
(Live popup) F4	Cancel the Ignore Live Popup function

Screen

Hotkey	Operation
After dragging pane (A), drop it onto pane (B).	Change the position of the pane / Swap the devices of both panes (A and B) if both devices are registered.
C + After dragging pane (A), drop it onto pane (B).	Clone the device registered in A to B

After dragging pane (A), drop it onto pane (B) on a different screen.	Clone the device registered in A to B / Device registration and Goto (A: Instant playback, B: playback screen)
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Sequence

Hotkey	Operation
Shift + PgDn	Go to the next layout
Shift + PgUp	Go to the previous layout
Ctrl + Shift + PgDn	Go to the next camera sequence
Ctrl + Shift + PgUp	Go to the previous camera sequence

Hover Toolbar

Hotkey	Operation
(Hover toolbar) Scroll the mouse wheel	Scroll left and right

Message Box

Hotkey	Operation
Ctrl + C	Copy the string from the message box to the clipboard and then press Ctrl + V to paste the content into a text editor such as Notepad.

Device

Hotkey	Operation
Ins	Register a NumericID device to the selected camera pane (root device, camera supported)
Del	Unregister a device registered to the selected camera pane
Ctrl + Del	Unregister the camera pane device associated with the previously registered root device
Shift + Drag&Drop	Unregister a device registered to the selected camera pane
Shift + A + Drag&Drop	Bulk disconnect the devices registered on the screen
Ctrl + Alt + A + drop the device to the camera pane	Register the screen format auto extender

Smart UX

Instant Playback

Hotkey	Operation
I	Toggle the instant playback to previously run time interval
Shift + I	Toggle the instant playback for 1 minute
Space	Toggle play/stop
L	Increase playback speed / Stepby-step control / Continuous run during keystroke
J	Decrease playback speed / Stepby-step control / Continuous run during keystroke
K	Reset the playback speed
H	Fast forward play / Step-by-step control
G	Fast Backward play / Step-by-step control
P	Normal speed playback
Home	Jump to the start
End	Jump to the most recent point
F	Jump to the next frame (Forward Frame)
D	Jump to the previous frame (Backward Frame)
Ctrl + Right Arrow	1 sec. forward / Continuous run during keystroke
Ctrl + Left Arrow	1 sec. backward / Continuous run during keystroke
Shift + Right Arrow	1 min. forward / Continuous run during keystroke
Shift + Left Arrow	1 min. backward / Continuous run during keystroke
Tab	Toggle the widget display
Shift + Tab	Toggle the widget display mode change (vertical / horizontal)
B	Add bookmark
R	Refresh based on the current time/ Update recording time range
Shift + PgUp	Go to the previous <time interval> of the recording time range
Shift + PgDn	Go to the next <time interval> of the recording time range
(Caption time bar) Right-click on the mouse	Toggle thumbnail mode
Scroll the mouse wheel on the play button	Jogging frame by frame
(On the previous/next button) Scroll the mouse wheel	Move by 1 sec
(On the previous/next button) Shift + Scroll the mouse wheel	Move by 1 min / Move by 5 sec if the recording time section is 3 minutes or less
(Caption time bar) Scroll the mouse wheel	Move by 1 sec
(Caption time bar) Shift + scroll the mouse wheel	Move by 1 min / Move by 5 sec if the recording time section is 3 minutes or less

Quick PTZ

Hotkey	Operation
Ctrl + Drag left button of the mouse	Pan/Tilt control based pointer offset speed
Ctrl + Drag right button of the mouse (up/down)	Zoom In / Out control based pointer offset speed
Ctrl + Scroll the mouse wheel	Zoom In/ Out control

Ctrl + Shift + Click the mouse wheel	Maximum zoom out
Ctrl + Shift + Drag left button of the mouse	Move Pan/Tilt so that the designated position in the video is in the center
Ctrl + Alt + Drag the left mouse button area	Move Pan/Tilt/Zoom to the designated area in the video
Ctrl + Alt + Click the mouse wheel	Toggle area zoom history popup
Esc	Disable control mode if running in PTZ control mode
Direction keys on the keyboard	Control PTZ 4 directions
Number pad 1~4, 6~9	Control PTZ 8 directions
Number pad 5	PTZ preset popup
+	Zoom In
Z	Zoom In
-	Zoom Out
X	Zoom Out
/	Focus far
*	Focus near
Number pad 0	Open aperture
.	Close aperture

Quick Dewarping

Hotkey	Operation
(In the original video) Ctrl + Drag the left mouse button area	Dewarp to the designated area in the video
Ctrl + Drag left button of the mouse	Move Pan / Tilt to the designated area in the video
Ctrl + Drag right button of the mouse (up/down)	Fine control of zooming in/out
Ctrl + Scroll the mouse wheel	Zoom In/Out control
Ctrl + Click the mouse wheel	Dewarping reset
Esc	Disable control mode if running in ePTZ control mode

Quick Dynamic Zoom

Hotkey	Operation
(In the original video) Ctrl + Drag the left mouse button area	Zoom in to the designated area in the video
Ctrl + Drag left button of the mouse	Move the zoom area
Ctrl + Scroll the mouse wheel	Zoom In / Out control
Ctrl + Click the mouse wheel	Zoom reset
Esc	Disable zoom mode if running in dynamic zoom mode

Quick Save

Hotkey	Operation
Ctrl + S	Automatically save the still image with the path and file name set in the Settings > Save > Still Image
Ctrl + Shift + S	Save as a still image
Ctrl + C	Save to clipboard

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 COSTAR starNET Pro 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).
- (Orange: Is displayed during panic recording): Indicates video is being recorded (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 administration server (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 COSTAR starNET Pro protocol).
- (Auto Tracking): Indicates Auto tracking is enabled. (upper right corner of the screen).
- (Local Audio): Local audio is playing. (upper right corner of the screen).
- (Video Analysis): Indicates that the current video is being analyzed. (upper right corner of the screen).
- (Fisheye Source Image) (Fisheye Dewarping): Indicates fisheye dewarping is supported. (upper right corner of the screen).

Network Disconnection Log

ID	Explanation	ID	Explanation
0	Unknown error.	15	Cannot reach the DVRs.
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 already in use.
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.		

Camera Installation Guide for Video Analytics Detection

For the video analytics detection to work properly, the cameras must be installed properly.

Location

- **Indoors:** Check the lighting condition.
 - **Low Light:** Degrades the performance of the video analytics detection.
 - **Bright Light:** See the Lighting section below.
- **Outdoors:** Check the weather condition.
 - **Rain & Snow:** Makes it difficult to distinguish objects from rain and snow and can cause false detection.
 - **Light:** Swarms of bugs and birds which are attracted to the bugs can cause false detection. It is recommended to position lights as far as possible from cameras by using a bracket if possible.

Lighting

- **Sunlight:** If the camera is pointed directly at the sun, the video analytics function will not work.
 - Do NOT point cameras directly east or west which can blind the camera at sunrise or sunset.
 - Extend the camera's sun shield if possible to increase protection from direct sunlight and protect the lens from dust and weather.
- **Artificial Light:** If the camera is pointed directly at a light, the video analytics function will not work.
 - If lights are in front of the camera, avoid pointing the camera directly at the light or light reflected from shiny floors.

Camera Position

- **Height/Angle:** Steeper angles provide more pronounced sensation of movement in the detection area. The camera must be mounted higher than people's heads.

Background

- **Floor:** If the floor is made of glossy or transparent material and reflects light to the camera, place the camera as parallel as possible to the floor.
- **Windows:** If windows reflect sunlight or lights into the camera, place the camera as parallel as possible to the windows.

Camera Settings

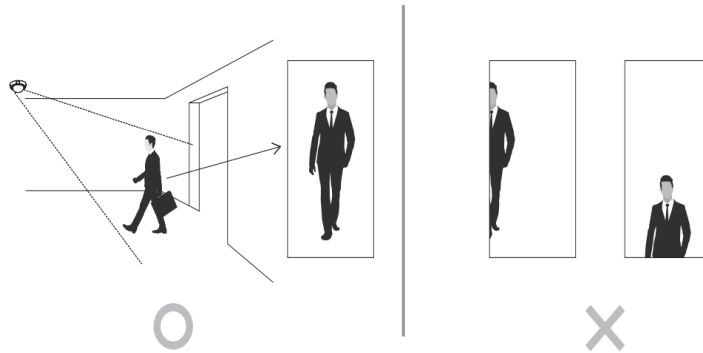
- **Focus:** The focus settings for night might be different from the settings from day. Check and adjust the focus to be optimized for both day and night.
- **BLC:** If the camera has an automatic backlight feature, disable the feature.
- **Shutter Speed Control:** If the camera has a slow shutter feature where the shutter speed is automatically reduced at night, disable the feature.

Line Crossing

Camera Installation

Install in an oblique line so that the whole body of the person appears at the place to be counted and the people in front and behind do not block each other.

- Install so that the movement of people passing through the boundary line can be easily captured by the camera around the boundary line.
- Install so that the person does not tilt more than 30 degrees on the screen, and the size of the person should be larger than 1/16 of the entire screen size.



NOTES:

- In case people in front and behind passing through the boundary line are too close
- A congested environment where people enter and exit simultaneously around the boundary line
- An environment where people stay or loiter around the boundary line


ANPR List CSV File Example

The first line of the CSV file is indicated as the column title, and each line should be filled in with items in the following order: Number Plate, Type, Title, Remark, Owner, Model, Color.

The **Number Plate** column is mandatory, and the **Type** column should include either blacklist or whitelist in English with no capital classification. If the **Type** column is not filled in, it is considered as Disabled.

	A	B	C	D	E	F	G
1	Number Plate	Type	Title	Remark	Owner	Model	Color
2	123ABC	blacklist	Title1, Sub1	Remark1	Owner1	Model1	Color1
3	456DEF	whitelist	Title2	Remark2	Owner2	Model2	Color2
4	789GHI		Title3	Remark3	Owner3	Model3	Color3

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 administration server 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 COSTAR starNET Pro system. Check that the streaming service is running. When the streaming service is not running, monitoring is still available but it is restricted to fewer users based on the maximum number of simultaneous connections supported by the device.
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 COSTAR starNET Pro 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.
A WIBU-Key is not recognized.	<ul style="list-style-type: none"> Disconnect the WIBU-Key from the current USB port and connect it to other USB ports. The problem might occur when you try to connect other USB devices to the same administration server as the WIBU-Key is connected.
Cannot operate the COSTAR starNET Pro program because of wrong ID and password.	<ul style="list-style-type: none"> Run the SecretKey program (Go to the Start Menu → Click COSTAR starNET Pro and then Utility). When you provide the result to your dealer or distributor, you will receive a new user ID and password. Uninstall and reinstall the COSTAR starNET Pro program. You must delete all saved data, and the deleted data cannot be restored.

Problem	Possible Solution
Cannot operate the COSTAR starNET Pro 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, monitoring service is 11004, streaming service is 11003 and video analytics service is 11007.
Failed to install or upgrade during installing the COSTAR starNET Pro program due to a problem (system power off, etc.)	<ul style="list-style-type: none"> Try removing the COSTAR starNET Pro program by using the tool provided by Microsoft® Windows®. (URL: https://support.microsoft.com/en-us/help/17588/fix-problems-that-block-programs-from-being-installed-or-removed) Use this tool to remove the COSTAR starNET Pro program, and reinstall.
Cannot display the video on the Client Live tab when Show Video Analytics is selected for the IDIS camera under IDLA video analysis.	<ul style="list-style-type: none"> Check if the device is using the stream selected as Video Analytics Stream in the IDLA setting.
An error message, "The program can't start because wkwin32.dll is missing from your computer.", pops up when operating Wibukey Tester.	<ul style="list-style-type: none"> Install WIBU-Key driver for proper operation.

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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COSTAR
COSTAR VIDEO SYSTEMS

101 Wrangler Drive, Suite 201 Coppel, Texas 75019

Phone: (469) 635-6800 Fax: (469) 635-6822

Toll-free: (888) 694-7827