



Setup Instructions

i-PRO Active Guard for Video Insight



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1. Preface

1.1. Limitation of liability

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- Other names of companies and products contained in these operating instructions may be trademarks or registered trademarks of their respective owners.

1.4. Abbreviations

These are descriptions of the basic terms used in these operating instructions.

Microsoft® Windows® are described as Windows.

1.5. Disclaimer of warranty

This product is designed to search/verify a specified face from database that stores face information and thumbnail images created based on faces captured by network cameras and display statistical information by operation using a client terminal or system compatible with this product. This product by itself is not designed for crime prevention. Our company accepts no responsibility for the following under any circumstances.

- (1) ANY DAMAGE AND LOSS, INCLUDING WITHOUT LIMITATION, DIRECT OR INDIRECT, SPECIAL, CONSEQUENTIAL OR EXEMPLARY, ARISING OUT OF OR RELATING TO THE PRODUCT.
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- (5) ANY CLAIM OR ACTION FOR DAMAGES BROUGHT BY ANY PERSON OR ORGANIZATION AS A PHOTOGRAPHED SUBJECT DUE TO VIOLATION OF PRIVACY CONCERNING A SURVEILLANCE CAMERA'S PICTURE OR SAVED DATA, FOR SOME REASON (INCLUDING USE WHEN USER AUTHENTICATION ON THE AUTHENTICATION SETTING SCREEN IS SET TO OFF), BECOMING PUBLIC OR BEING USED FOR ANY PURPOSE.
- (6) LOSS OF REGISTERED DATA CAUSED BY ANY FAILURE (INCLUDING INITIALIZATION OF THE PRODUCT DUE TO FORGOTTEN AUTHENTICATION INFORMATION SUCH AS A USERNAME AND PASSWORD).
- (7) ANY PROBLEM, DAMAGE OR COMPLAINT CAUSED BY THE OPERATION BY A MALICIOUS THIRD PARTY.

1.6. Collection of Usage Data

This software may collect data about utilization of this software and send it to i-PRO Co., Ltd. In particular, we use this data to improve our products and services. You can stop this data collection by unchecking "Send anonymous data to improve software and user experience," checkbox.

The following is an example of the data collected by this software. We do not collect data about your personal information.

- Company name, Country and Purpose of use entered by user.
- The number of camera and camera's extension software.

1.7. Network security

As you will use this product connected to a network, your attention is called to the following security risks.

1. Leakage or theft of information through this product
2. Use of this product for illegal operations by persons with malicious intent
3. Interference with or stoppage of this product by persons with malicious intent

It is your responsibility to take precautions such as those described below to protect yourself against the above network security risks.

- Use this product in a network secured by a firewall, etc.
- If this product is connected to a network that includes PCs, make sure that the system is not infected by computer viruses or other malicious entities (using a regularly updated anti-virus program, anti-spyware program, etc.).
- Protect your network against unauthorized access by restricting users to those who log in with an authorized username and password set by using user authentication.
- After the product is accessed by the administrator, make sure to close the web browser.
- Change the administrator password periodically. Keep the authentication information (your username and password) in a safe place free from public view.
- Apply measures such as user authentication to protect your network against leakage or theft of information, including image data, authentication information (user names and passwords), alarm mail information and FTP server information.
- Use a password that has never been used to protect your network from information leakage or theft.

1.8. Precaution for use

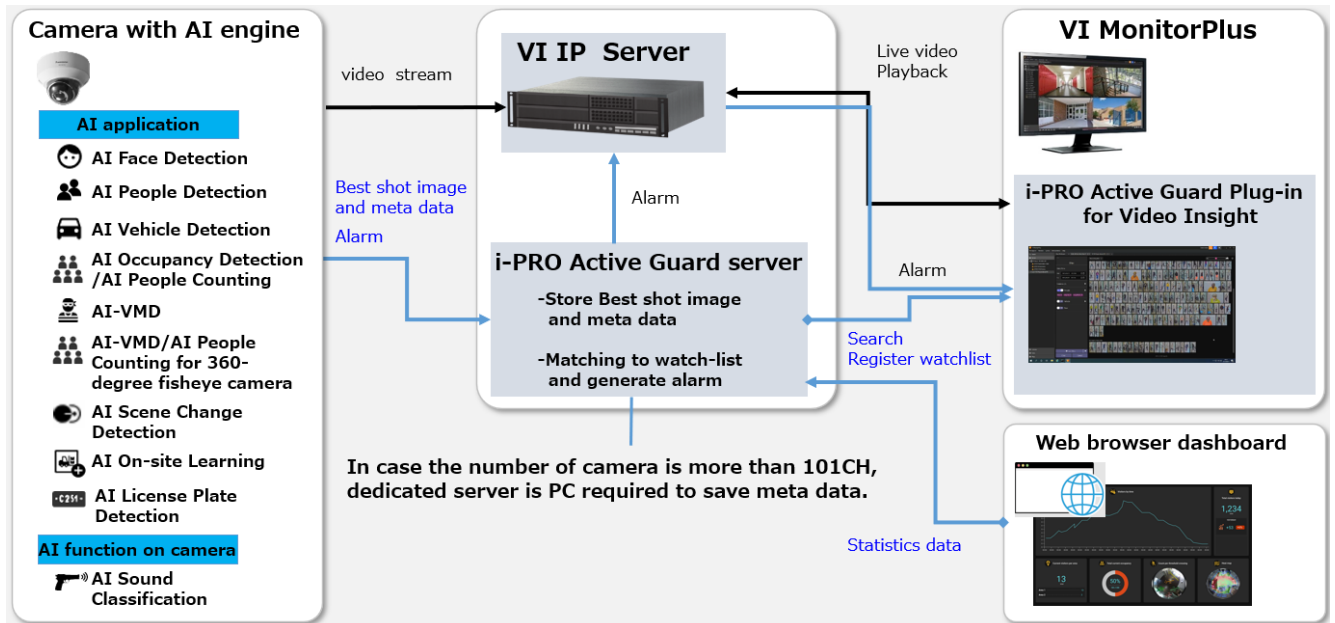
- The administrator should properly manage authentication information such as cameras, recorders, client software, Windows, databases, etc. so as not to leak to third parties.
- Always change passwords for cameras, recorders, client software, etc. from the default values, and perform appropriate management.
- Apply authentication information for each user, and do not share.
- Set the access privileges of the user appropriately.
- Make sure to manage login properly using auto logout function etc. so that third parties do not operate unintentionally by leaving it logged in.
- When downloading the application, please download from the official site.
- The administrator should properly manage exported data using export function so that there is no leakage to third parties.
- When repairing, disposing of, or transferring PC, there is a possibility that information may be left on the HDD etc. Therefore, please manage by an appropriate method such as physically destroying the HDD. Also, if using external media, remove them in advance and manage them so that they do not leak to third parties.
- If the authentication information is lost, system needs to be initialized. Store the authentication information properly in a place where only authorized persons can view it.
- It is recommended to back up and manage system configuration data regularly.
- Set the time for devices in the system, such as cameras, recorders, and PCs, using an NTP server, etc.
- Please properly manage the expiration date of the server certificate prepared by the customer.
- For Windows, apply the latest security patch. Also, please set up Windows properly according to your environment.
- Databases can be corrupted by forced shutdowns / power outages or system outages / system crashes due to power interruptions.

In that case, following phenomenon may occur. i-PRO Active Guard server software will not start, functions such as search, alarm notification, or watch registration will not work.

Damaged data cannot be recovered, so it is highly recommended to install a UPS in case of power failure.

2. Introduction to i-PRO Active Guard

2.1. System overview



AI application or AI function on cameras transmit video stream to VI IP server and transmit Best shot images and meta data to i-PRO Active Guard server.

i-PRO Active Guard server stores those data and also generate alarm when face, people or vehicle is matched to watchlist.

i-PRO Active Guard Plug-in for Video Insight (hereinafter referred to as "Plug-in") which is the plug-in software for VI MonitorPlus can search Best shot images, register watchlist, show live video, recorded video, and alarm.

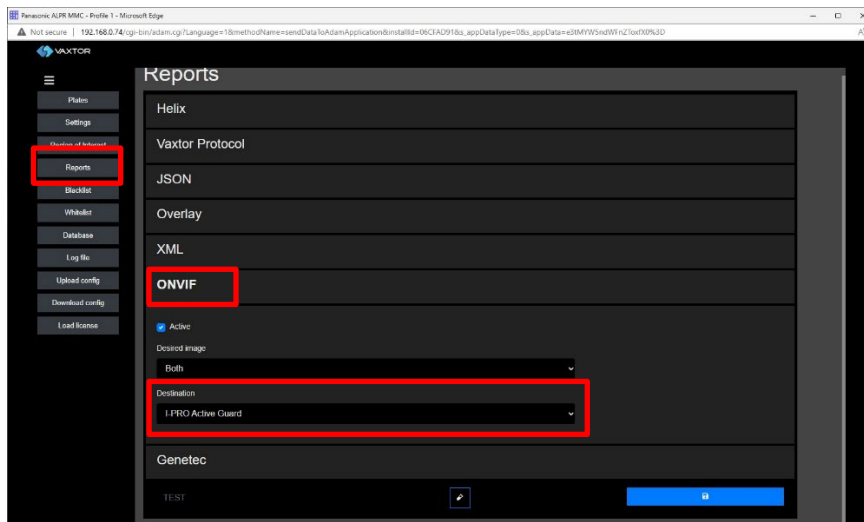
By visualizing statistics data from AI application on the web browser, it can also be used for business intelligence.

2.2. Software components and supported version

Camera's AI function

- AI Face Detection: Camera's extension software. V1.11 or later is supported.
- AI People Detection: Camera's extension software. V1.11 or later is supported.
 - V1.40 or later is required for to use the automatic detection of people attributes from images.
- AI Vehicle Detection: Camera's extension software. V1.11 or later is supported.
 - V1.40 or later is required for to use the automatic detection of vehicle attributes from images.
- AI Occupancy Detection/AI People Counting: Camera's extension software. V1.60 or later is supported.
- AI-VMD: Camera's extension software. V2.00 or later is supported.
 - V3.00 or later is required for people or vehicle counting dashboard.
 - V3.20 or later is required for to show the line names set in the camera.
- AI Sound Classification: Camera's firmware function.
- AI-VMD/AI People Counting for 360-degree fisheye camera: Camera's extension software. V1.21 or later is supported.
 - V1.50 or later is required for to show the area/line names set in the camera.
- AI Scene Change Detection: Camera's extension software. V1.00 or later is supported.
- AI On-site Learning: Camera's extension software. V1.00 or later is supported.
- AI Processing Relay: Camera's extension software. V1.00 or later is supported.
- VaxALPR Camera's extension software. V1.3.16 or later is supported.
 - For Multi-Sensor Cameras, only 1ch is supported.
 - VaxALPR does not work just by installing it on the camera.

Set "Reports - ONVIF – Destination" to "i-PRO Active Guard" in VaxALPR app settings.



For VaxALPR settings and installation detail, please see <https://www.vaxtor.com/products/vaxalpr/>

Please see https://i-pro.com/products_and_solutions/en/surveillance/learning-and-support/knowledge-base/product-tips/active-guard-links for more information.

For integration with 3rd party extension software, refer to 7.3.

Camera's firmware

Camera with AI engine (hereinafter referred to as "camera") are supported.

Please also check supported camera models on VMS.

camera model	Version
WV-S1136,WV-S2136,WV-S2136L,WV-S2236L	1.11 or later
WV-S1536L,WV-S1536LN, WV-S1536LTN,WV-S2536L,WV-S2536LN, ,WV-S2536LTN	1.11 or later
WV-X1571L,WV-X2571L,WV-X2271L,WV-X1551L,WV-X2551L	1.50 or later
WV-S4576L,WV-S4176,WV-S4576LM,WV-S4156,WV-S4556L,WV-S4556LM	1.01 or later
WV-S8543,WV-S8543G,WV-S8543L,WV-S8543LG, WV-S8544,WV-S8544G,WV-S8544L,WV-S8544LG, WV-S8563L,WV-S8563LG,WV-S8564L,WV-S8564LG, WV-S8573L,WV-S8573LG,WV-S8574L,WV-S8574LG	1.01 or later
WV-S15500-V3L, WV-S15500-V3LN, WV-S15500-V3LN1, WV-S15500-V3LK,WV-S15600-V2L, WV-S15600-V2LN,WV-S15700-V2L, WV-S15700-V2LN, WV-S15700-V2LK,WV-S22500-V3L, WV-S22500-V3LG, WV-S22500-V3L1, WV-S22600-V2L, WV-S22600-V2LG,WV-S22700-V2L, WV-S22700-V2LG, WV-S22700-V2L1, WV-S25500-V3L,WV-S25500-V3LN, WV-S25500-V3LG, WV-S25500-V3LN1,WV-S25600-V2L, WV-S25600-V2LN, WV-S25600-V2LG,WV-S25700-V2L, WV-S25700-V2LN, WV-S25700-V2LG,WV-S25700-V2LN1	1.00 or later
WV-S71300-F3	1.10 or later

Please see <https://i-pro.com/global/en/surveillance/training-support/support/technical-information><Control No:C0103> for more information.

VMS and i-PRO Active Guard server / Plug-in

Software	Version
VI IP server (Recording server) VI MonitorPlus (Client software) *VI Enterprise is supported; VI Express is not supported.	V7.8.3 or later
i-PRO Active Guard server / i-PRO Active Guard Plug-in for Video Insight	V1.0.0 or later

3. System design

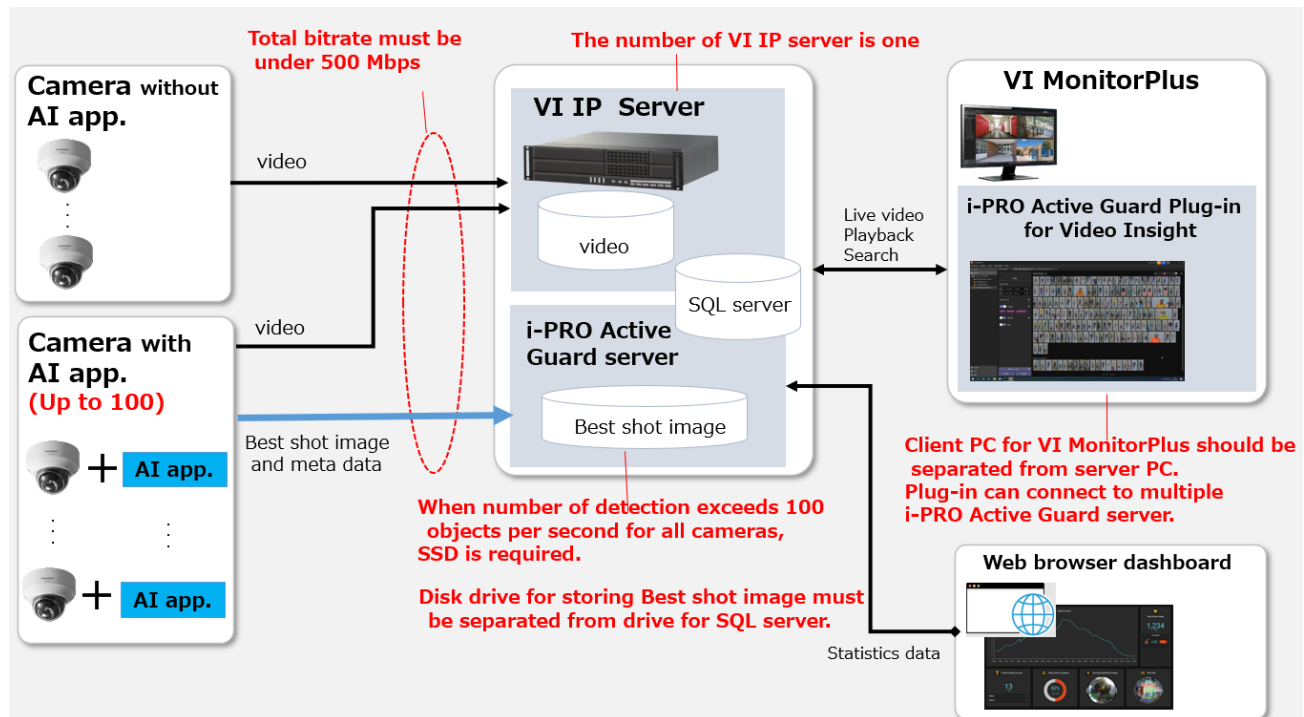
3.1. System architecture

Two system architecture is selectable depending on the number of cameras, the number of VI IP server, the frequency that camera detects objects or storage size and so on.

	i-PRO Active Guard server installed with VI IP server	i-PRO Active Guard server installed In dedicated server
The number of cameras	100 (AI Face Detection is up to 20)	300 (AI Face Detection is up to 60)
The number of VI IP server	1	12
Total bitrate	500Mbps for video and best shot images	500Mbps for best shot images

3.1.A i-PRO Active Guard server installed to PC with VI IP server

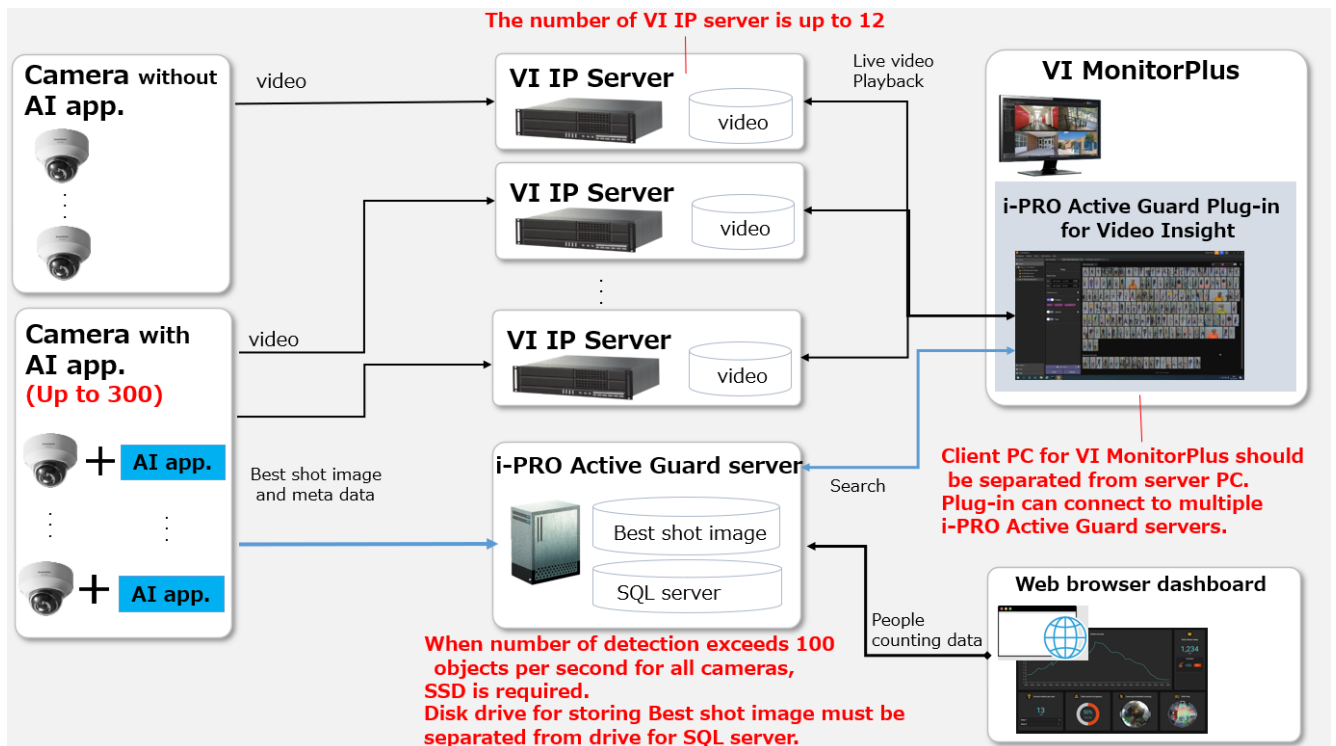
IP server



There are some conditions for installing i-PRO Active Guard server to the server PC with VI IP server.

- (1) The number of cameras with AI engine is up to 100
Camera with AI Face Detection is up to 20.
- (2) Total bitrate that server PC receives must be under 500Mbps. Both bitrate of video data and best shot images should be calculated. For video, the Storage and Bandwidth calculator is available on <https://i-pro.com/us/en/surveillance/storage-and-bandwidth-calculator/>
Bitrate of best shot images can be calculated in 3.3.
- (3) The number of VI IP server is one. When multiple VI IP servers exist in system, dedicated server PC is required for i-PRO Active Guard server. Dedicated server PC is also required when using failover server for VI IP server.
- (4) Disk drive for storing Best shot image must be separate from drive for storing video and SQL server.
For the file path to store "SQL server", see 4.3.1.
For the file path to store "Best shot image", see 4.3.1. or 4.3.5.4.
If you require reliable data management, please consider using RAID5/6.
- (5) Client PC should be separated from server PC. Plug-in can connect to one i-PRO Active Guard server.

3.1.B i-PRO Active Guard server installed to dedicated server PC



When i-PRO Active Guard server is installed in dedicated server,

- (1) The number of cameras with AI engine is up to 300.
Camera with AI Face Detection is up to 60.
- (2) Up to 12 VI IP server can be registered to i-PRO Active Guard server.
Each camera should be registered to one VI IP Server.
- (3) Disk drive for storing Best shot image must be separate from drive for SQL server.
For the file path to store "SQL server", see 4.3.1.
For the file path to store "Best shot image", see 4.3.1. or 4.3.5.4.
If you require reliable data management, please consider using RAID5/6.
- (4) Client PC should be separated from server PC. Plug-in can connect to multiple i-PRO Active Guard server.

3.2. System requirement

3.2.1 System requirement for i-PRO Active Guard server

Hardware requirement

	Requirement
<p>Up to 100 cameras</p> <p>i-PRO Active Guard server installed with VI IP server</p> <p>* Bandwidth limitations apply.</p>	<ul style="list-style-type: none"> • Intel® Xeon® Silver 4208 (2.1 GHz, 8 core 16 thread) or better • 32 GB of RAM or more • 64 bit operating system <ul style="list-style-type: none"> Microsoft® Windows Server 2016 Standard Microsoft® Windows Server 2019 Standard Microsoft® Windows Server 2022 Standard Microsoft® Windows Server 2016 Datacenter Microsoft® Windows Server 2019 Datacenter Microsoft® Windows Server 2022 Datacenter • GbE network interface card
<p>Up to 100 cameras</p> <p>i-PRO Active Guard server installed in dedicated server</p>	<ul style="list-style-type: none"> • Intel® Core™ i7-9700 (4.9 GHz, 8 core 8 thread) or better • 32 GB of RAM or more • 64 bit operating system <ul style="list-style-type: none"> Microsoft® Windows 10 Pro Microsoft® Windows 10 Enterprise Microsoft® Windows 10 Education Microsoft® Windows 10 Pro Education * Version 2004 or later Microsoft® Windows 10 IoT Enterprise * Version 21H1 or later Microsoft® Windows 11 Pro Microsoft® Windows 11 Enterprise Microsoft® Windows 11 Education Microsoft® Windows 11 Pro Education Microsoft® Windows 11 IoT Enterprise Microsoft® Windows Server 2016 Standard Microsoft® Windows Server 2019 Standard Microsoft® Windows Server 2022 Standard Microsoft® Windows Server 2016 Datacenter Microsoft® Windows Server 2019 Datacenter Microsoft® Windows Server 2022 Datacenter • GbE network interface card

	Requirement
<p>Up to 300 cameras</p> <p>i-PRO Active Guard server installed in dedicated server</p>	<ul style="list-style-type: none"> • Intel® Xeon® Silver 4208 (2.1 GHz, 8 core 16 thread) or better • 32 GB of RAM or more • 64 bit operating system <ul style="list-style-type: none"> Microsoft® Windows Server 2016 Standard Microsoft® Windows Server 2019 Standard Microsoft® Windows Server 2022 Standard <ul style="list-style-type: none"> Microsoft® Windows Server 2016 Datacenter Microsoft® Windows Server 2019 Datacenter Microsoft® Windows Server 2022 Datacenter • GbE network interface card

Common software requirement

Category	Supported software
Database Engines	<ul style="list-style-type: none">• SQL server 2014/2016/2019/2022 Express/Standard Edition <p>The following SQL server is installed when new installing</p> <ul style="list-style-type: none">- i-PRO Active Guard server version 1.0.0 to 1.6.2 SQL server 2016 Express Edition.- i-PRO Active Guard server version 1.7.0 or later SQL server 2019 Express Edition. <p>For update i-PRO Active Guard server, SQL Server carries over the existing version.</p> <p>SQL server Upgrade to Standard Edition procedure is shown in 5.10.</p>
Web browser for Configuration Tool	<ul style="list-style-type: none">•Microsoft Edge 85 or later•Chrome 83 or later•Firefox 95 or later

Disk drive considerations

When the maximum number of detections exceed 100 objects per second for all cameras, SSD is required for storing data. See 3.3 in detail. If using HDD, data will not be stored, and system become unstable.

Disk drive for storing Best shot image must be separate from drive for SQL server.

Database considerations

The SQL server Express Edition has limitation that the maximum size for database is 10GB, so estimated used disk size for database of face, people, vehicle, and LPR should be under 8GB.” Check 3.3 to see if the Express edition is sufficient.

3.2.2 System requirement for Plug-in

Component	Requirement
Processor	6th Generation or better Intel Core processor(3.1 GHz quad-core+)
Memory	8 GB or more
Video	1GB
Network	1 Gb/s+
OS	Microsoft® Windows 10 Pro (64 bit) Microsoft® Windows 11 Pro (64 bit)

3.3. How to determine the system architecture

STEP1: The number of cameras

When the numbers of cameras with AI People detection, AI Vehicle detection, AI Occupancy detection/AI People Counting, AI-VMD, Sound, AI-VMD/AI People Counting for 360-degree fisheye camera or AI Scene Change detection, License plate detection is no more than 100(AI Face detection is no more than 20), it may be possible that AI server is installed to PC with VI IP server. Please continue to check STEP2.

When over 100 (or over 20 for AI Face detection), i-PRO Active Guard server should be installed in dedicated server PC. Please see 3.1.B i-PRO Active Guard server installed to dedicated server PC”.

In case of multi-sensor camera, extension software can be installed for each camera and each camera needs to be registered to i-PRO Active Guard server.

STEP2: The number of extension software

To calculate the bitrate of best shot, the number of extension software (Face, People, Vehicle, License plate and People Counting for 360-degree fisheye camera) should be considered. Since the amount of counting data by AI-VMD, AI Occupancy detection/AI People Counting, AI Scene Change detection is small, it is not necessary to consider it. Multiple extension software can be installed to each camera. (Ex, When People and Vehicle are installed to a camera, add 1 for People and Vehicle, respectively.)

		Face	People	Vehicle	License plate	People counting for 360-degree fisheye camera
The number of extension software						
# of people/vehicle [per camera, per hour]	Max.					
	Average.					

Maximum number of detections in total [per sec]	<input style="width: 200px; height: 20px;" type="text"/>
---	--

When “Maximum number of detections in total“ is less than 100, HDD or SSD is available for disk drive.
 When “Maximum number of detections in total“ is over 100, SSD is required.

STEP3 : Total bitrate server receives

Maximum bitrate of best shot image [Mbps]	
Maximum bitrate of People counting data [Mbps]	
Total bitrate of video recording for all cameras(*) [Mbps]	
Total bitrate that server PC receives [Mbps]	

If the “Total bitrate that server PC receives” exceeds 500Mbps, i-PRO Active Guard server should be installed in dedicated server PC.

* Storage and Bandwidth calculator for video is available on <https://i-pro.com/us/en/surveillance/storage-and-bandwidth-calculator/>

STEP4: Retention period and storage

	Face	People	Vehicle	License plate	People counting for 360-degree fisheye camera
Retention period (day) *Face, People, Vehicle, License Plate Images (1-31), count, heatmap, statistics(1-92) * Up to 366 days when using SQL Server Standard Edition					
Operating time (hours per day)					

Estimated used disk size for best shot images[GB]	
Estimated used disk size for count[GB]	
Estimated used disk size for database[GB]	

When "Estimated used disk size for database" is under 8 GB, SQL Server Express Edition or Standard Edition can be used. When more than 8GB, SQL Server Express Edition cannot to be used due to the limitation of Express Edition. Standard Edition is must. (Refer to 5.10)

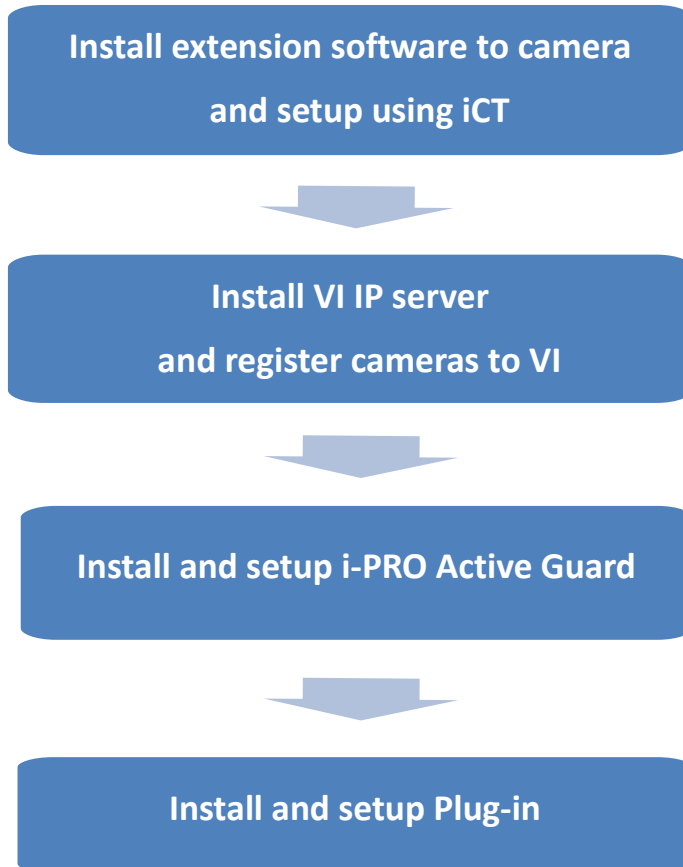
3.4. Ports used in i-PRO Active Guard server

The following table lists the default network ports used by i-PRO Active Guard server. These ports need to be allowed from firewall configurations.

Port number	Protocol	Port usage
1435	TCP	Connection to SQL server
8090	HTTP	Client plugin connection
8091	HTTPS	Client plugin connection
8092	HTTPS	Web configuration tool connection
8888	TCP	Internal process communication
50000	TCP	Internal process communication
50002	TCP	Internal process communication

4. Installation and setup

Procedure overview



4.1. Install extension software to camera and setup using iCT

Extension software is installed and configured using i-PRO Configuration Tool (iCT).

Please refer to below URL for downloading extension software and i-PRO Configuration Tool (iCT).

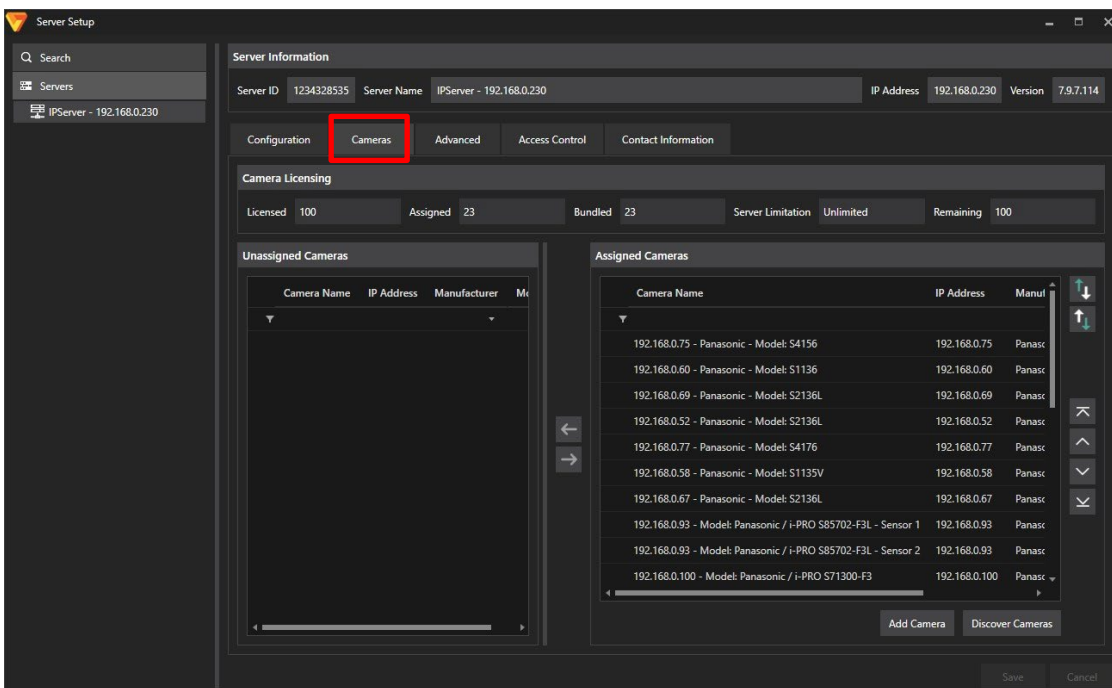
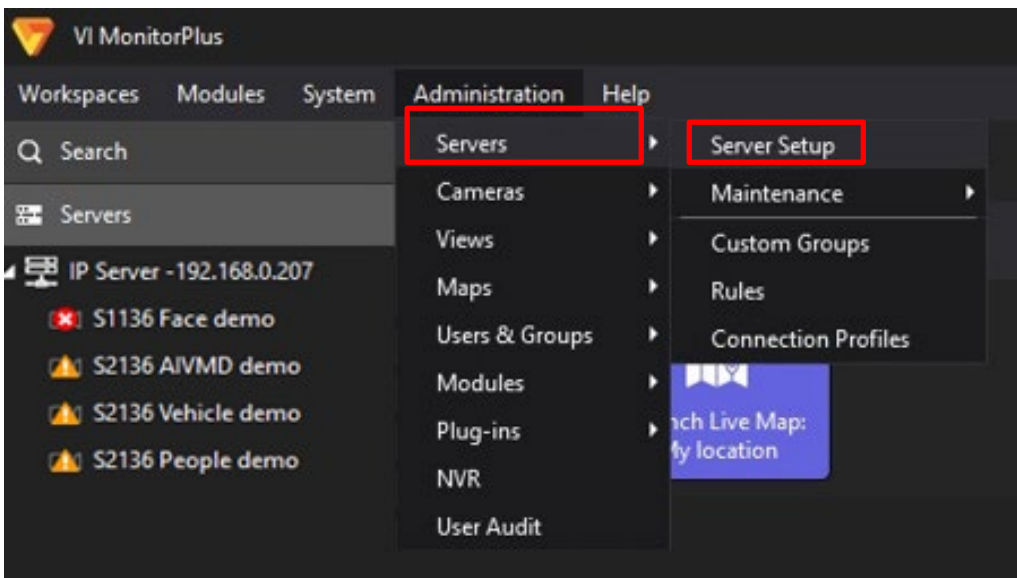
https://i-pro.com/products_and_solutions/en/surveillance/learning-and-support/knowledge-base/product-tips/active-guard-links

4.2. Install and setup VI IP server

Install the VMS server software and register the AI camera with the VMS client.
Install Plug-in to VI IP server and configure alarm port.
Register the camera in MAP as an Option setting

4.2.1. Install and register cameras to VI

Detail procedure about VI installation and basic setup are shown on VI's manual.
After installation, register AI cameras to VI IP server using VI MonitorPlus.
([Administration] – [Servers] – [Server Setup] – [Cameras])

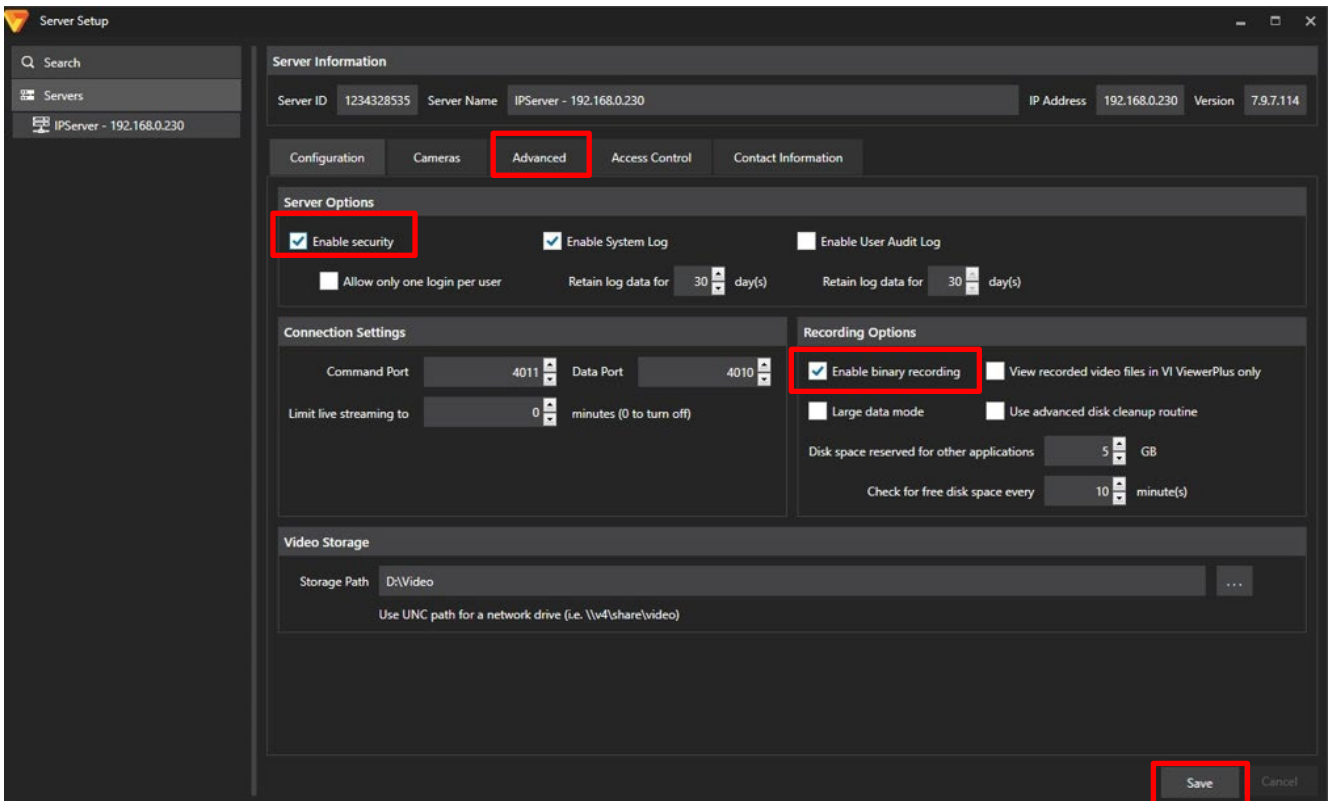
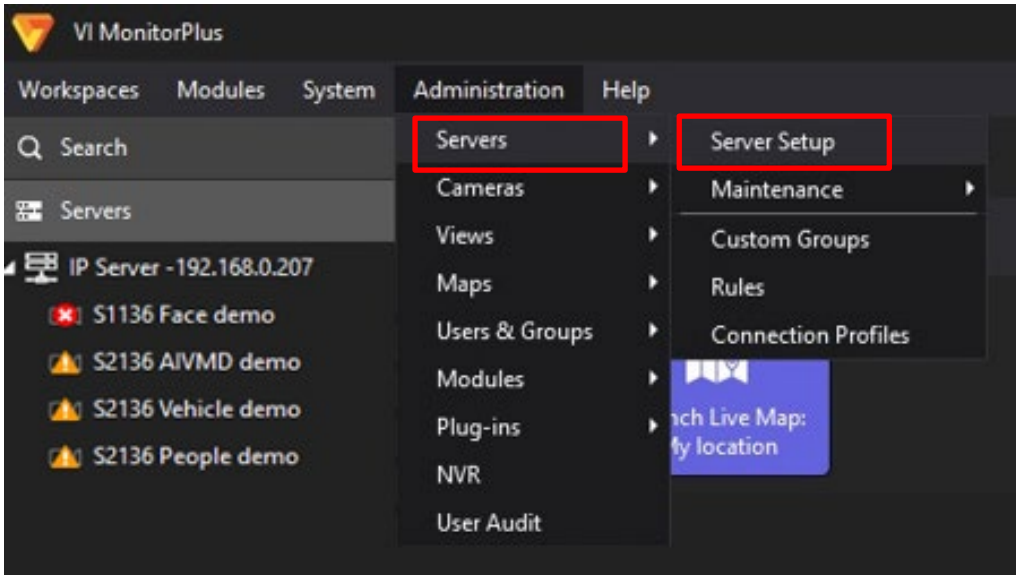


4.2.2. Setup VI IP server

4.2.2.1. Configure general settings

([Administration] - [Servers] - [Server Setup] - [Advanced] tab)

Check [Enable Security] and [Enable Binary Recording] and [Save].



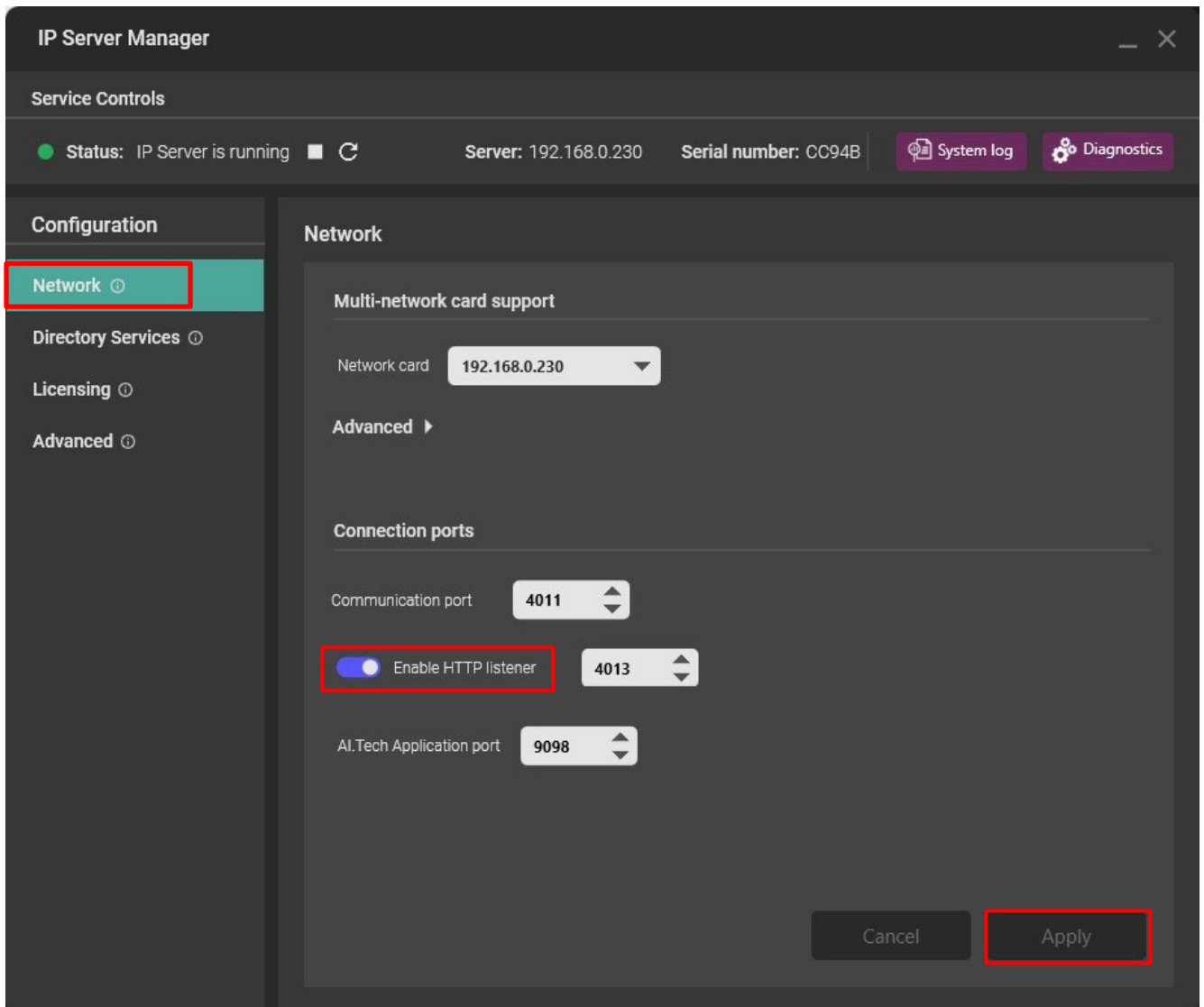
4.2.2.2. Configure the port to receive alarm

Click [Run as administrator] in the right click menu of the [Server Manager] icon on the desktop.

([Network Options])

Check [Enable HTTP Listener] and [Apply].

[Restart] from Service Controls.



4.2.2.3. Register cameras to Map (optional)

Using maps, operator can easily find the location of each best shot image on plugin screen.
See operation manual of VI in details.

Note)

In case of using “Live Map Setup,” the map you have set may not be displayed on some screens.
(ex. Camera filter screen)

4.2.3. Install Plug-in to VI IP server

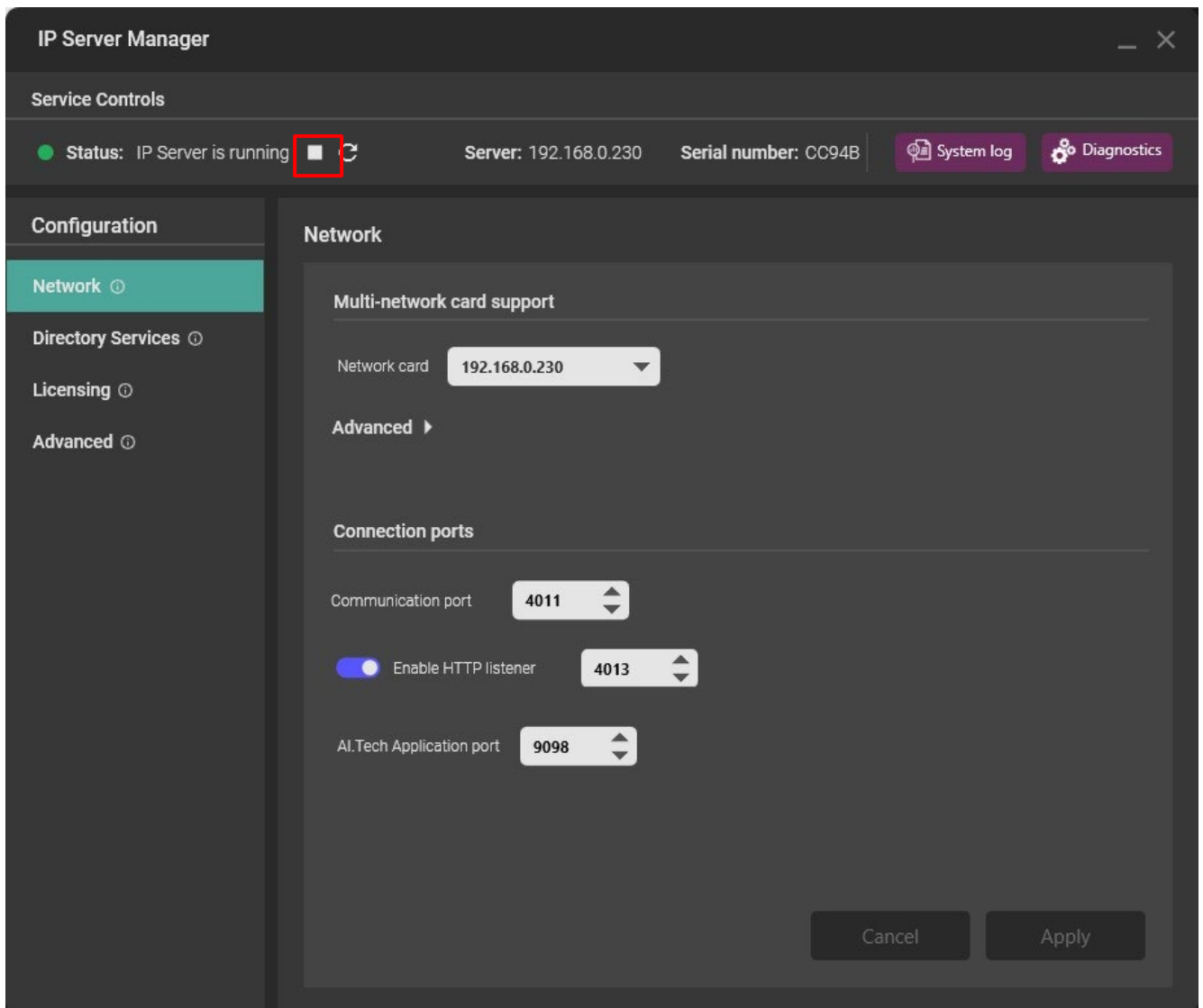
Install “i-PRO Active Guard Plug-in for Video Insight” software to VI IP server’s PC.

STEP1

Click [Run as administrator] in the right click menu of the [Server Manager] icon on the desktop.

STEP2

Click [Stop] button.



STEP3

Launch the "Active Guard Plugin.exe" as Administrator.

Click the [Next] button, then check mark [I accept the terms in the License Agreement], and then click the [Install]

When the installation complete window is displayed, click the [Finish] button.

STEP4

Restart the IP Server by click [Start] button.

4.3. Install and setup i-PRO Active Guard server

Download the installer from

https://i-pro.com/products_and_solutions/en/surveillance/learning-and-support/knowledge-base/product-tips/active-guard-links

Install i-PRO Active Guard server software. Configuration after installation can be done from web browser.

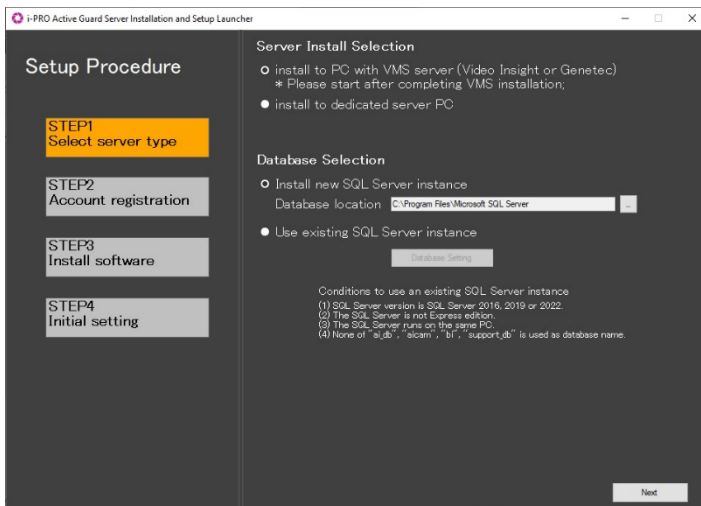
4.3.1. Install

Execute "MultiAIStartup.exe" as administrator (file path length must be less than 120).

When .NET Framework 4.8 is not installed on the PC, it will automatically be installed, and the main screen of the setup tool will be displayed after the installation.

Also, when you use Windows 10 version 20H2, Windows Update message. Execute "Windows Update" according to the message.

Check for [Agree] for License terms and [OK].



• Server Install Selection

Select [install to PC with VMS server] or [install to dedicated server PC].

Note)

When you install i-PRO Active Guard server to PC with VMS server, you need to install VMS server software in advance.

The image shows two screenshots from the i-PRO Active Guard Server Installation and Setup Launcher. The top screenshot is titled "Existing Database Setting" and features a dropdown menu for "Instance" and two text input fields for "User name" and "Password", with a "Connect" button below. The bottom screenshot is titled "Setup Procedure" and shows a sidebar with four steps: "STEP1 Select server type", "STEP2 Account registration" (highlighted in orange), "STEP3 Install software", and "STEP4 Initial setting". The main area contains "Administrator registration" and "User registration for plugin connection" sections, each with "Username", "Password", and "Confirm Password" fields. A "Next" button is at the bottom right. A small text block at the bottom left of the bottom screenshot provides password rules: (1) 2-byte characters, and 1-byte symbols " & ; : * / ' " < > = are not allowed for user name; (2) 2-byte characters, and 1-byte symbols " & ; : * / ' " < > = are not allowed for password; (3) For the password, use all types of characters from upper- and lowercase alphabetic characters, numbers, and symbols.

• Database Selection

Select [Install new SQL Server instance] or [Use existing SQL Server instance].

Note)

If you select [Install new SQL Server instance] you need to set Database location.

If you select [Use existing SQL Server instance] you need to select exiting Database Setting and input administrator credentials.

Click [Next].

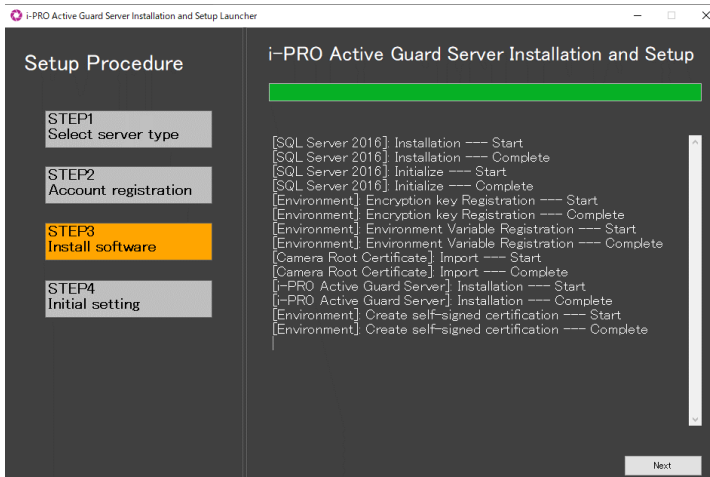
Register credentials and click [Next].

Note)

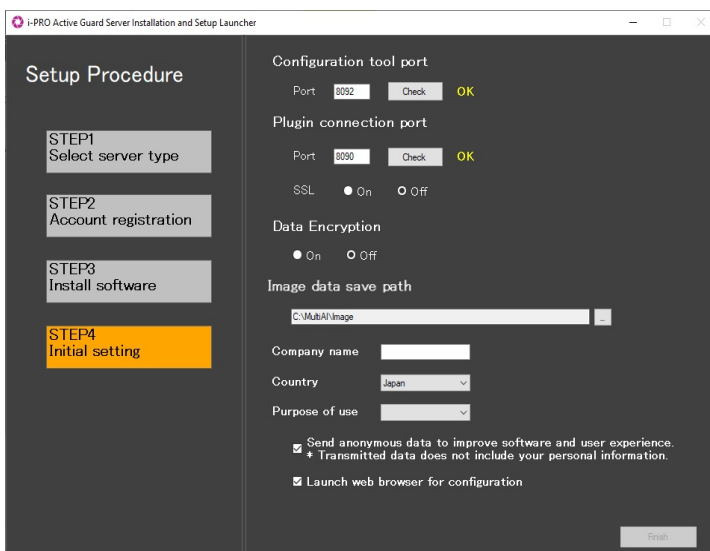
Make a note of the password you entered and keep it in a safe place.

When you forget the Administrator account, you can reset (Refer to 5.9).

When you forget the User account, you can reset (Refer to 4.3.7.2).



Installation starts and [Next] button will be appeared when finished. Click [Next].



Configure port number, SSL and Data encryption, Image data save path, Company name, Country and Purpose of use and click [Finish].

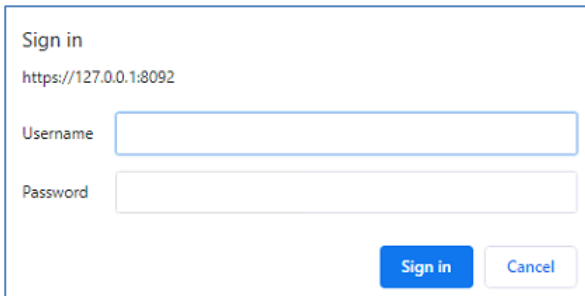
Note) When On is selected for Data Encryption, Image data will be encrypted. This setting cannot be changed after installation. Re-installation is required when you want to change after completing installation.

4.3.2. Setup i-PRO Active Guard server

4.3.2.1. Login

Access <https://<ip>:8092> using Google chrome, Microsoft Edge, or Firefox.

Input credentials.



Note)

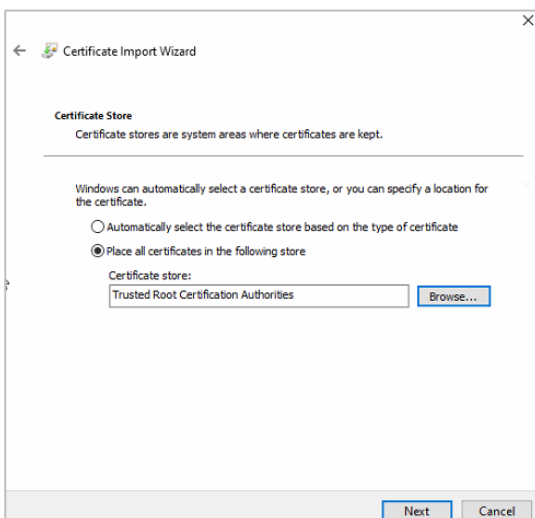
Credentials and port number configured by install tool 4.3.1 are used.

i-PRO Active Guard server uses self-signed certificate for web access.

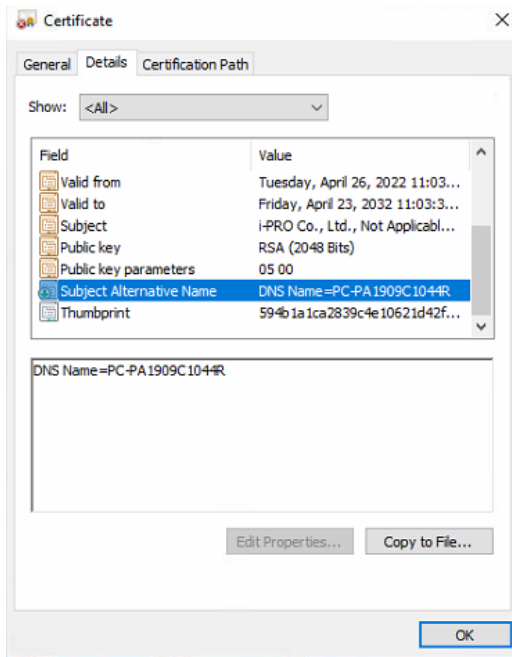
When the security alert window is displayed, click [advanced] and [Proceed to <ip> (unsafe)].

It is possible to prevent the warning display by performing the following procedure for each client PC to be accessed.

- 1) Copy "C:\MultiAI\apache24\conf\server.crt" in i-PRO Active Guard server PC to client PC.
- 2) Double click the file and click "Install Certificate."
- 3) Select "Local Machine" for Store Location
- 4) Select "Place all certificates in the following store and "Trusted Root Certification Authorities."



5) Confirm “Subject Alternative Name” from “Details.” DNS Name=xxxx is shown.




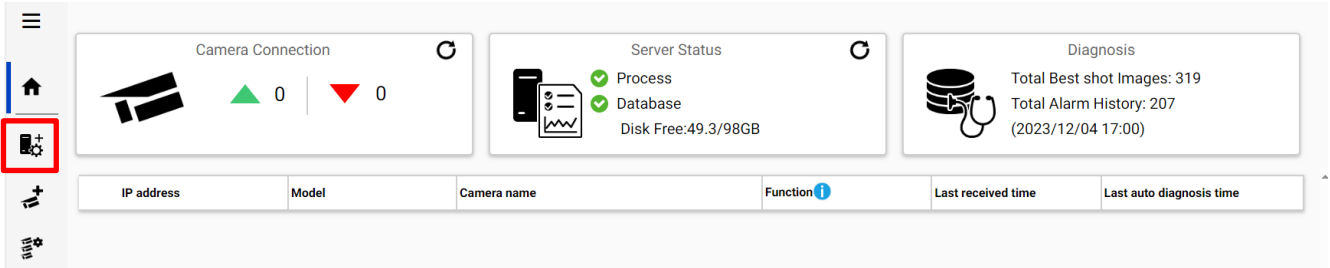
6) Open “C:\Windows\System32\drivers\etc\hosts” and add IP address of i-PRO Active Guard server and xxxx(DNS Name).

ex. 192.168.0.125 PC-PA1909C1044R

7) Access <https://xxxx:8092> using web browser.

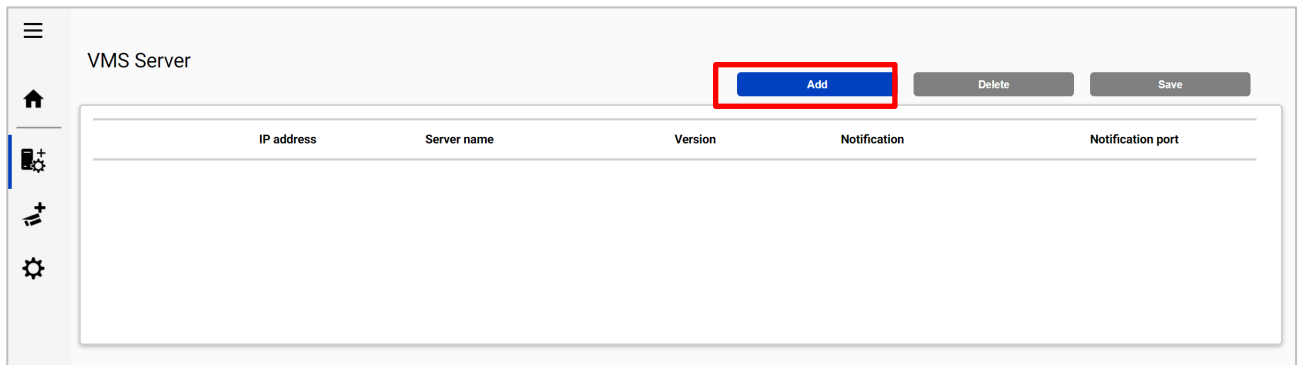
4.3.2.2. Register VMS

Click  (Register VMS)



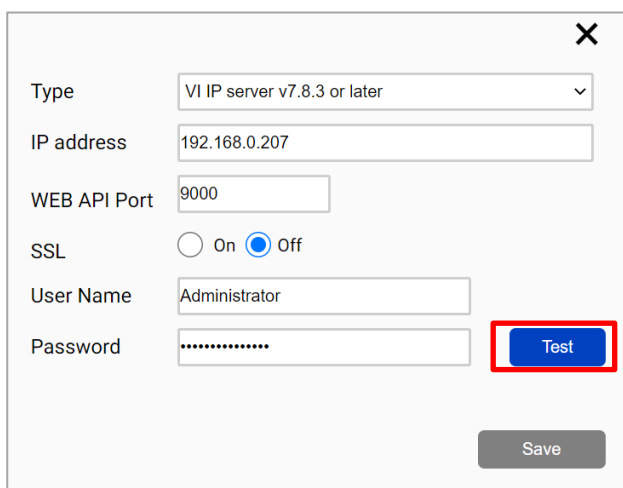
The dashboard overview includes three main sections: Camera Connection (0 up, 0 down), Server Status (Process, Database, Disk Free: 49.3/98GB), and Diagnosis (Total Best shot Images: 319, Total Alarm History: 207). Below these is a table with columns: IP address, Model, Camera name, Function, Last received time, and Last auto diagnosis time.

Click [Add]



The VMS Server management interface shows a table with columns: IP address, Server name, Version, Notification, and Notification port. An 'Add' button is highlighted in red.

Input VI IP server's information and click [Test]



The registration form includes the following fields and controls:

- Type: VI IP server v7.8.3 or later
- IP address: 192.168.0.207
- WEB API Port: 9000
- SSL: On Off
- User Name: Administrator
- Password:
- Buttons: Test (highlighted in red), Save

When "Succeeded" is shown, click [Save]

Type: VI IP server v7.8.3 or later

IP address: 192.168.0.207

WEB API Port: 9000

SSL: On Off

User Name: Administrator

Password: [Redacted]

Succeeded

Confirm VMS server is registered.

i-PRO Active Guard configuration

Restart process is required to finish configuration.

VMS Server

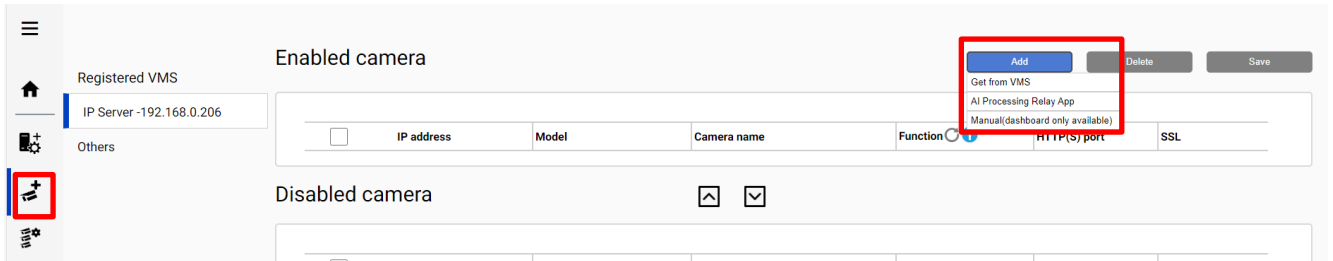
	IP address	Server name	Version	Notification	Notification port
1	192.168.0.206	IP Server -192.168.0.206	7.9.5.248	<input checked="" type="checkbox"/> Alarm <input type="checkbox"/> Notify all detected license plates <input type="checkbox"/> System error <input type="checkbox"/> Exceed the receiving data limit (data loss) <input type="checkbox"/> Reach the max usage of image storage drive (delete old images)	9000

Note) Restart button will be appeared on the top of screen, but you do not need click now.
You need to click Restart after completing all other configuration.

4.3.2.3. Register Cameras

Click  (Register Cameras)

Select [Add] - [Get from VMS]



Note)

- When camera is selected from [AI Processing Relay App], Only cameras to which have added AI Processing Relay App can be registered. Set up the cameras you want to relay in the Camera setting browser and register it to VMS in advance. Enter IP address of the camera, credentials, [Check] and [Register].

After registration is complete, the model in the camera list will be displayed as below.

“Non-AI camera model (relay AI camera model)”

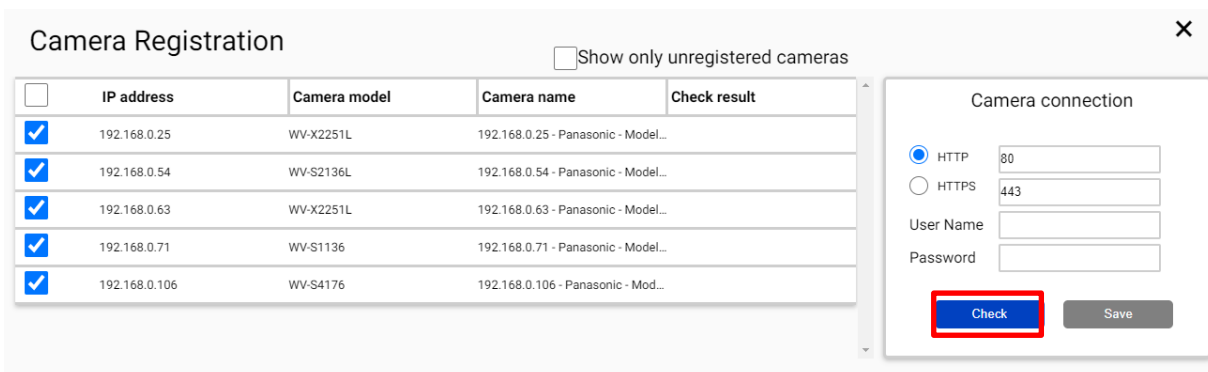
ex) WV-U2542LA(WV-S71300)

↑ ↑
 Non-AI model Relay AI model

- When camera is registered from [Manual (dashboard only available)], only dashboard function can be used. Plug-in cannot use the camera. Enter IP address of the camera, credentials, [Check] and [Register].

All i-PRO cameras (including not supported cameras) are shown.

Input camera’s credentials and click [Check].



Note)

Camera can be sorted by [IP address], [Camera Type] or [Camera Name].

Unregistered cameras can be filtered by checking [Show only unregistered cameras].

Icon related to AI function is shown for supported AI cameras.

Click [Save].

Camera Registration ✕

Show only unregistered cameras

<input type="checkbox"/>	IP address	Camera model	Camera name	Check result
<input checked="" type="checkbox"/>	192.168.0.54	WV-S2136L	192.168.0.54 - Panasonic - Model...	
<input checked="" type="checkbox"/>	192.168.0.63	WV-X2251L	192.168.0.63 - Panasonic - Model...	
<input checked="" type="checkbox"/>	192.168.0.71	WV-S1136	192.168.0.71 - Panasonic - Model...	
<input checked="" type="checkbox"/>	192.168.0.78	WV-S4176	192.168.0.78 - Panasonic - Model...	

Camera connection

HTTP

HTTPS

User Name

Password

- AI Face detection
- AI People detection
- AI Vehicle detection
- AI Video motion detection
- AI Sound detection
- AI Scene Change detection
- People Counting/Occupancy (*)
- Vehicle Counting
- On-site Learning Object Counting
- License plate detection

* The available functions differ depending on the installed application.

	Line Count	Area count	Heat map	Occupancy detection
WV-XAE200W	yes	-	-	-
WV-XAE207W	-	Yes	-	Yes
WV-XAE300W	yes	yes	yes	Yes

Confirm cameras are registered.

Restart process is required to finish configuration. [Restart](#)

Enabled camera [Add](#) [Delete](#) [Save](#)

Registered VMS
IP Server -192.168.0.206
Others

<input type="checkbox"/>	IP address	Model	Camera name	Function	HTTP(S) port	SSL
1 <input type="checkbox"/>	192.168.0.54	WV-S2136L	192.168.0.54 - Panasonic - Model: S21...		80	Off
2 <input type="checkbox"/>	192.168.0.63	WV-X2251L	192.168.0.63 - Panasonic - Model: X22...		80	Off
3 <input type="checkbox"/>	192.168.0.71	WV-S1136	192.168.0.71 - Panasonic - Model: S11...		80	Off
4 <input type="checkbox"/>	192.168.0.78	WV-S4176	192.168.0.78 - Panasonic - Model: S41...		80	Off

Disabled camera [^](#) [v](#)

<input type="checkbox"/>	IP address	Model	Camera name	Function	HTTP(S) port	SSL
--------------------------	------------	-------	-------------	----------	--------------	-----

Note)

If multiple VMS are registered, it is necessary to register cameras by selecting each VMS from [Registered VMS] and [Add] - [Get from VMS] .

If you registered the camera from [Manual (dashboard only available)], select [Others] in [Registered VMS] and check the registration status.

4.3.3. Restart process to apply changes

*To apply any configuration changes, restart process is required.

When you finish all configurations, click "Restart" from display bar above or Home screen.

Restart process is required to finish configuration.

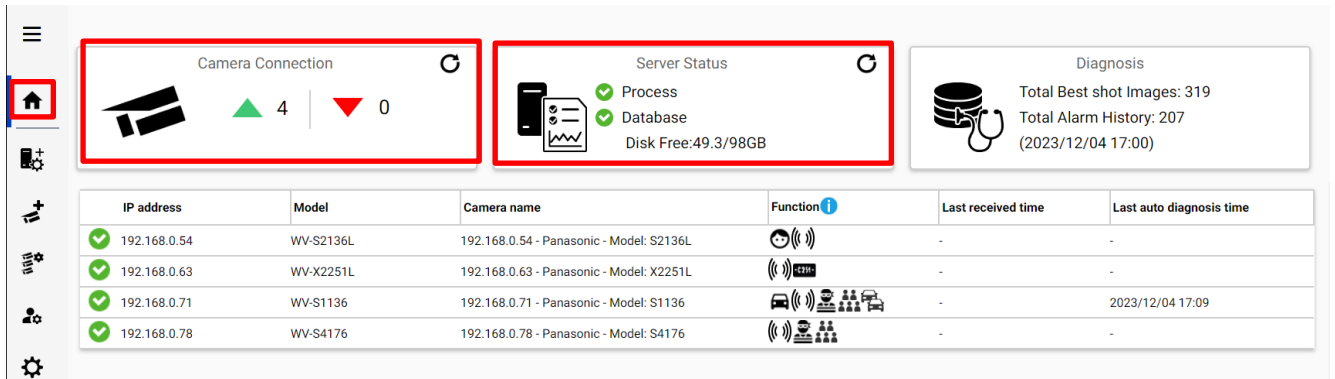
[Restart](#)

4.3.4. Check

Click  (Home)

- Check camera connection

Check all registered cameras are connected.





The screenshot shows the i-PRO Active Guard server interface. On the left is a navigation menu with icons for Home, Settings, and other functions. The main content area is divided into three panels:

- Camera Connection:** Shows a green triangle with the number 4 and a red triangle with the number 0. This panel is highlighted with a red box.
- Server Status:** Shows 'Process' and 'Database' with green checkmarks, and 'Disk Free: 49.3/98GB'. This panel is also highlighted with a red box.
- Diagnosis:** Shows 'Total Best shot Images: 319', 'Total Alarm History: 207', and '(2023/12/04 17:00)'.

Below these panels is a table with the following columns: IP address, Model, Camera name, Function, Last received time, and Last auto diagnosis time.

IP address	Model	Camera name	Function	Last received time	Last auto diagnosis time
192.168.0.54	WV-S2136L	192.168.0.54 - Panasonic - Model: S2136L		-	-
192.168.0.63	WV-X2251L	192.168.0.63 - Panasonic - Model: X2251L		-	-
192.168.0.71	WV-S1136	192.168.0.71 - Panasonic - Model: S1136		-	2023/12/04 17:09
192.168.0.78	WV-S4176	192.168.0.78 - Panasonic - Model: S4176		-	-


 means the number of cameras connected. (Meta data session between camera and i-PRO Active Guard server).

 means the number of cameras disconnected. When disconnection detected, confirm network connection to camera.

- Check Server status

Check Process and Database shows status green. 

4.3.5. System configuration (optional)

Click  (Configure system) and change settings if needed.

4.3.5.1. General

Select [Auto], [English] or [Japanese] for [Language]. (Default: Auto).

Check or uncheck for [Send anonymous data to improve software and user experience].

Note) When the language configuration for web browser is other than English or Japanese, English is shown.

4.3.5.2. Client plugin connection

Select [HTTP] or [HTTPS] and port number (Default: Set by install tool at 4.3.1)

Client plugin connection

<input checked="" type="radio"/> HTTP	<input type="text" value="8090"/>	(1-65535)
<input type="radio"/> HTTPS	<input type="text" value="8091"/>	(1-65535)

Note) For secure communication, HTTPS is recommended.

4.3.5.3. Configuration page access

Set port number for configuration tool (Default: Set by install tool at 4.3.1)

Configuration tool access port


HTTPS	<input type="text" value="8092"/>	(1-65535)
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Note) When you change and restart software at 4.3.2, you need to access `https://<ip>:<port>` using new port number. Make a note not to forget.

4.3.5.4. Database

Configuration item	Comment
Storing images in database	<p>All data(default): Store all data including images.</p> <p>Only alarm and statistics data: Store only alarm and statistics data</p> <p>Only statistics data: Store only statistics data</p>
License plate number	<p>Enable/Disable can be configured. (Default: Enable)</p> <p>Sets whether to store the license plate number in SQL Server.</p>
Retention period	<p>[For face image, people image, vehicle image, license plate image and alarm history]</p> <p>Using SQL Server Express Edition:1 – 31 days (Default: 31) can be set.</p> <p>Using SQL Server Standard Edition:1 – 366 days (Default: 366) can be set.</p> <p>[For Count, heat map, statistics]</p> <p>Using SQL Server Express Edition:1 – 92 days (Default: 92) can be set.</p> <p>Using SQL Server Standard Edition:1 – 366 days (Default: 366) can be set.</p> <p>Note)</p> <p>Data after retention period will be deleted at night (0:00am ~ 3:30 am). If the server is shut down, data cannot be deleted, so new data may not be stored due to lack of storage space.</p>
CSV backup	<p>Enable/Disable can be configured. (Default: Disable)</p> <p>When enable and the retention period for counting data expires, the data will be deleted from SQL server but automatically backed up as CSV file.</p> <p>Data in CSV file cannot be shown on dashboard.</p> <p>Note) When enable, [Max usage of image storage drive] will be also enabled automatically.</p>
Max usage of image storage drive(*)	<p>Enable/Disable and data size 10- 2000 (GB) can be configured.</p> <p>(Default: Disable)</p> <p>Note)</p> <p>When enabled, the used disk space of drive for storing best shot images exceed the setting value, old image will be deleted automatically. This works every hour.</p> <p>You can manage data size using this configuration that i-PRO Active Guard server stores. Used disk space equals total volume minus free space.</p>
Image data save path	<p>Save path for images (Default: C:¥MultiAI¥Image)</p> <p>Note)</p> <p>When you change save path, all existing image data cannot be used from Plug-in.</p>
SQL Server data save path	<p>SQL Server data save path is shown set by install tool at 4.3.1. You cannot change this after installation.</p>

Configuration item	Comment
Max frequency of receiving object data (per sec)	50 -300 (Default: 100) Note: If the number of object data from all cameras exceed the value, those object data will be discarded to reduce disk access so that system is stable. SSD is required in case of 100 or more. When you set over 100 using HDD, system will be unstable.
Data encryption	On/Off is shown set by install tool at 4.3.1. You cannot change this after installation.

* Simple calculator can be used by clicking 

Input parameters of your system and click Calc. Estimate used disk space is shown.

X

Number of cameras

Face People Vehicle People counting

Average number of object per camera, per hour

Face People Vehicle

Retention period(day)

Face People Vehicle People counting

System operating time(hours per day)

Face People Vehicle People counting

Calc

Estimated used disk space

image:-GB

database:-GB

*If you need calculations that include extension software other than the above, please access the following URL and confirm.
https://i-pro.com/products_and_solutions/en/surveillance/learning-and-support/tools/calculators#tbl_ai_vi

Note)

Estimated used disk space is just a reference. Actual data size highly depends on actual environment.

4.3.5.5. Initialization

Image: delete all best shot images.

Alarm history: delete all alarm history

Statistics data: delete statistics data.

Watchlist: delete all face watchlist, people watchlist, vehicle watchlist and lpr watchlist (also lpr group and registered license plate). See operation manual about watchlist.

Configuration: delete all registration data (VMS, Camera, and logs) except for port and user account.

Note)

It may take time to delete image depending on the number of images. When deleting, button will be as follows. Please update page to confirm the latest status.


Image Alarm history Statistics data

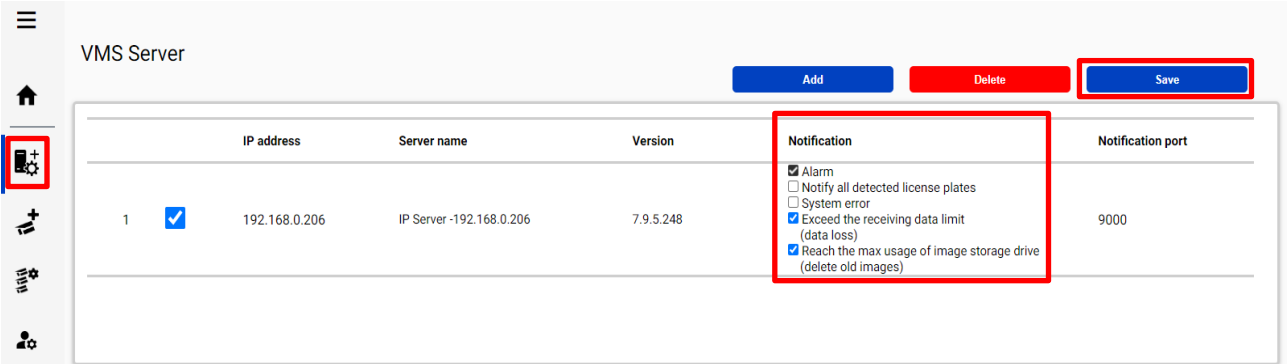
Watchlist Configuration
(Except for port and user account)

Now deleting

4.3.6. Notification to VMS Server (optional)

Some alarms and notification related to i-PRO Active Guard server's system failure can be enabled. Actions on VMS side also can be configured (4.7.1.8 System alarm of i-PRO Active Guard server)

Click  (Register VMS)



	IP address	Server name	Version	Notification	Notification port
1	192.168.0.206	IP Server-192.168.0.206	7.9.5.248	<input checked="" type="checkbox"/> Alarm <input type="checkbox"/> Notify all detected license plates <input type="checkbox"/> System error <input checked="" type="checkbox"/> Exceed the receiving data limit (data loss) <input checked="" type="checkbox"/> Reach the max usage of image storage drive (delete old images)	9000

Check following items that you want and [Save].

Notify all detected license plates

Notifies all detected license plates received by the i-PRO Active Guard server.

System error

Error that i-PRO Active Guard server detects. (ex. camera connection error between camera and i-PRO Active Guard server.)

Exceed the receiving data limit (data loss)

When the data exceeds the setting value for “Max frequency of receiving object data (per sec)” configured at 4.3.5.4.

Reach the max usage of image storage drive (delete old images)

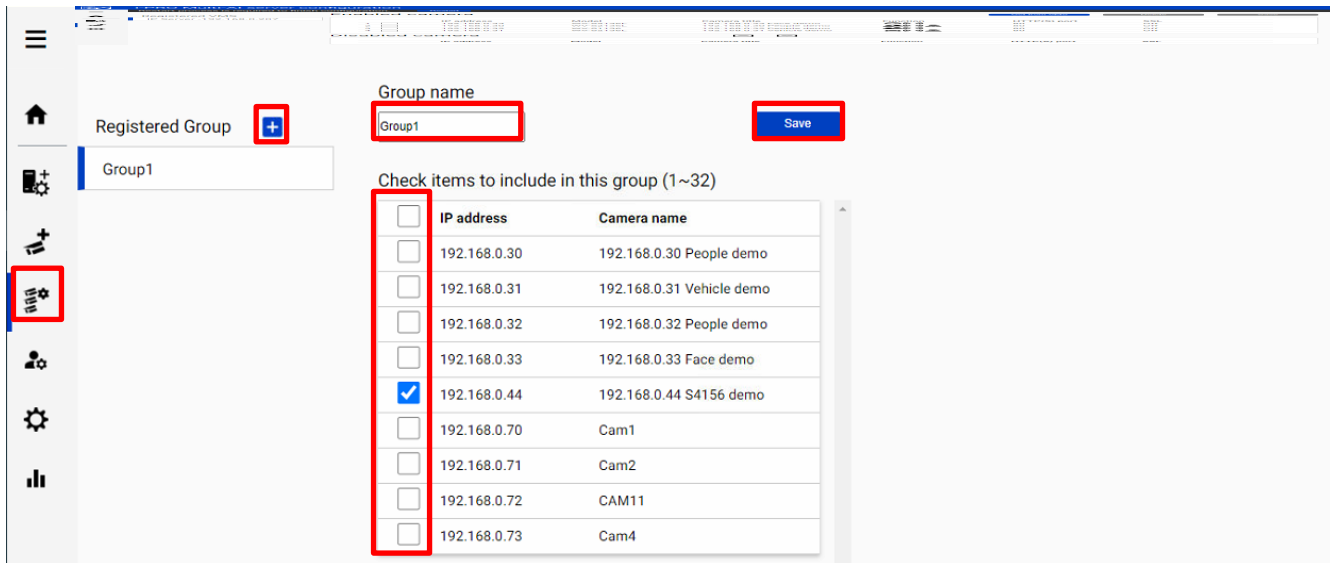
When the usage of image storage drive exceeds the setting value for “Max usage of image storage drive (GB)” configured at 4.3.5.4.

4.3.7. Dashboard configuration (optional)

4.3.7.1. Camera group configuration

When displaying the chart on the dashboard, it is possible to display it as statistical information for each group consisting of multiple cameras instead of statistical information for each camera.

Click  (Camera Group).



IP address	Camera name
<input type="checkbox"/>	192.168.0.30 People demo
<input type="checkbox"/>	192.168.0.31 Vehicle demo
<input type="checkbox"/>	192.168.0.32 People demo
<input type="checkbox"/>	192.168.0.33 Face demo
<input checked="" type="checkbox"/>	192.168.0.44 S4156 demo
<input type="checkbox"/>	192.168.0.70 Cam1
<input type="checkbox"/>	192.168.0.71 Cam2
<input type="checkbox"/>	192.168.0.72 CAM11
<input type="checkbox"/>	192.168.0.73 Cam4


Click [+] button, input Group name, check for cameras and [Save].

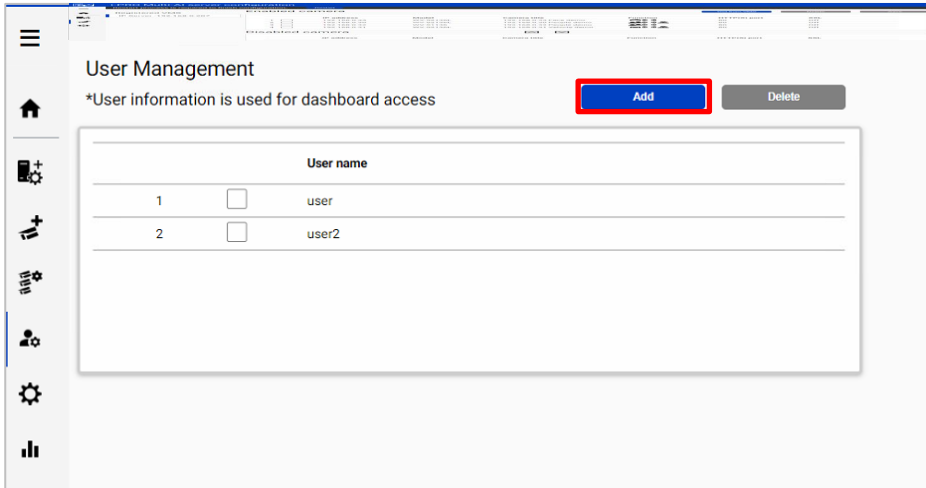
Note) Up to 16 groups can be configured.

To delete camera group, right click the group and select [Delete Camera Group].

4.3.7.2. User Management

By registering multiple users, it is possible to customize the dashboard display for each user.

Click  (User Management) and [Add].



Enter [User name], [Password] and [Retype password] and then [Save]

User name (1 to 32 characters)

Password (8 to 32 characters)

Retype password

(1) 2-byte characters, and 1-byte symbols " & ; \ ' ^ = , < > | are not allowed for user name

(2) 2-byte characters, and 1-byte symbols " & ; \ ' ^ = , < > | are not allowed for password

(3) For the password, use all types of characters from
upper- and lowercase alphabetic characters, numbers, and symbols.

Note) User information can also be used for plugin connection.

[User name] set by install tool at 4.3.1 is shown as default. [Password] is not shown.

If you forget password, delete the user, and register again.

4.3.8. More information about status (optional)

4.3.8.1. Camera Connection

IP address	Model	Camera name	Function	Last received time	Last auto diagnosis time
192.168.0.54	WV-S2136L	192.168.0.54 - Panasonic - Model: S2136L		2021/06/16 19:54	2021/06/16 19:42
192.168.0.63	WV-X2251L	192.168.0.63 - Panasonic - Model: X2251L		2021/06/16 19:54	2021/06/16 19:47
192.168.0.71	WV-S1136	192.168.0.71 - Panasonic - Model: S1136		2021/06/16 19:54	2021/06/16 19:52
192.168.0.78	WV-S4176	192.168.0.78 - Panasonic - Model: S4176		2021/06/16 19:33	2021/06/16 19:37

: Camera is connected.

: Camera is not connected.

: Camera is connected, but last auto diagnosis result error.

Metadata session is connected, but AI application on camera side may not work well. Check AI application on camera side is installed, schedule setting is on and also check whether “Last received time.”

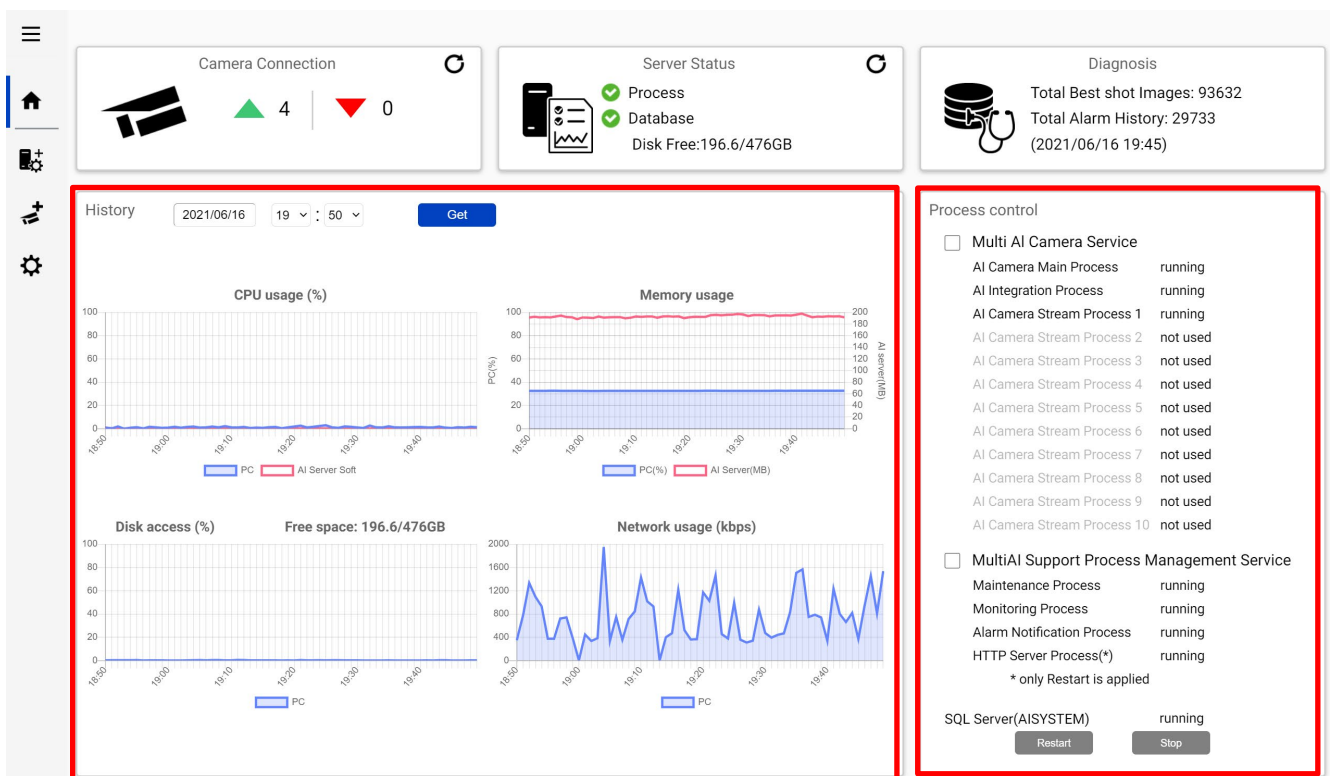
“**Last received time**” shows the last detection time that the camera detected face, people, vehicle, license plate or alarm. If this time is older than when camera captured actually objects, AI application on camera side may not work well.

“**Last auto diagnosis time**” is the latest time when i-PRO Active Guard server tested connection to camera and database. The test executes every 5 minutes for a camera in order. When error occurs, the time is shown in red color. In that case, check Log and confirm the status of camera or database.

Note)

When schedule setting for the AI application is off, last auto diagnosis will be failed. If it is intended, please ignore this indicator.

4.3.8.2. Server Status



History

History shows CPU usage, Memory usage, Disk access and Network usage of the i-PRO Active Guard server. CPU usage and Memory usage show the total value in the PC and i-PRO Active Guard server. Data for one hour from specified date is shown. Select date and [Get] for previous date (within 31 days can be shown).

These data can be used to check whether PC performance is stable after installation or investigation of the system trouble.

Note) Data may not be shown correctly when PC is power off or i-PRO Active Guard server software is stopped for some duration.

Process Control

Processes related to i-PRO Active Guard server can be restarted or stopped. When the system is running, please check all processes show “running” or “not used.”

(The number of used “AI Camera Stream Process x” depends on the number of registered cameras.)

When it is required to restart PC, check [Multi AI Camera Service] and [MultiAI Support Process Management Service] are stopped (also see 5.6.1).

When investigation to system trouble is required, please check status, and try to [Restart].

4.3.8.3. Diagnosis

Camera Connection: 4 (Green), 0 (Red)

Server Status: Process, Database, Disk Free:196.6/476GB

Diagnosis: Total Best shot Images: 93632, Total Alarm History: 29733 (2021/06/16 19:45)

Record summary: All Best shot images, Date: 2021/06/16, Get

IP address	16th Jun	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00
192.168.0.30	1046	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	347
192.168.0.31	395	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	103
192.168.0.32	2156	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	668
192.168.0.33	308	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	36

Information: System version:1.0.0, OS:Windows 10 Pro, version 1903, build 18362.387, CPU:Intel(R) Core(TM) i9-9900K CPU @ 3.60GHz, Virtual memory: 4864MB, Web version:-, CPU:Intel(R) Core(TM) i9-9900K CPU @ 3.60GHz, Tamper Protection: invalid, Fastboot: valid, Windows update:invalid

Record summary

Record summary shows the number of received data from each camera on the specified date.

Selectable items depend on the registered camera and AI application.

*Selectable items

- All Best shot images
- Face Best shot images
- People Best shot images
- Vehicle Best shot images
- License plate images
- All alarm
- Registered face detection
- Registered people detection
- AI-VMD
- Sound detection
- AI Occupancy detection
- Registered vehicle detection
- AI Scene Change detection
- Registered License plate detection
(Also Includes LPR watchlists with "Detect by vehicle appearance only" set to on)
- Unregistered License plate detection

Note)

About notification of LPR Detection.

- License plate detection

You will be notified when you set "Notify all detected license plates" on the screen of Register VMS.

See 4.3.6.

- Registered License plate detection

You will be notified when you set watchlist to below settings on i-PRO Active Guard plug-in.

(1) set "Detect by vehicle appearance only" to off,

and set "Trigger" to "When license plates in the selected group was detected."

(2) set "Detect by vehicle appearance only" to on.

- Unregistered License plate detection

You will be notified when you set watchlist to below settings on i-PRO Active Guard plug-in.

(1) set "Detect by vehicle appearance only" to off,

and set "Trigger" to "When other license plate which is not in the selected group was detected."


Information

Software version, OS, windows configuration is shown.

4.3.8.4. Display log

The dashboard overview includes three main sections: Camera Connection (4 green, 0 red), Server Status (Process and Database OK, Disk Free: 49.2/98GB), and Diagnosis (Total Best shot Images: 680, Total Alarm History: 225). Below these is a table of camera connections.

IP address	Model	Camera name	Function	Last received time	Last auto diagnosis time
192.168.0.54	WV-S2136L	192.168.0.54 - Panasonic - Model: S2136L	📶	-	2023/12/04 18:04
192.168.0.63	WV-X2251L	192.168.0.63 - Panasonic - Model: X2251L	📶	2023/12/04 18:09	-
192.168.0.71	WV-S1136	192.168.0.71 - Panasonic - Model: S1136	📶 🚚 🚚	2023/12/04 18:12	2023/12/04 18:09
192.168.0.78	WV-S4176	192.168.0.78 - Panasonic - Model: S4176	📶 🚚 🚚	2023/12/04 18:12	-

Click  to show logs.

Overview of system error can be displayed. Select date and error level ([error], [warning] and [information]) and click [Get].

Detail for each message and troubleshoot for Code is shown on 6 Troubleshooting.

The Log display interface includes filters for date (2021/05/09 to 2021/05/10) and level (error, warning, information). A 'Get' button is present. The log table shows several warning messages related to server process failures.


Date	Level	Category	Message	Code
2021/05/10 21:02	Warning	Server process	Cannot receive test data from camera (1724635326)	010205
2021/05/10 21:02	Warning	Server process	Failed to send test data request to camera (1724635326) (The remote server returned an error: (400) Bad Request.)	010204
2021/05/10 20:57	Warning	Server process	Cannot receive test data from camera (118488675)	010205
2021/05/10 20:57	Warning	Server process	Failed to send test data request to camera (118488675) (The remote server returned an error: (400) Bad Request.)	010204
2021/05/10 20:52	Warning	Server process	Cannot receive test data from camera (730645128)	010205

Note) Maximum 1000 logs can be shown at the same time.

4.3.8.5. Download log

The screenshot shows a dashboard with three main sections: Camera Connection, Server Status, and Diagnosis. The Camera Connection section shows 4 green triangles and 0 red triangles. The Server Status section shows Process and Database as green checkmarks and Disk Free: 49.2/98GB. The Diagnosis section shows Total Best shot Images: 680 and Total Alarm History: 225 (2023/12/04 17:00). Below these sections is a table with columns: IP address, Model, Camera name, Function, Last received time, and Last auto diagnosis time.

IP address	Model	Camera name	Function	Last received time	Last auto diagnosis time
192.168.0.54	WV-S2136L	192.168.0.54 - Panasonic - Model: S2136L		-	2023/12/04 18:04
192.168.0.63	WV-X2251L	192.168.0.63 - Panasonic - Model: X2251L		2023/12/04 18:09	-
192.168.0.71	WV-S1136	192.168.0.71 - Panasonic - Model: S1136		2023/12/04 18:12	2023/12/04 18:09
192.168.0.78	WV-S4176	192.168.0.78 - Panasonic - Model: S4176		2023/12/04 18:12	-

Click  to download log.

The dialog box contains the following text:

[Download system information](#)
*Camera connection, Server status, Diagnosis, Log

Download technical internal log
*file name shows the time of log included

[Latest](#)
[2021-05-10_180749290](#)
[2021-05-09_180725321](#)

Download system information

Download Camera Connection, Server Status, Diagnosis and Log loaded on screen as json format.

Download technical internal log

Download detail log. File name “yyyy-mm-dd_hhmmssfff” shows the time of log included. Log files are zipped automatically depending on the duration or size and the filename shows the time zipped.

Ex. “2021-05-10_180749290” includes logs from 2021-05-09 18:07:25.321 to 2021-05-10 18:07:49.290 on this example.

4.3.9. Windows setting

Following Windows configuration is required for i-PRO Active Guard server's work to be stable.
Location of configuration may differ depending on OS.

4.3.9.1. Disable Real-time protection and Tamper protection

This is required for i-PRO Active Guard server to keep the basic performance.

In case of Windows 10,

(Start – Settings – System – Update & Security – Windows Security – Virus & threat protection – Virus & threat protection - Virus & threat protection settings – Manage settings)

Off the “Real-time protection” and “Tamper protection.”

Windows server OS does not have Tamper protection feature.

4.3.9.2. Disable Windows Update service

Windows updates are important to keep the system up to date, but auto update may require an unplanned restart and some a Windows feature may influence the i-PRO Active Guard server. To avoid unplanned restarts or influences, disable Windows update service.

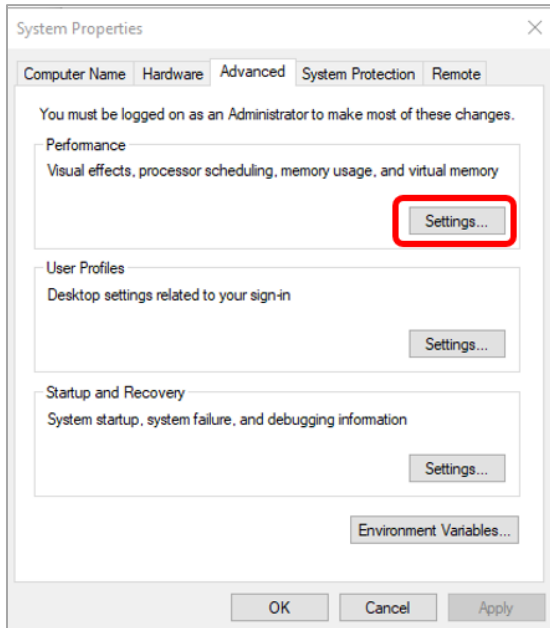
In case of Windows 10,

Start – Windows Administrative Tools – Services – right click “Windows Update” – Properties – select “Disabled” for “Startup type” and click OK.

4.3.9.3. Virtual memory setting

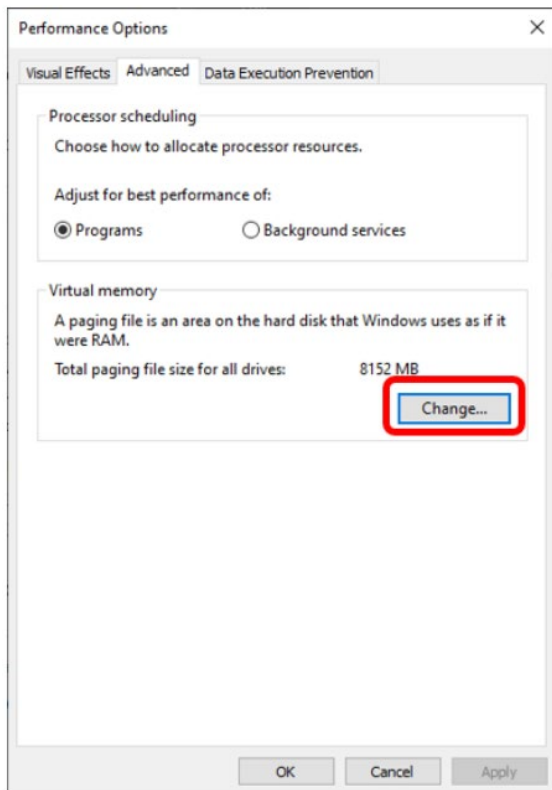
If the virtual memory is insufficient, the database may stop.

Follow the procedures below to check the virtual memory setting.



In case of Windows 10,
Start – Windows System – Control Panel – System and Security – System – Advanced system setting

Select Settings



Select “Advanced” tab on “Performance Options” screen and click “Change...” button of Virtual memory.

Confirm that “Automatically manage paging file size for all drives” is checked on “Virtual Memory” screen. Check it and click “OK” button.

4.4. Install and setup Plug-in for VI MonitorPlus

Section 4.2.3 should be completed in advance to install Plug-in to VI MonitorPlus.

4.4.1. Install Plug-in to VI MonitorPlus

STEP1

Click the [Modules] tab, then select [Plugins] - [Manage Plugins].

The [Plugin Manager] window will be displayed.

STEP2

Click the [i-PRO Active Guard Plug-in] in the [Plugin Manager] window. Then click the [Install] button.

STEP3

Follow the instructions on the screen to proceed with the installation.

STEP4

When the installation complete window is displayed, click the [Finish] button.

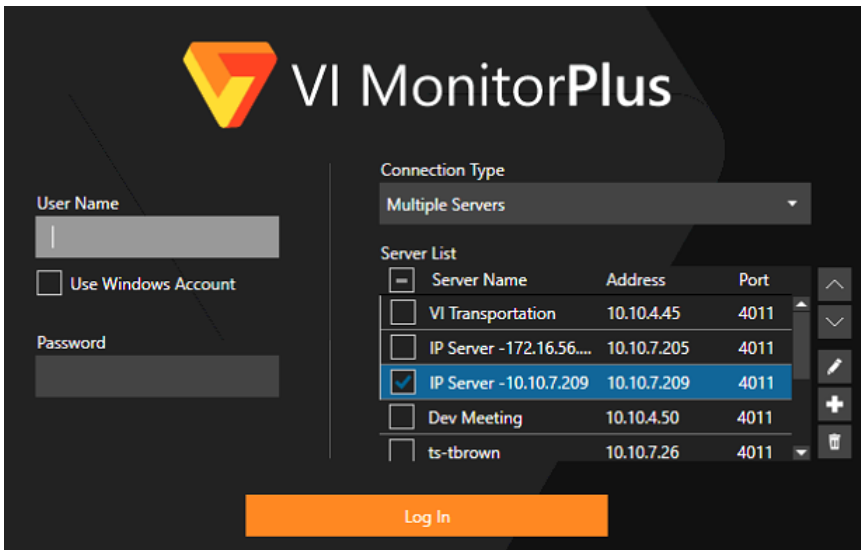
Click the [Yes] button to restart VI MonitorPlus.

STEP5

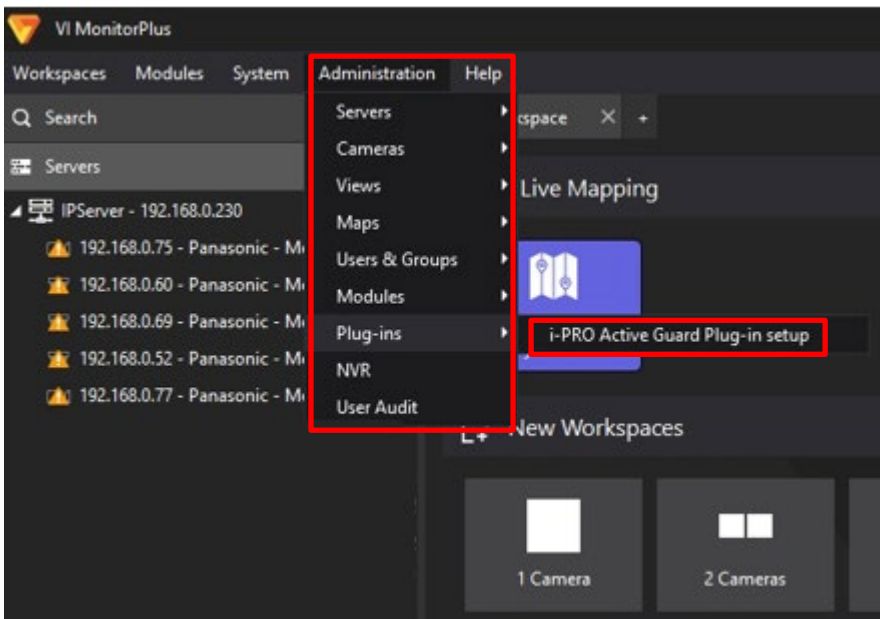
Log in again, and confirm that [i-PRO Active Guard Search] and [i-PRO Active Guard Event] is normally displayed in the [Application Plug-ins] area.

4.4.2. Connection to i-PRO Active Guard server

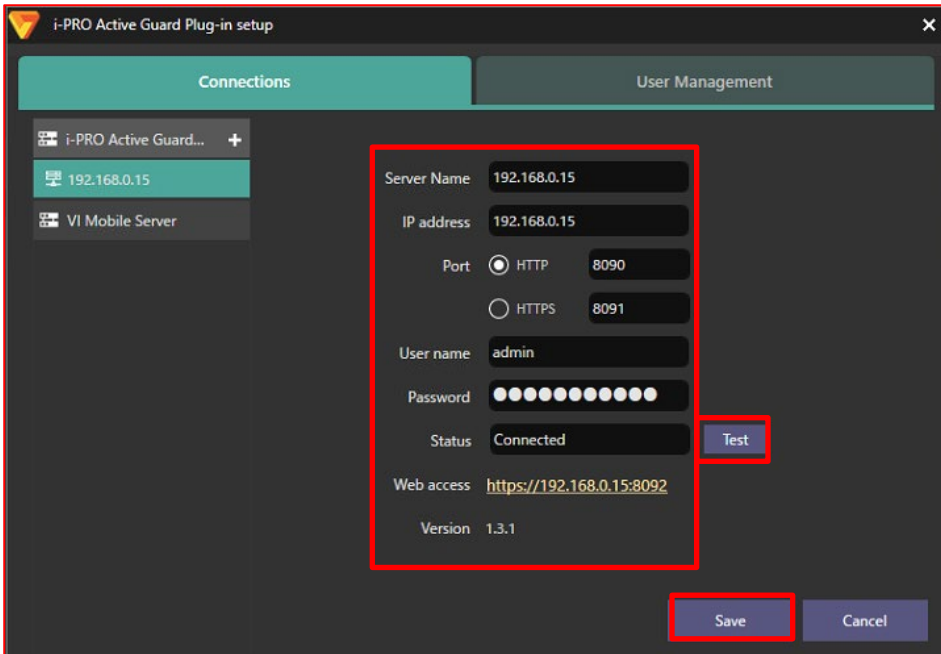
Login to VI MonitorPlus as a user who has admin credential.



Then select [Administration] – [Plug-ins] – [Active Guard Plug-in setup]



Input i-PRO Active Guard server information and Click [Test] and then click [Save].

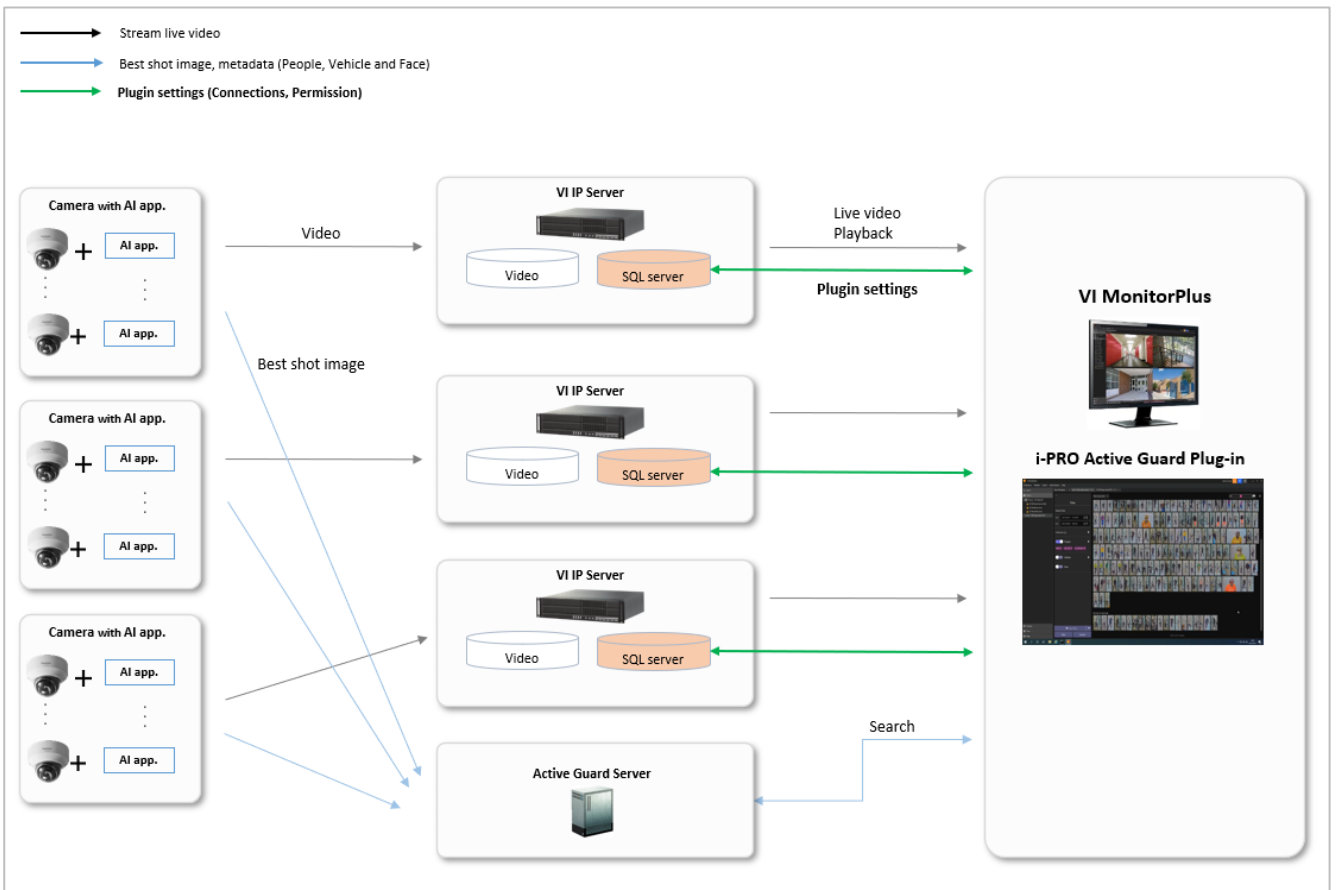


Note)

If Test failed, please check if credential is correct.

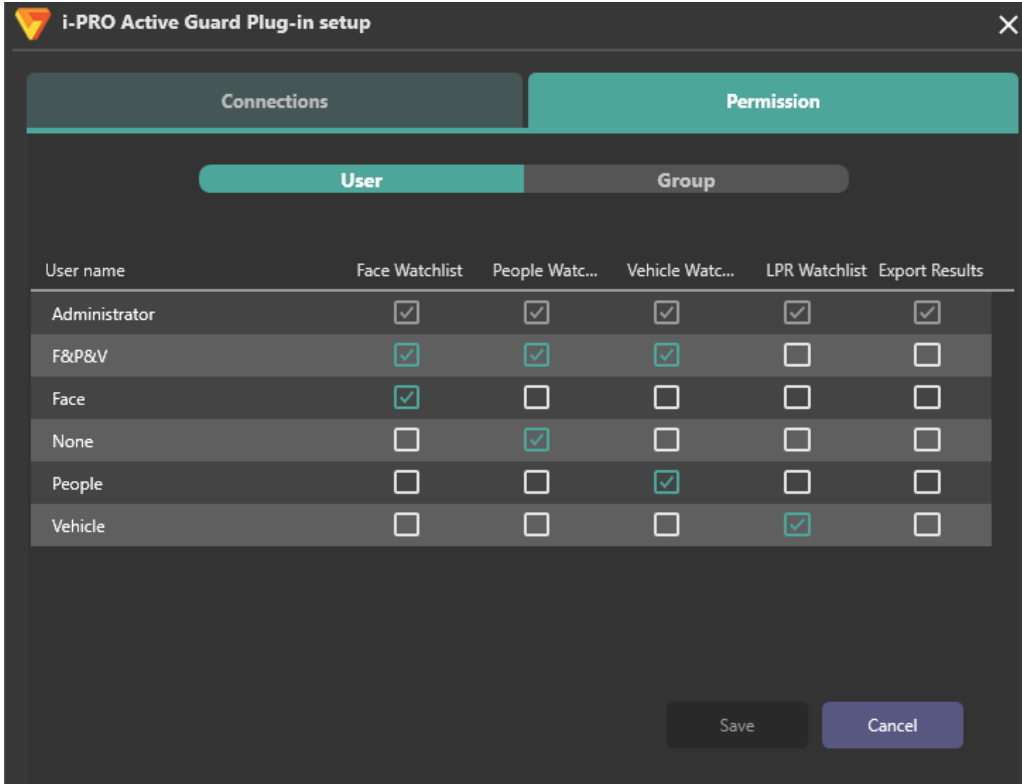
Note)

Connections and User Management settings in Plug-in setup is saved to all SQL databases of VI IP Servers which are connected to VI MonitorPlus.



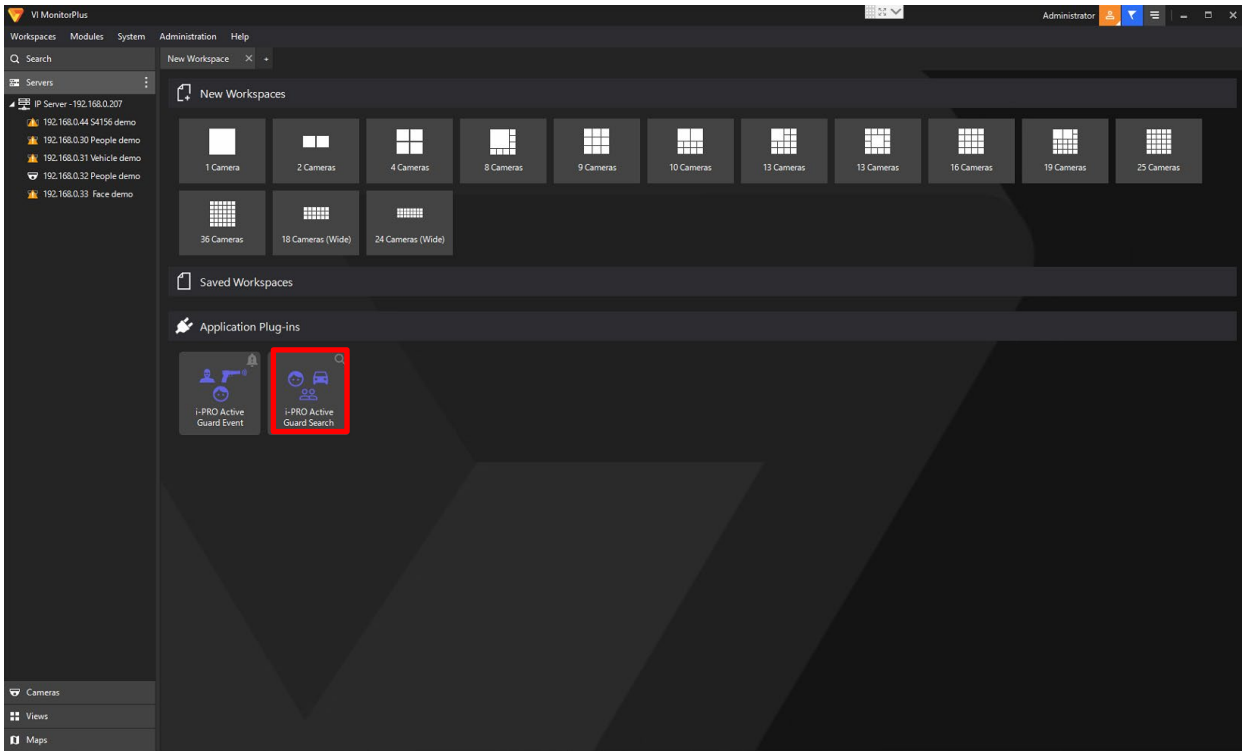
4.4.3. User Management (Optional)

Configure [User Management] for [Face Watch list] and [People Watchlist] and [Vehicle Watchlist] and [LPR Watchlist] access and [Export Results] for each user or group registered in VI IP server.



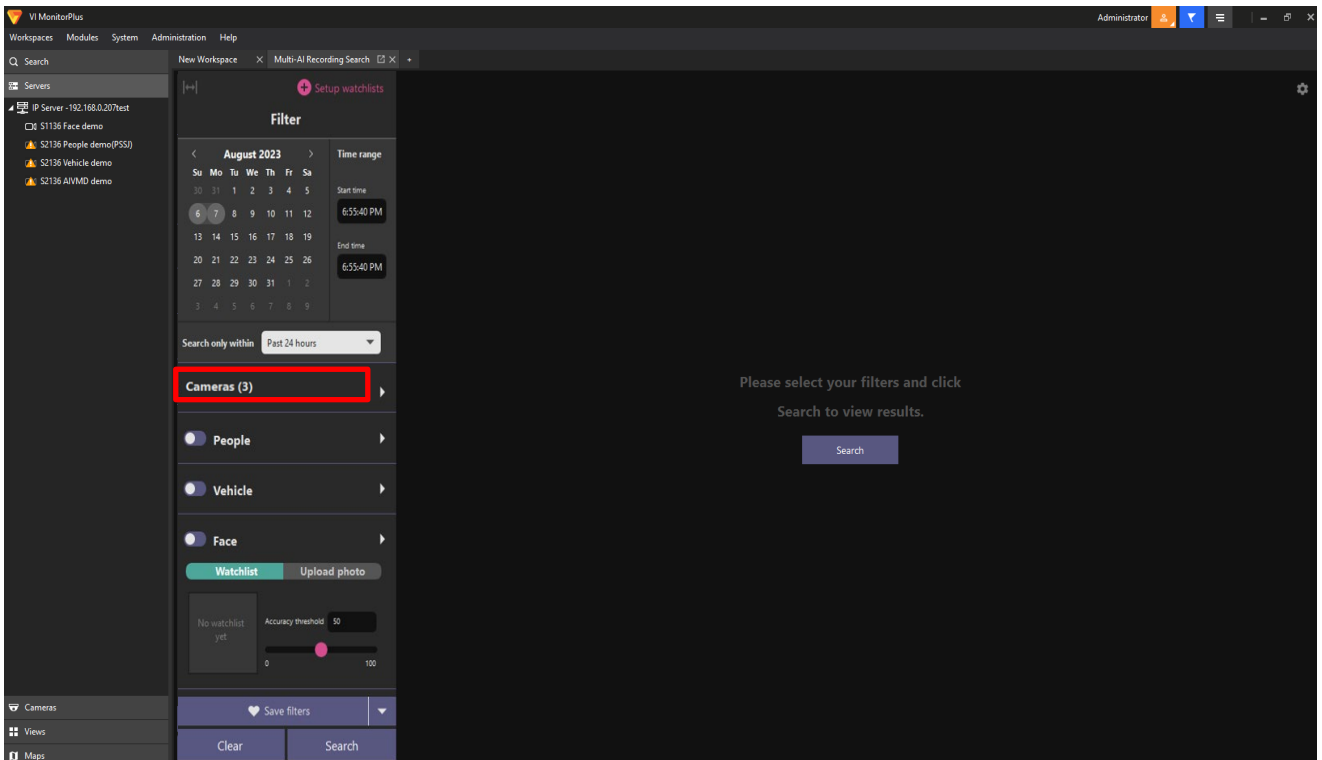
4.4.4. Check

Start [i-PRO Active Guard Search] from New Workspace



When the number is shown for “Cameras (x),” Connection succeeded.

* x means the number of camera that Face, People, Vehicle or LPR extension software is installed.



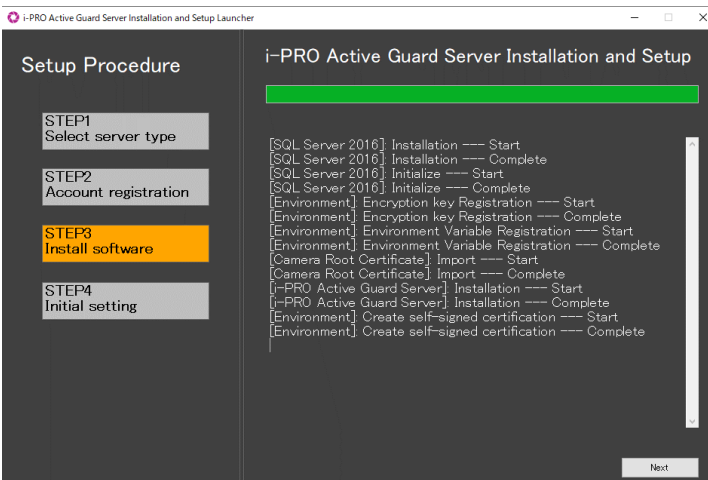
4.5. Upgrade i-PRO Active Guard server

[Important]

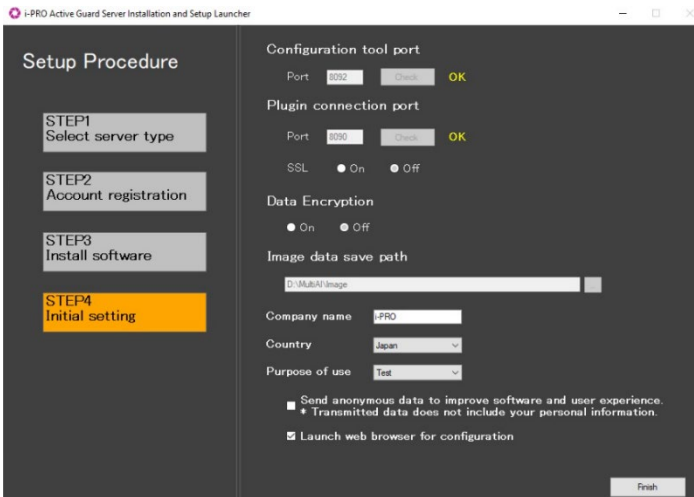
When upgrading the version of i-PRO Active Guard server, do not uninstall the already installed version. If you uninstall it, you will not be able to use the past data.

Execute "MultiAIStartup.exe" as administrator (file path length must be less than 120).

Check for [Agree] for License terms and [OK].



Installation starts and [Next] button will be appeared when finished. Click [Next].



Click [Finish].

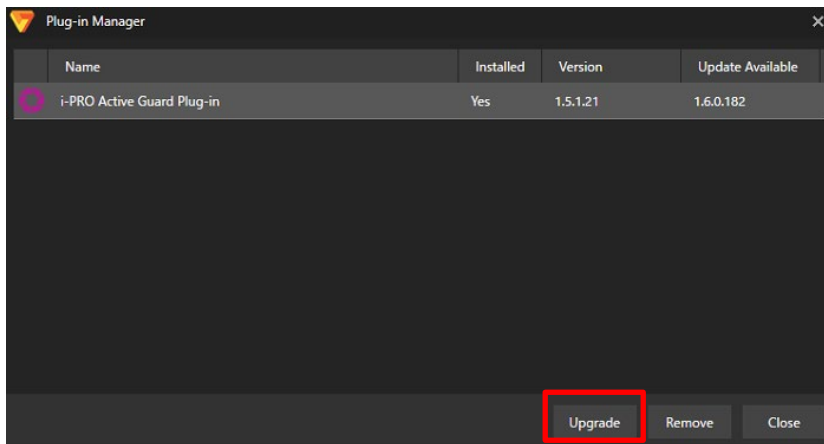
4.6. Upgrade Plug-in

STEP1

Click the [Modules] tab, then select [Plugins] - [Manage Plugins].
The [Plugin Manager] window will be displayed.

STEP2

Click the [i-PRO Active Guard Plug-in] in the [Plugin Manager] window. Then click the [Upgrade] button.

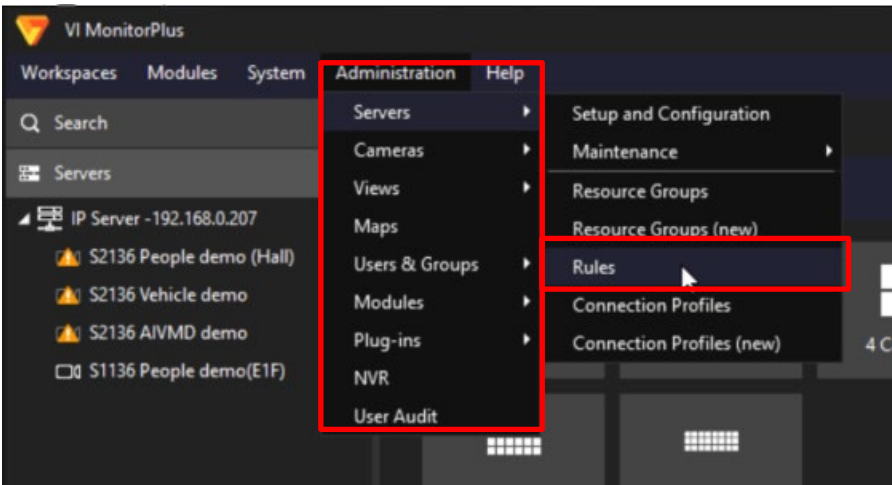


STEP3

Follow the instructions on the screen to proceed with the installation.

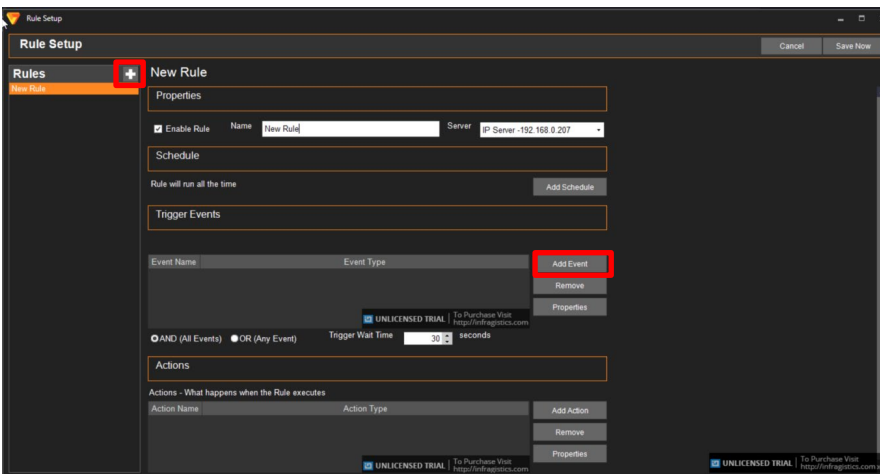
4.7. Rules setup for alarm notification (optional)

Basic alarm function can be used on Plug-in without Rules setup. Rules setup enables more advanced operation. ([Administration] – [Servers] – [Rules])

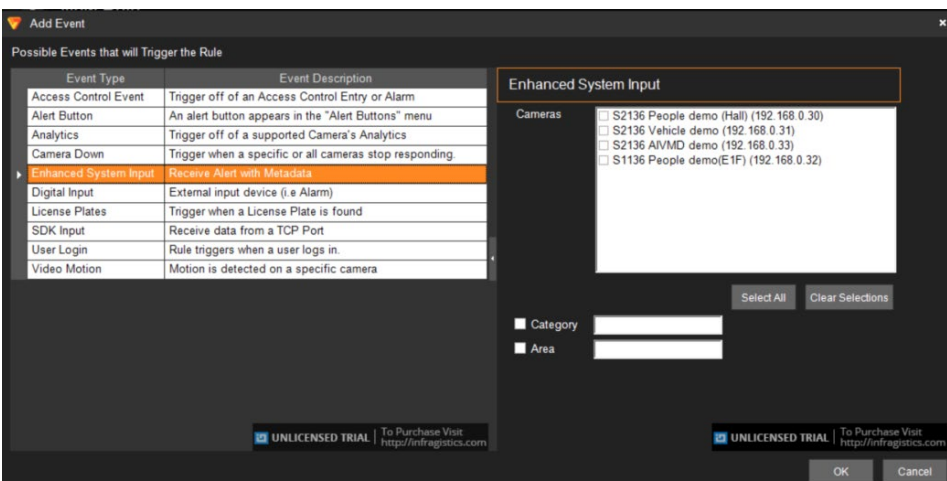


4.7.1. Add event

Create new Rules and click [Add event]

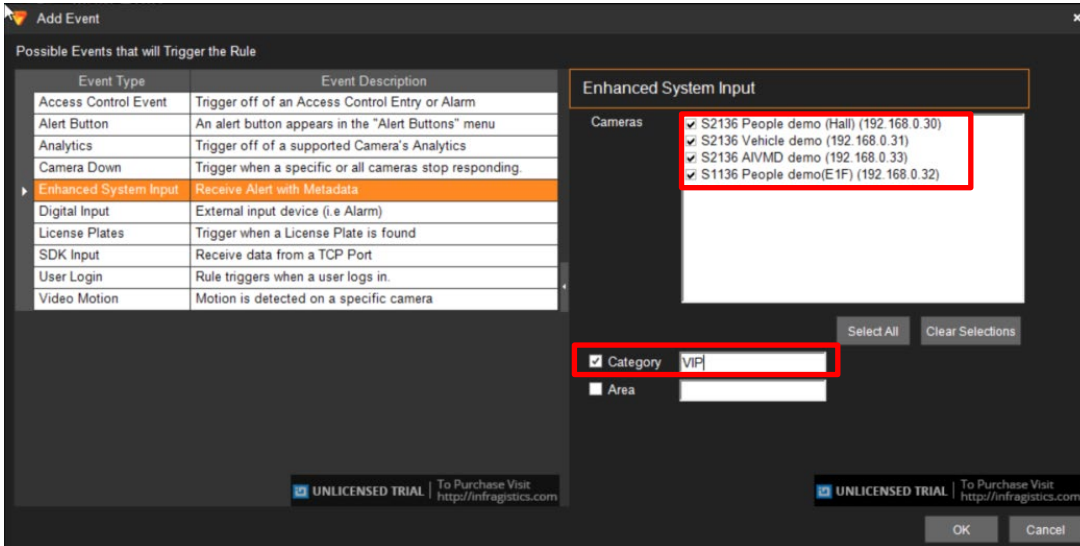


Select [Enhanced System Input]



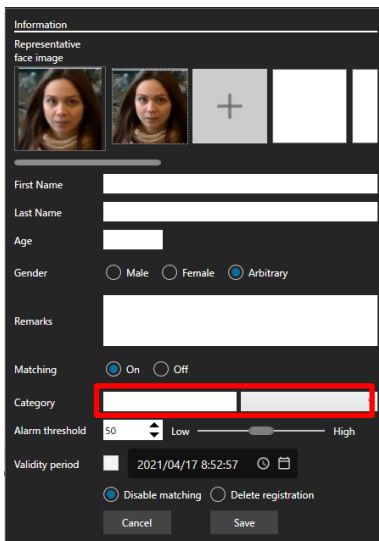
4.7.1.1. Registered face detection

To use Registered face detection as Rules, check cameras with AI Face detection, and input category exactly strings registered as face watch list (ex. VIP, Student, Employee and so on.) for Category. Actions can be set for specific category.



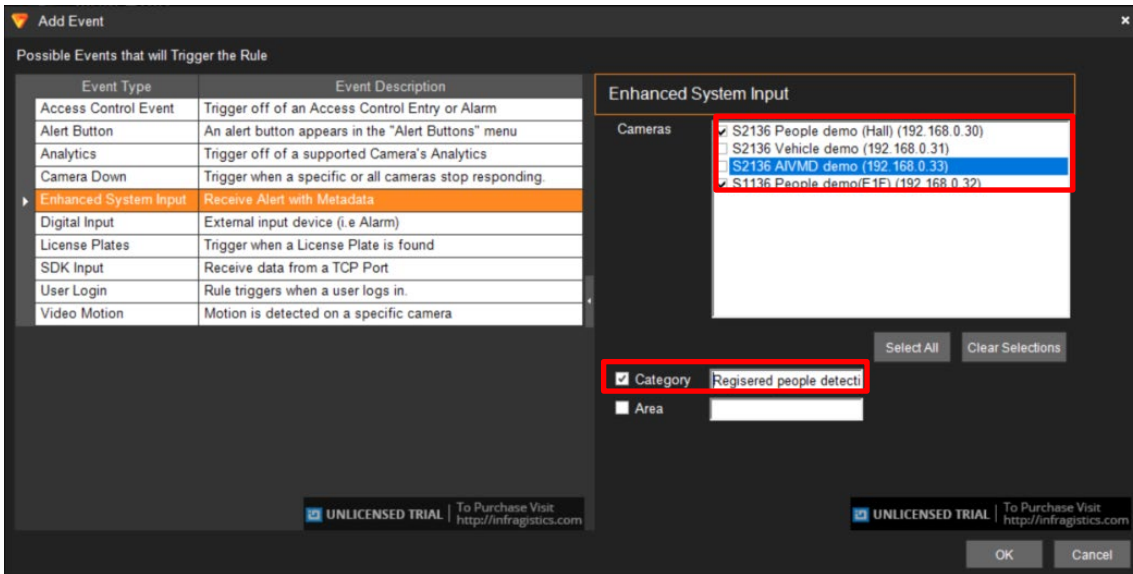
Category can be set from Face Watchlist registration window. See “i-PRO Active Guard Plugin Operating Instructions for VI” in detail.

Area setting is invalid.



4.7.1.2. Registered people detection

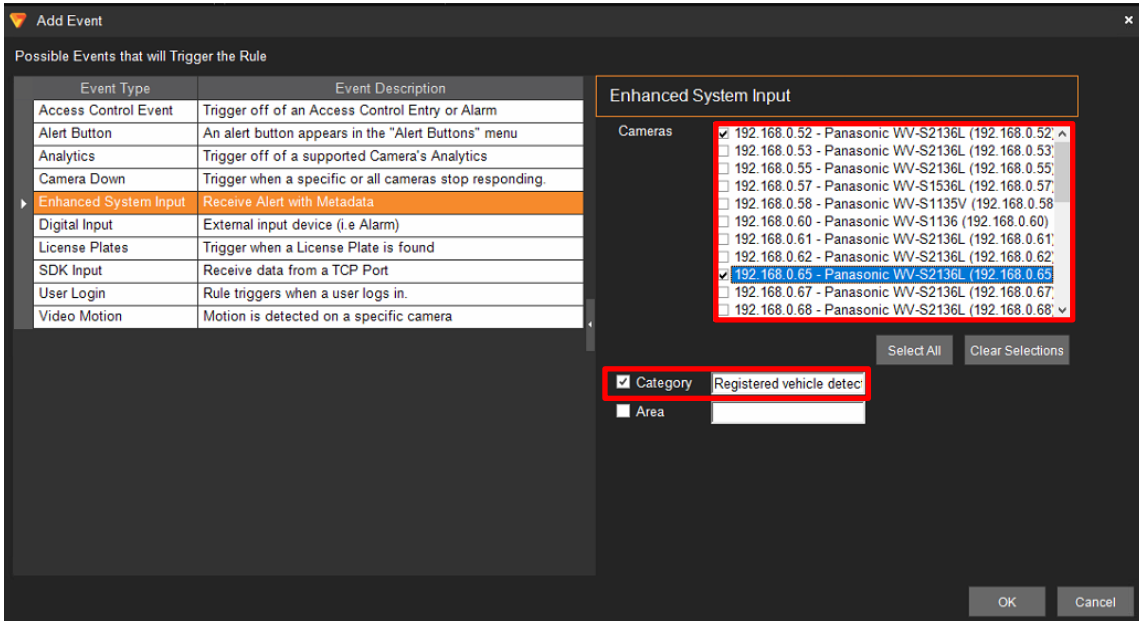
To use Registered people detection as Rules, check cameras with AI People detection and input “Registered people detection” for Category.



Area setting is invalid.

4.7.1.3. Registered vehicle detection

To use Registered vehicle detection as Rules, check cameras with AI Vehicle detection and input "Registered vehicle detection" for Category.

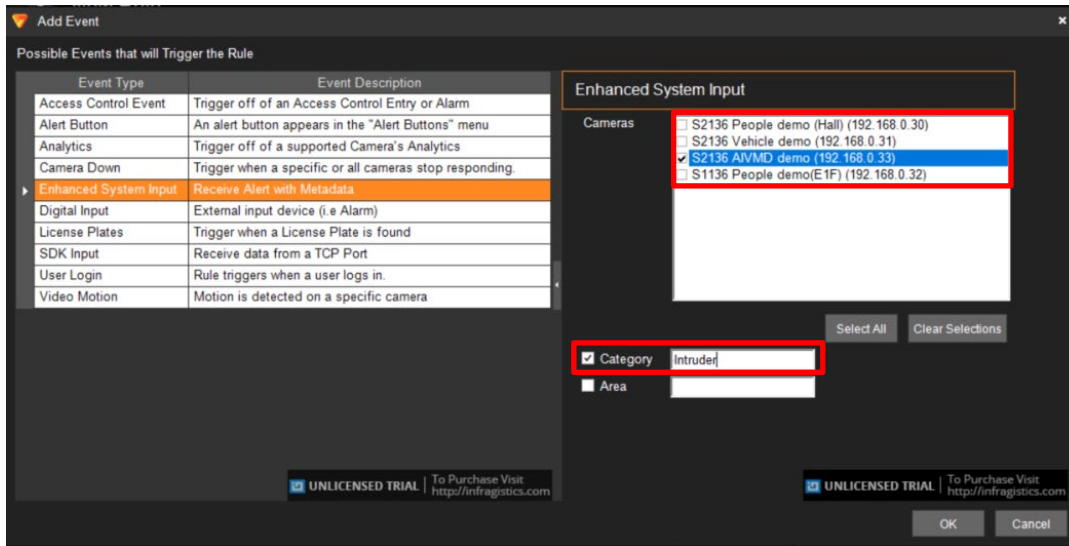


Area setting is invalid.

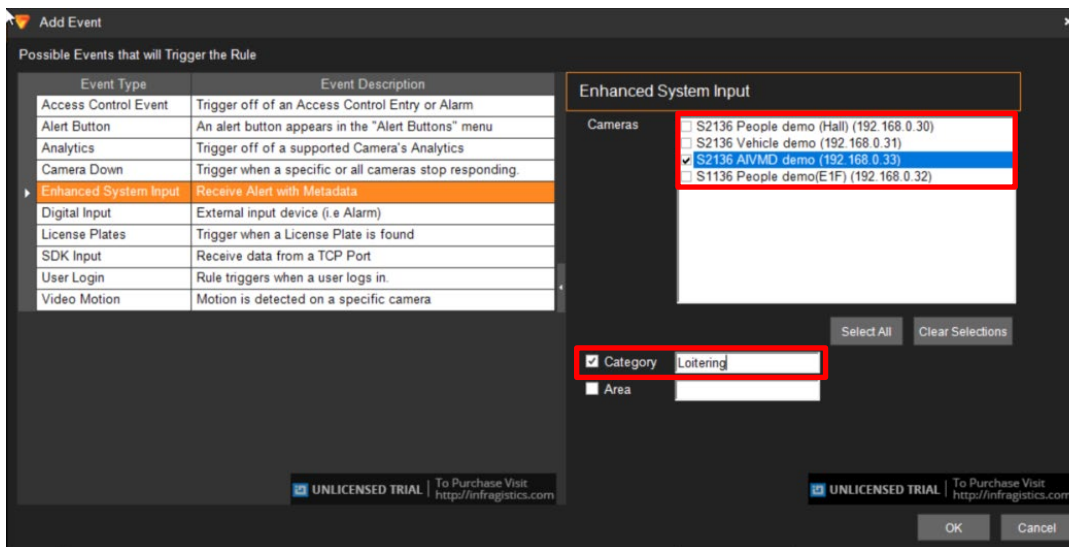
4.7.1.4. AI-VMD

To use AI-VMD to trigger the Rule, check cameras with AI-VMD input Category and area as follows. Area means area number 1 to 8 configured by camera side.

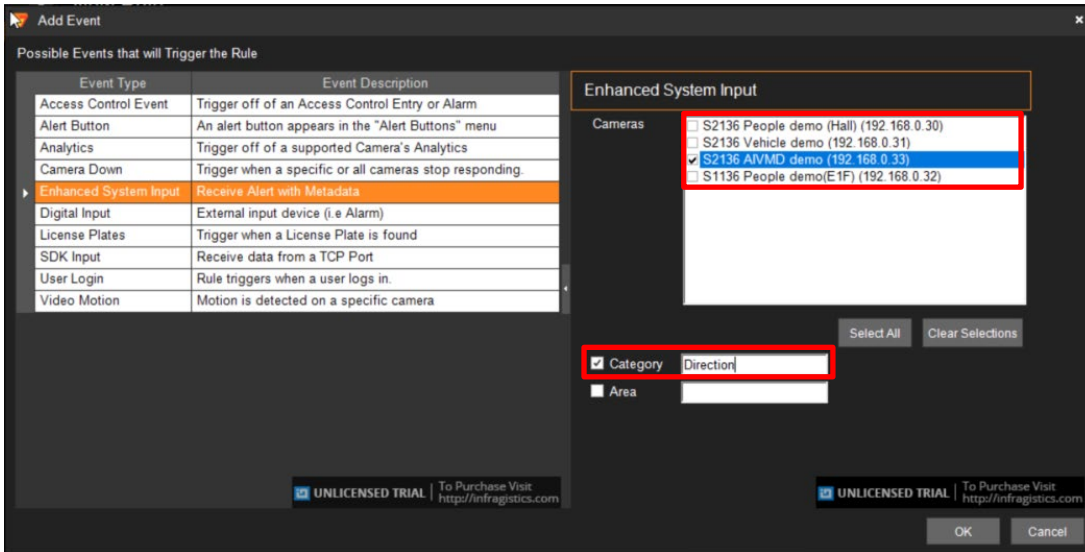
Intruder for all areas



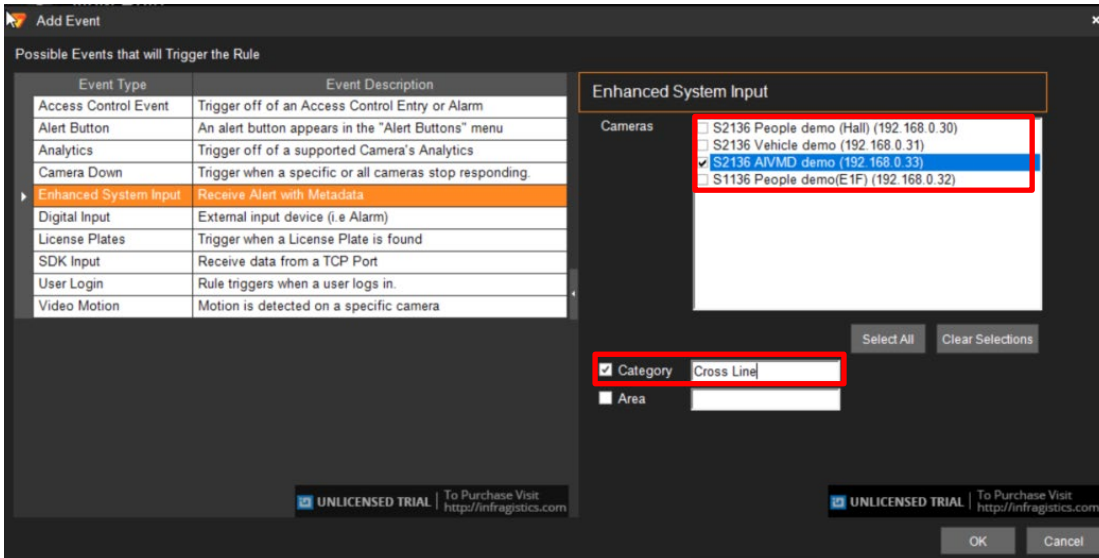
Loitering for all areas



Direction for all areas



Cross Line for all areas

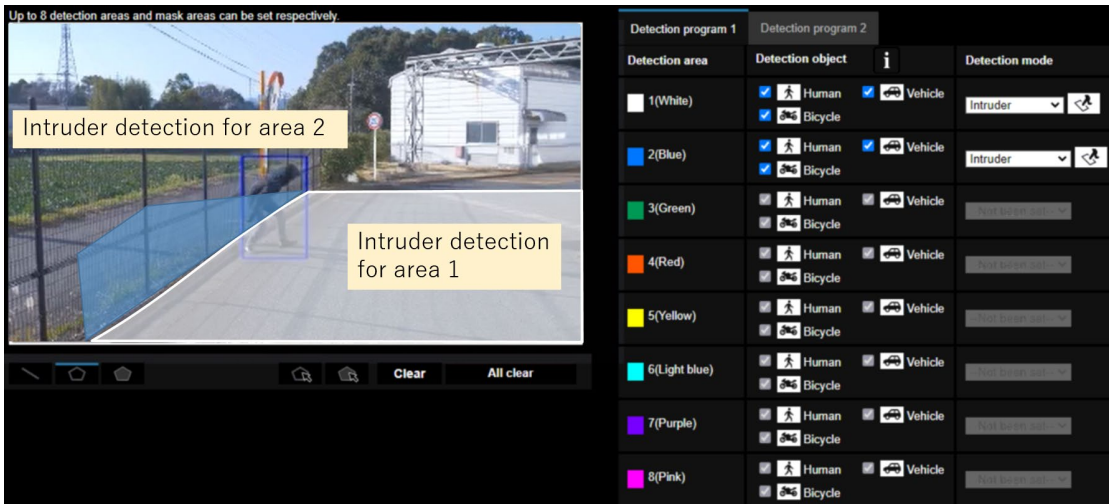


Area field enables that other actions for each area can be set.

Example of use case using Area field.

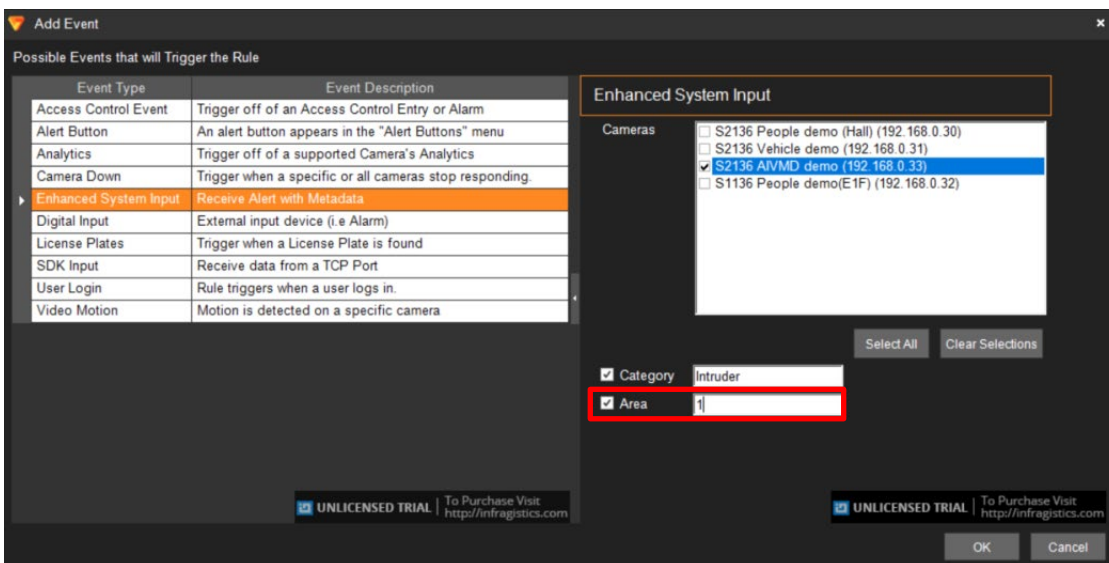
Area 1 is an exclusion zone and area 2 is around the area 1.

Popup live window and start recording when someone intrudes into area 2, and e-mail notification when the person intrudes into area 1. These can be set by Rules setup using Area field.



Intruder for area 1 (example of using Area field)

Check Area and input area number.

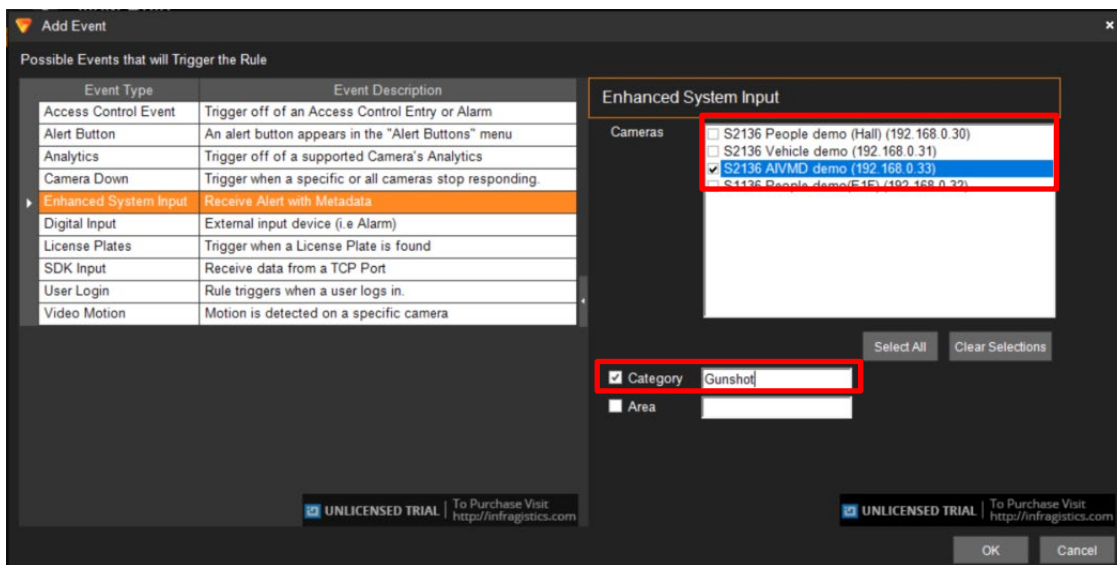


4.7.1.5. AI Sound classification

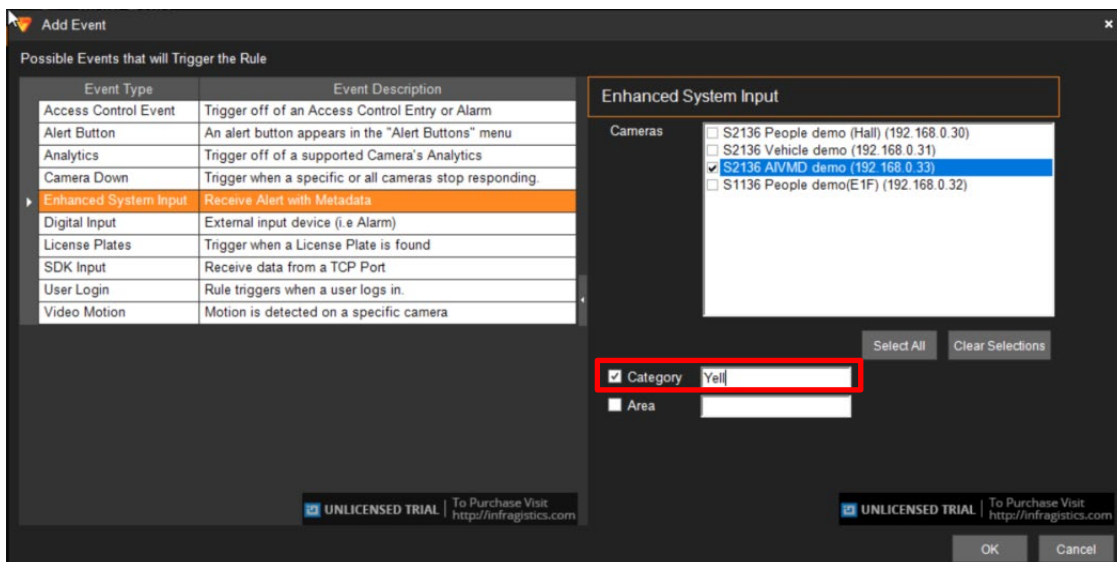
Category for AI Sound classification (Gunshot, Yell, Glass break, Vehicle horn and Audio detection) can be distinguished and Actions can be set for specific category.

Check cameras with AI Sound classification, Category, and input category strings.
Area setting has no relation.

Gunshot



Yell



Glass break

The screenshot shows the 'Add Event' dialog box. On the left, a table lists 'Possible Events that will Trigger the Rule'. The 'Enhanced System Input' event is selected. On the right, the 'Enhanced System Input' section shows a list of cameras with 'S2136 AVMD demo (192.168.0.33)' selected. Below this, the 'Category' dropdown is set to 'Glass break' and is highlighted with a red box. The 'Area' dropdown is empty.

Event Type	Event Description
Access Control Event	Trigger off of an Access Control Entry or Alarm
Alert Button	An alert button appears in the "Alert Buttons" menu
Analytics	Trigger off of a supported Camera's Analytics
Camera Down	Trigger when a specific or all cameras stop responding.
Enhanced System Input	Receive Alert with Metadata
Digital Input	External input device (i.e Alarm)
License Plates	Trigger when a License Plate is found
SDK Input	Receive data from a TCP Port
User Login	Rule triggers when a user logs in.
Video Motion	Motion is detected on a specific camera

Enhanced System Input

Cameras

- S2136 People demo (Hall) (192.168.0.30)
- S2136 Vehicle demo (192.168.0.31)
- S2136 AVMD demo (192.168.0.33)
- S1136 People demo(E1F) (192.168.0.32)

Category Glass break

Area

Vehicle horn

The screenshot shows the 'Add Event' dialog box. On the left, a table lists 'Possible Events that will Trigger the Rule'. The 'Enhanced System Input' event is selected. On the right, the 'Enhanced System Input' section shows a list of cameras with 'S2136 AVMD demo (192.168.0.33)' selected. Below this, the 'Category' dropdown is set to 'Vehicle horn' and is highlighted with a red box. The 'Area' dropdown is empty.

Event Type	Event Description
Access Control Event	Trigger off of an Access Control Entry or Alarm
Alert Button	An alert button appears in the "Alert Buttons" menu
Analytics	Trigger off of a supported Camera's Analytics
Camera Down	Trigger when a specific or all cameras stop responding.
Enhanced System Input	Receive Alert with Metadata
Digital Input	External input device (i.e Alarm)
License Plates	Trigger when a License Plate is found
SDK Input	Receive data from a TCP Port
User Login	Rule triggers when a user logs in.
Video Motion	Motion is detected on a specific camera

Enhanced System Input

Cameras

- S2136 People demo (Hall) (192.168.0.30)
- S2136 Vehicle demo (192.168.0.31)
- S2136 AVMD demo (192.168.0.33)
- S1136 People demo(E1F) (192.168.0.32)

Category Vehicle horn

Area

Audio detection

The screenshot shows the 'Add Event' dialog box. On the left, a table lists 'Possible Events that will Trigger the Rule'. The 'Enhanced System Input' event is selected. On the right, the 'Enhanced System Input' section shows a list of cameras with 'S2136 AVMD demo (192.168.0.33)' selected. Below this, the 'Category' dropdown is set to 'Audio detection' and is highlighted with a red box. The 'Area' dropdown is empty.

Event Type	Event Description
Access Control Event	Trigger off of an Access Control Entry or Alarm
Alert Button	An alert button appears in the "Alert Buttons" menu
Analytics	Trigger off of a supported Camera's Analytics
Camera Down	Trigger when a specific or all cameras stop responding.
Enhanced System Input	Receive Alert with Metadata
Digital Input	External input device (i.e Alarm)
License Plates	Trigger when a License Plate is found
SDK Input	Receive data from a TCP Port
User Login	Rule triggers when a user logs in.
Video Motion	Motion is detected on a specific camera

Enhanced System Input

Cameras

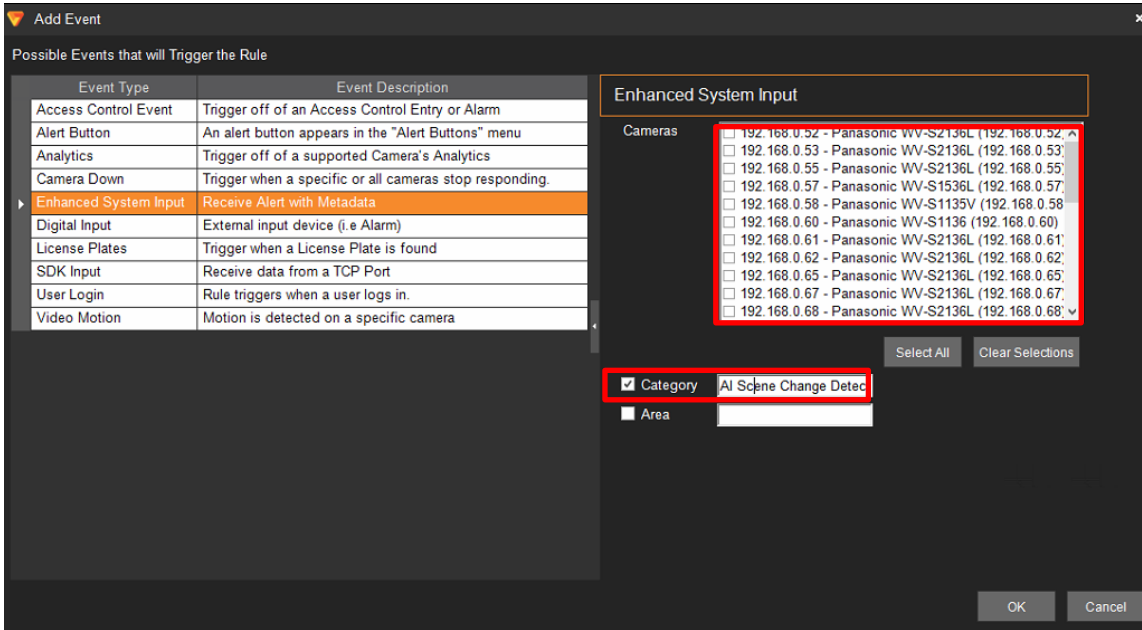
- S2136 People demo (Hall) (192.168.0.30)
- S2136 Vehicle demo (192.168.0.31)
- S2136 AVMD demo (192.168.0.33)
- S1136 People demo(E1F) (192.168.0.32)

Category Audio detection

Area

4.7.1.6. AI Scene Change Detection

To use AI Scene Change Detection as Rules, check cameras with AI Scene Change Detection and input "AI Scene Change Detection" for Category.

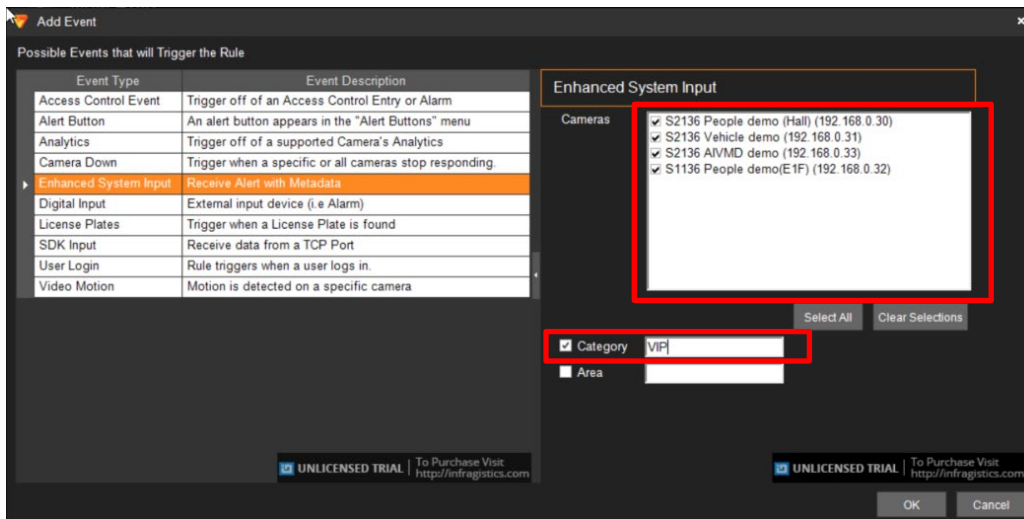


Area setting is invalid.

4.7.1.7. License plate detection

To use Registered or Unregistered license plate detection as Rules, check cameras with AI license plate detection, and input group strings registered as LPR watch list (ex. VIP, Student, Employee and so on.) for Category.

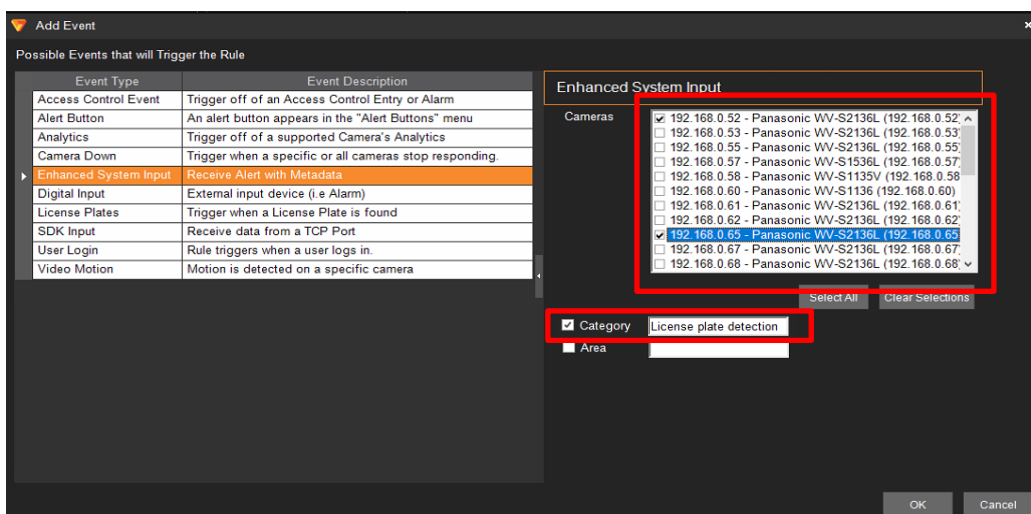
Actions can be set for specific category.



Area setting is invalid.

To use all licence plate detection and registered advanced vehicle detection as Rules, check cameras with AI license plate detection and input "License plate detection" or "Registered advanced vehicle detection" for Category.

Actions can be set for specific category.



Area setting is invalid.

Note)

About notification of LPR Detection.

- License plate detection

You will be notified when you set “Notify all detected license plates” on the screen of Register VMS.

See 4.3.6.

- Registered license plate detection

You will be notified when you set watchlist to below settings on i-PRO Active Guard plug-in.

(1) set “Detect by vehicle appearance only” to off,

and set “Trigger” to “When license plates in the selected group was detected.”

- Unregistered license plate detection

You will be notified when you set watchlist to below settings on i-PRO Active Guard plug-in.

(1) set “Detect by vehicle appearance only” to off,

and set “Trigger” to “When other license plate which is not in the selected group was detected.”

- Registered Advanced Vehicle Detection

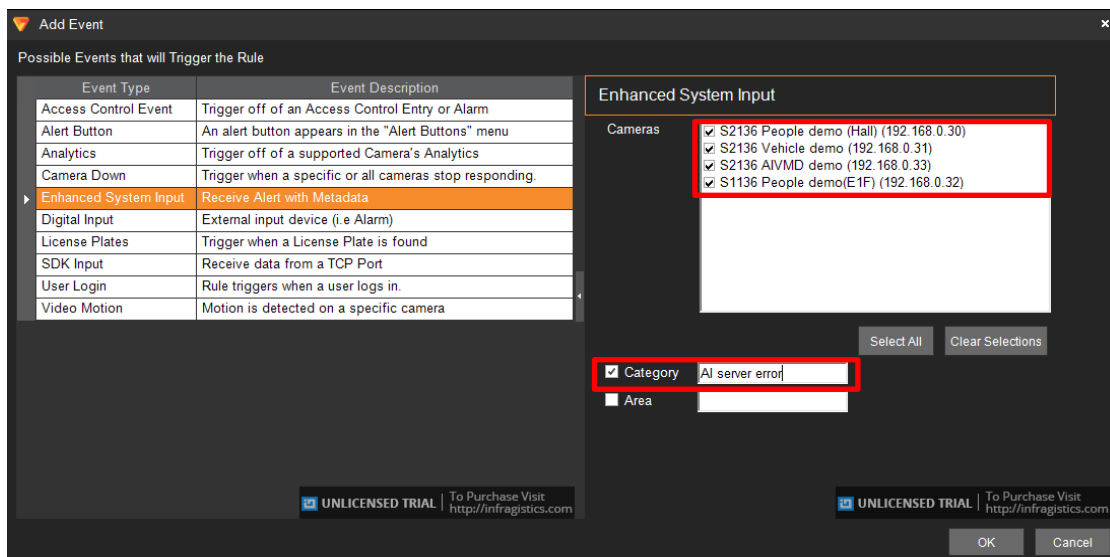
(1) set “Detect by vehicle appearance only” to on.

4.7.1.8. System alarm of i-PRO Active Guard server

Some alarms related to i-PRO Active Guard server failure can be enabled.

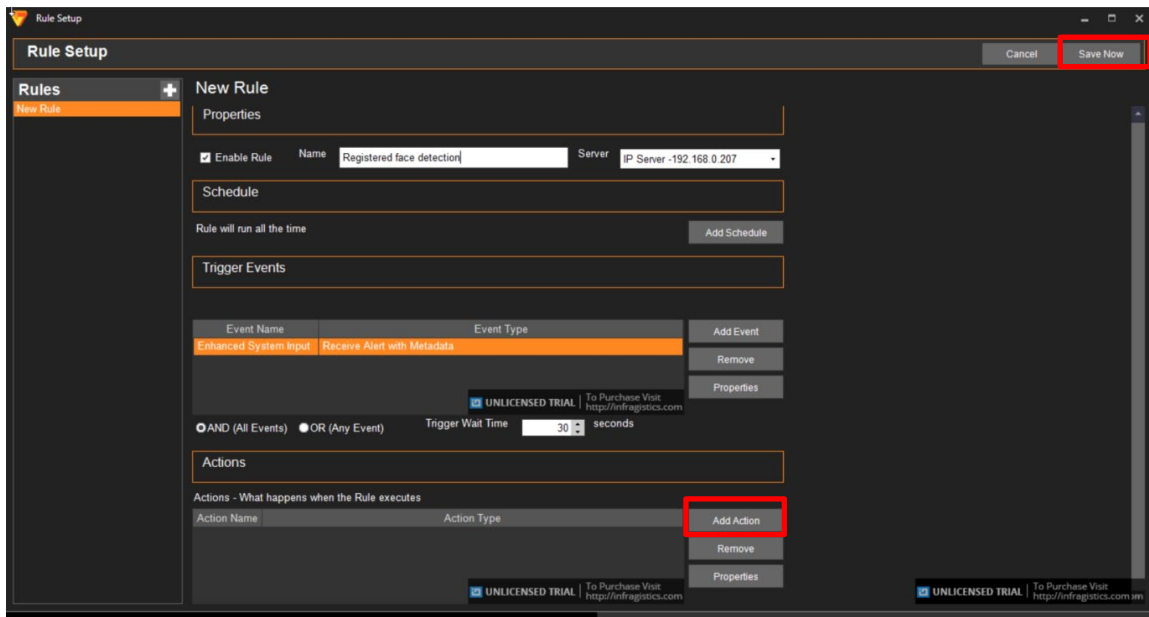
Configuration on i-PRO Active Guard server side is required in advance (Refer to 4.3.6)

Check for all cameras and input “AI server error” for Category.



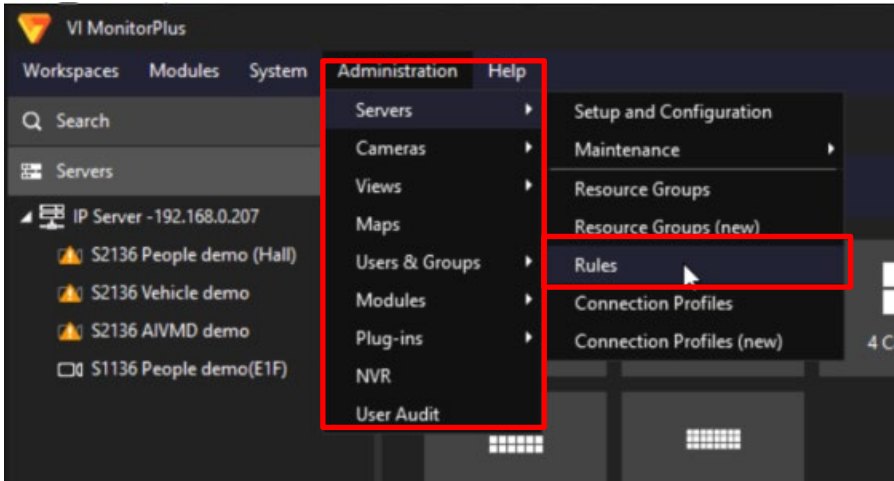
4.7.2. Add Actions

Click [Add Action] and select any actions, and then [Save Now]



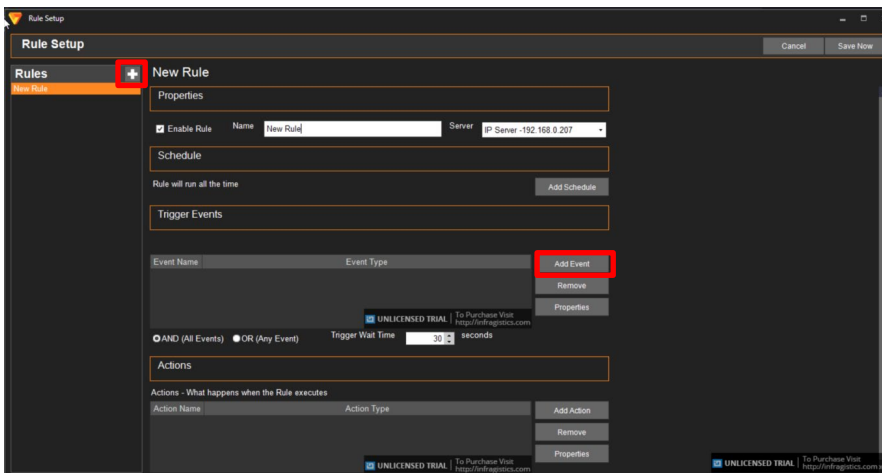
4.8. Setup for VCA monitoring function (optional)

Video Control Analytics (VCA) is available in Plug-in if a camera is equipped with Analytic functionality. This feature must be enabled in the individual camera's properties (See *Video Insight Administrative Guide*). Navigate to ([Administration] – [Servers] – [Rules])

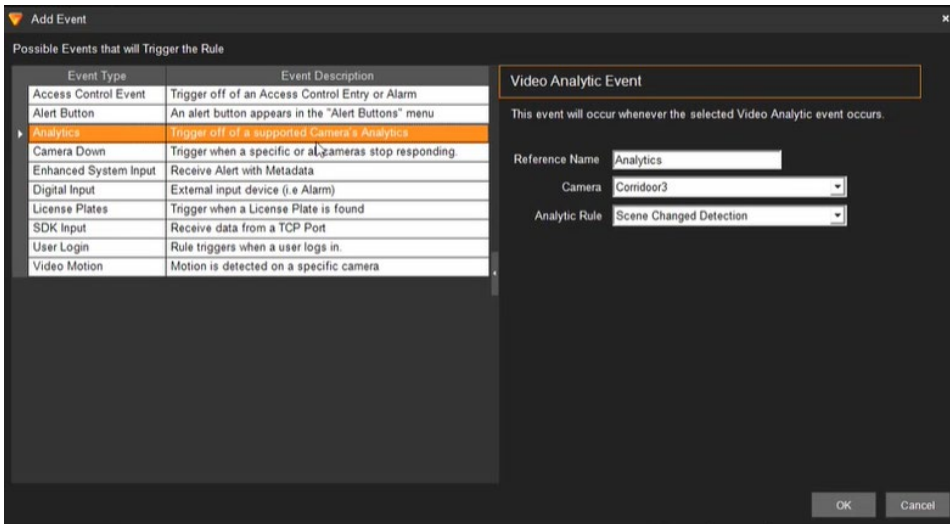


4.8.1. Add event

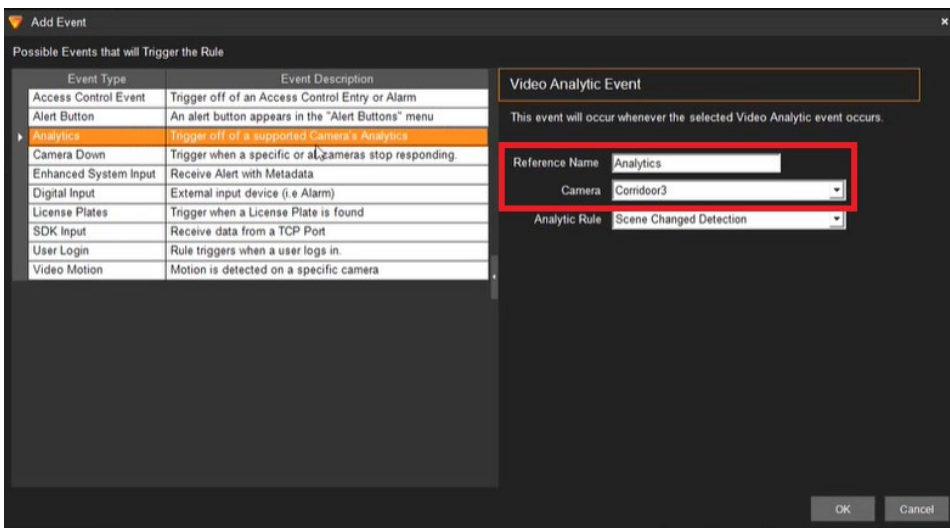
Create new Rules and click [Add event]



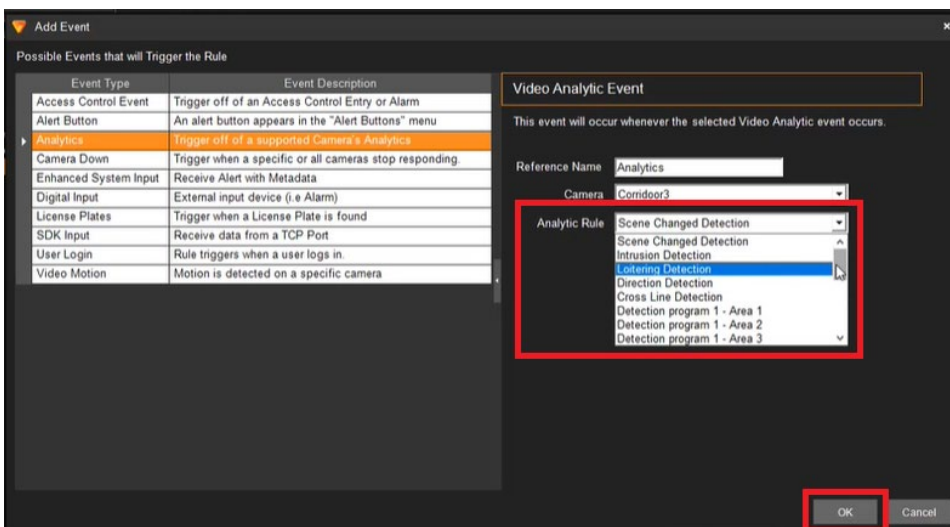
Select [Analytics]



Enter a [Reference Name], then select a [Camera] (camera must be enabled with analytics).

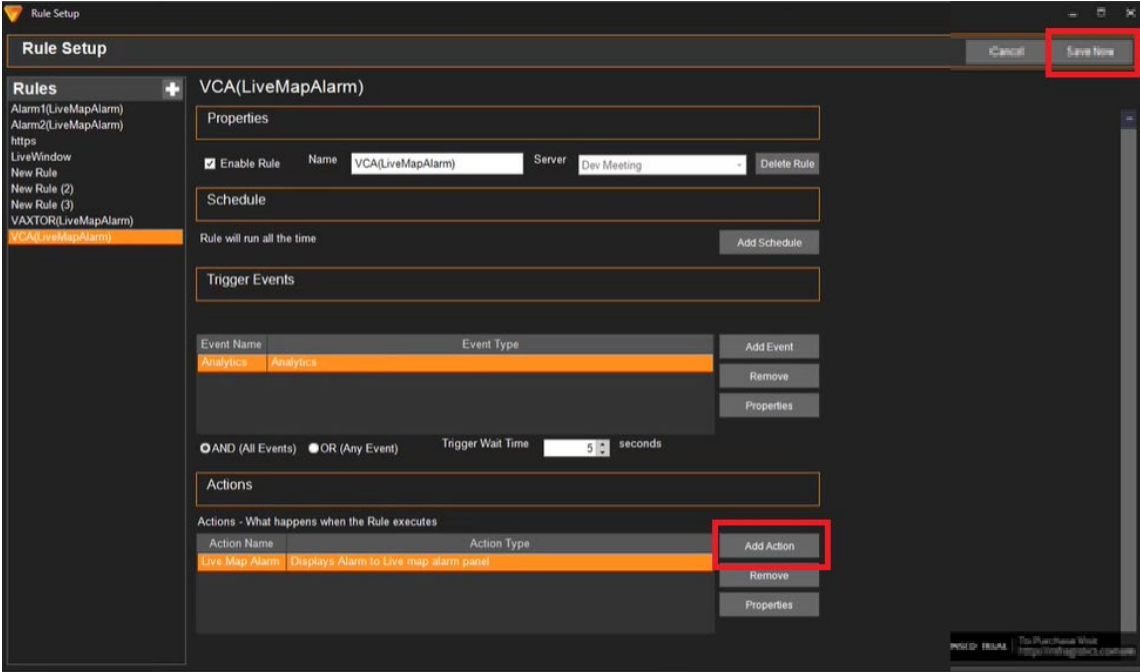


Select an [Analytic Rule] (available rules vary according to the functionality of each individual camera) and click OK.



4.8.2. Add Actions

Click [Add Action] and select [Live Map Alarm], and then [Save Now]



4.9. Setup for Access Control monitoring function (optional)

Access Control monitoring is available in Plug-in if IP Server is integrated with an Access Control server. Access Control must be configured in VI MonitorPlus (See *Video Insight Administrative Guide*, section 4.8.A). It is required to assign cameras to specific doors.

5. When changing system component

5.1. Add system device

5.1.1. Add camera

STEP1

Register AI cameras to VI IP server using VI MonitorPlus (Refer to 4.2.1).

STEP2

Register AI cameras to i-PRO Active Guard server (Refer to 4.3.2.3)

STEP3

Restart process (Refer to 4.3.3)

5.1.2. Add IP server

STEP1

Register AI cameras to new VI IP server using VI MonitorPlus. (Refer to 4.2.1).

STEP2

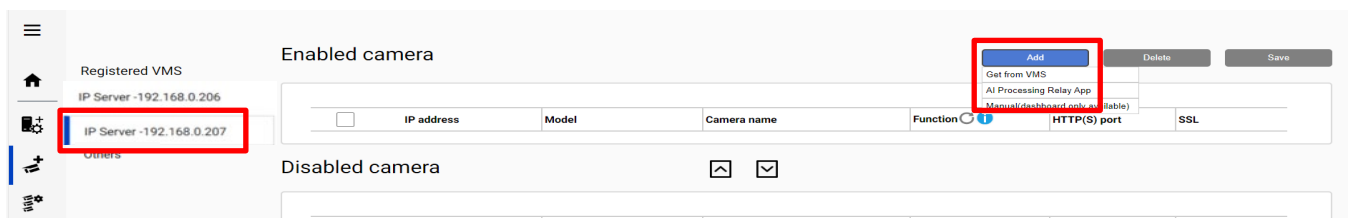
Register new VI IP server to i-PRO Active Guard server (Refer to 4.3.2.2)

STEP3

Register AI cameras associated with new VI IP server to i-PRO Active Guard server.

Select new VI IP server and click [Add] - [Get from VMS].

Following procedure is the same as 4.3.2.3



STEP4

Restart process (Refer to 4.3.3)

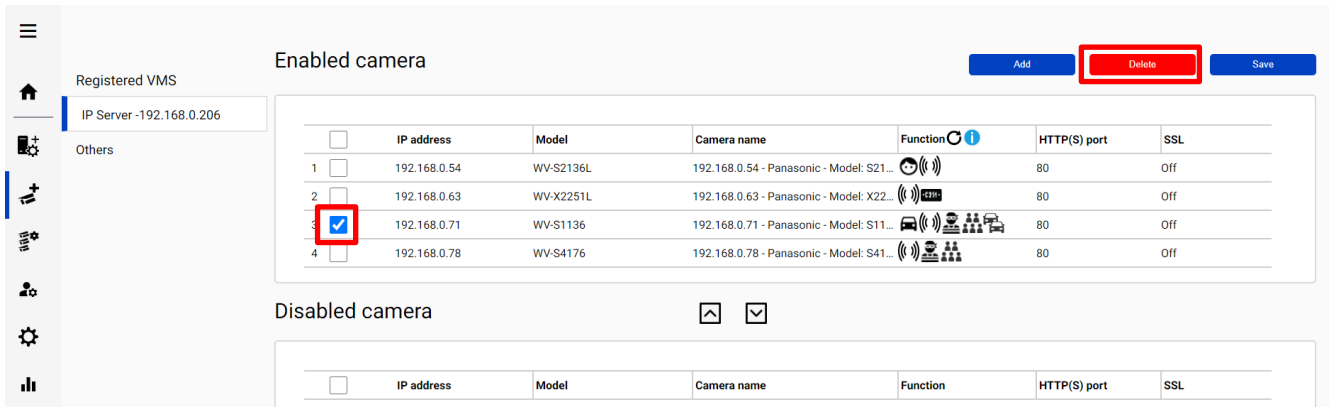
5.2. Delete system device

5.2.1. Delete camera

STEP1

Check camera and [Delete] from Register Cameras screen.

Existing data of the selected camera will be unavailable.



The screenshot shows the 'Register Cameras' interface. On the left, there is a sidebar with navigation icons. The main area is titled 'Enabled camera' and contains a table with the following data:

	<input type="checkbox"/>	IP address	Model	Camera name	Function	HTTP(S) port	SSL
1	<input type="checkbox"/>	192.168.0.54	WV-S2136L	192.168.0.54 - Panasonic - Model: S21...		80	Off
2	<input type="checkbox"/>	192.168.0.63	WV-X2251L	192.168.0.63 - Panasonic - Model: X22...		80	Off
3	<input checked="" type="checkbox"/>	192.168.0.71	WV-S1136	192.168.0.71 - Panasonic - Model: S11...		80	Off
4	<input type="checkbox"/>	192.168.0.78	WV-S4176	192.168.0.78 - Panasonic - Model: S41...		80	Off

Below the 'Enabled camera' table is a 'Disabled camera' section with a search icon and a dropdown arrow. It contains an empty table with the same headers as the 'Enabled camera' table.

STEP2

Restart process (Refer to 4.3.3)

5.2.2. Disable camera

When you want to disable specific cameras temporarily, which means there is a possibility you want to search existing data of the camera later, configure the camera as Disabled camera.

STEP1

Check camera and move to Disabled camera from Register Cameras screen.

Existing data of the selected camera will be unavailable as long as the camera is disabled camera.

Registered VMS

IP Server -192.168.0.206

Others

Enabled camera

	<input type="checkbox"/>	IP address	Model	Camera name	Function	HTTP(S) port	SSL
1	<input type="checkbox"/>	192.168.0.54	WV-S2136L	192.168.0.54 - Panasonic - Model: S21...		80	Off
2	<input type="checkbox"/>	192.168.0.63	WV-X2251L	192.168.0.63 - Panasonic - Model: X22...		80	Off
3	<input checked="" type="checkbox"/>	192.168.0.71	WV-S1136	192.168.0.71 - Panasonic - Model: S11...		80	Off
4	<input type="checkbox"/>	192.168.0.78	WV-S4176	192.168.0.78 - Panasonic - Model: S41...		80	Off

Disabled camera

	<input type="checkbox"/>	IP address	Model	Camera name	Function	HTTP(S) port	SSL
--	--------------------------	------------	-------	-------------	----------	--------------	-----

Buttons: Add, Delete, Save

STEP2

[Save]

Registered VMS

IP Server -192.168.0.206

Others

Enabled camera

	<input type="checkbox"/>	IP address	Model	Camera name	Function	HTTP(S) port	SSL
1	<input type="checkbox"/>	192.168.0.54	WV-S2136L	192.168.0.54 - Panasonic - Model: S21...		80	Off
2	<input type="checkbox"/>	192.168.0.63	WV-X2251L	192.168.0.63 - Panasonic - Model: X22...		80	Off
3	<input type="checkbox"/>	192.168.0.78	WV-S4176	192.168.0.78 - Panasonic - Model: S41...		80	Off

Disabled camera

	<input type="checkbox"/>	IP address	Model	Camera name	Function	HTTP(S) port	SSL
1	<input checked="" type="checkbox"/>	192.168.0.71	WV-S1136	192.168.0.71 - Panasonic - Model: S11...		80	Off

Buttons: Add, Delete, Save

STEP3

Restart process (Refer to 4.3.3)

When you want to use the camera and existing data of the camera again, move to Enabled camera and [Save].

Existing data of the camera will be available as long as retention period is not exceeded from plugin.

5.2.3. Delete IP server

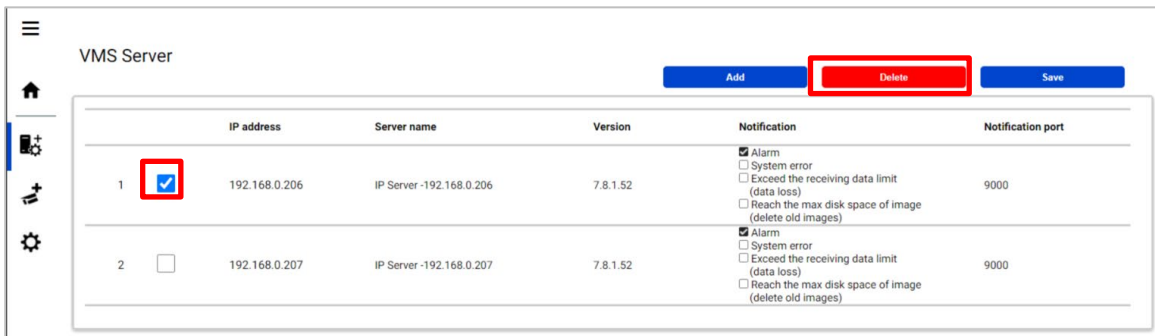
STEP1

Check server and [Delete] from Register VMS screen.

Cameras belonged to the selected server are also deleted and exiting data will not be searched from plugin.

When the same VMS server is registered again, existing data becomes available.

Best shot images and related database will be deleted when retention period exceed.



VMS Server

Buttons: Add, Delete, Save

	IP address	Server name	Version	Notification	Notification port
1	192.168.0.206	IP Server -192.168.0.206	7.8.1.52	<input checked="" type="checkbox"/> Alarm <input type="checkbox"/> System error <input type="checkbox"/> Exceed the receiving data limit (data loss) <input type="checkbox"/> Reach the max disk space of image (delete old images)	9000
2	192.168.0.207	IP Server -192.168.0.207	7.8.1.52	<input checked="" type="checkbox"/> Alarm <input type="checkbox"/> System error <input type="checkbox"/> Exceed the receiving data limit (data loss) <input type="checkbox"/> Reach the max disk space of image (delete old images)	9000

STEP2

Restart process (Refer to 4.3.3)

5.3. Update registered camera's information

[Important]

After changing the settings (*) of a camera registered on i-PRO Active Guard server, follow the steps in this chapter to update server's camera information.

If you want to change the "IP address", please refer to 5.5.

* The settings are below.

- Camera's settings. (ex. IP address, Camera name)
- Camera's extension software settings.
(ex. Installing and uninstalling camera's extension software, Line name of AI-VMD)

5.3.1. Update camera and extension software settings

STEP1

Change settings using iCT. (Refer to 4.1)

STEP2

Click [Add] - [Get from VMS] on Register Cameras screen.

	IP address	Model	Camera name	Function	HTTP(S) port	SSL
1	192.168.0.54	WV-S2136L	192.168.0.54 - Panasonic - Model: S21...		80	Off
2	192.168.0.63	WV-X2251L	192.168.0.63 - Panasonic - Model: X22...		80	Off
3	192.168.0.71	WV-S1136	192.168.0.71 - Panasonic - Model: S11...		80	Off
4	192.168.0.78	WV-S4176	192.168.0.78 - Panasonic - Model: S41...		80	Off

STEP3

Select the camera and input credentials and [Check].

	IP address	Camera model	Camera name	Check result
<input type="checkbox"/>	192.168.0.54	WV-S2136L	192.168.0.54 - Panasonic - Model...	
<input type="checkbox"/>	192.168.0.63	WV-X2251L	192.168.0.63 - Panasonic - Model...	
<input checked="" type="checkbox"/>	192.168.0.71	WV-S1136	192.168.0.71 - Panasonic - Model...	
<input type="checkbox"/>	192.168.0.78	WV-S4176	192.168.0.78 - Panasonic - Model...	

Camera connection

HTTP 80
 HTTPS 443

User Name admin
Password

STEP4

Confirm the icons for Check result is changed and [Save].

(see 4.3.2.3 about the meaning of icons).

Camera Registration Show only unregistered cameras

<input type="checkbox"/>	IP address	Camera model	Camera name	Check result
<input type="checkbox"/>	192.168.0.54	WV-S2136L	192.168.0.54 - Panasonic - Model...	
<input type="checkbox"/>	192.168.0.63	WV-X2251L	192.168.0.63 - Panasonic - Model...	
<input checked="" type="checkbox"/>	192.168.0.71	WV-S1136	192.168.0.71 - Panasonic - Model...	
<input type="checkbox"/>	192.168.0.78	WV-S4176	192.168.0.78 - Panasonic - Model...	

Camera connection

HTTP 80
 HTTPS 443

User Name admin
Password

STEP5

Restart process (Refer to 4.3.3)

5.3.2. Update extension software settings

STEP1

Change extension software settings using iCT. (Refer to 4.1)

STEP2

Check the target camera and click on Register Cameras screen.

Registered VMS
IP Server - 192.168.0.206
Others

Enabled camera

<input type="checkbox"/>	IP address	Model	Camera name	Function	HTTP(S) port	SSL
1 <input type="checkbox"/>	192.168.0.54	WV-S2136L	192.168.0.54 - Panasonic - Model: S21...		80	Off
2 <input type="checkbox"/>	192.168.0.63	WV-X2251L	192.168.0.63 - Panasonic - Model: X22...		80	Off
3 <input checked="" type="checkbox"/>	192.168.0.71	WV-S1136	192.168.0.71 - Panasonic - Model: S11...		80	Off
4 <input type="checkbox"/>	192.168.0.78	WV-S4176	192.168.0.78 - Panasonic - Model: S41...		80	Off

Disabled camera

Note)

This function cannot update camera's settings. (ex. IP address, Camera Name)

If there is an abnormal value, please try update using method 5.3.1.

STEP3

Confirm the icons for Check result is changed.

(see 4.3.2.3 about the meaning of icons).

5.4. Uninstall the system

5.4.1. Uninstall Plug-in from client PC

STEP1

Open the Programs and Features window (from the Control Panel).

STEP2

Find [Multi AI Plugins] and [Uninstall].

Note)

Do not use the [Remove] button on Plugin Manager window.

5.4.2. Uninstall i-PRO Active Guard server

STEP1

Open the Programs and Features window (from the Control Panel).

STEP2

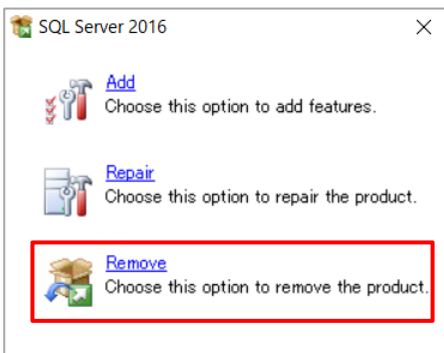
Find [Multi AI Plugins – Server] and [Uninstall].

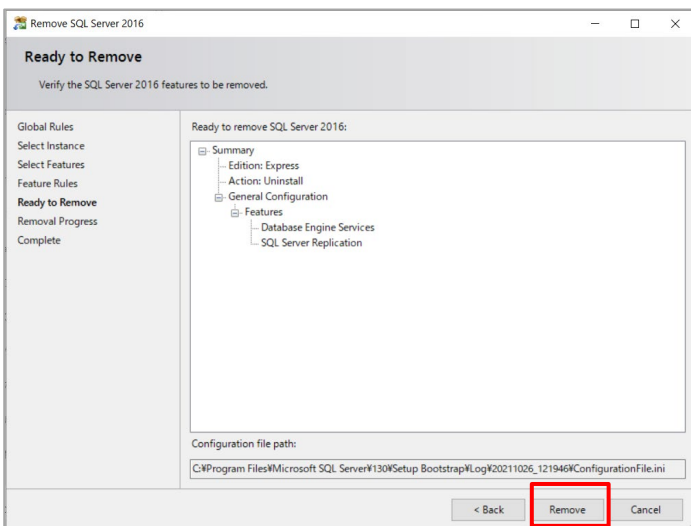
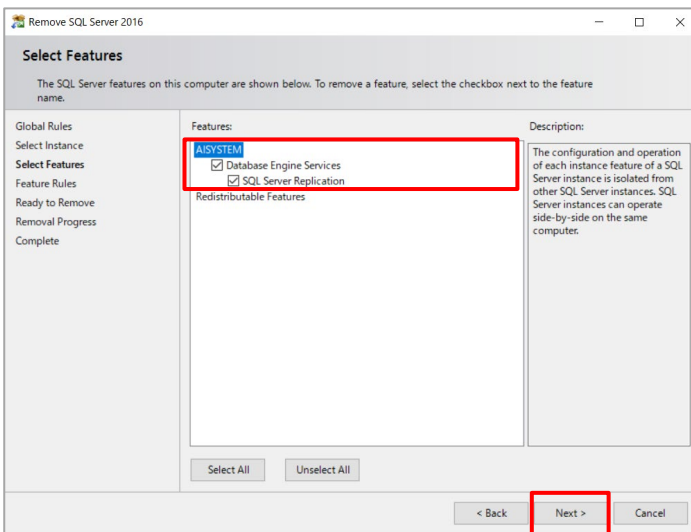
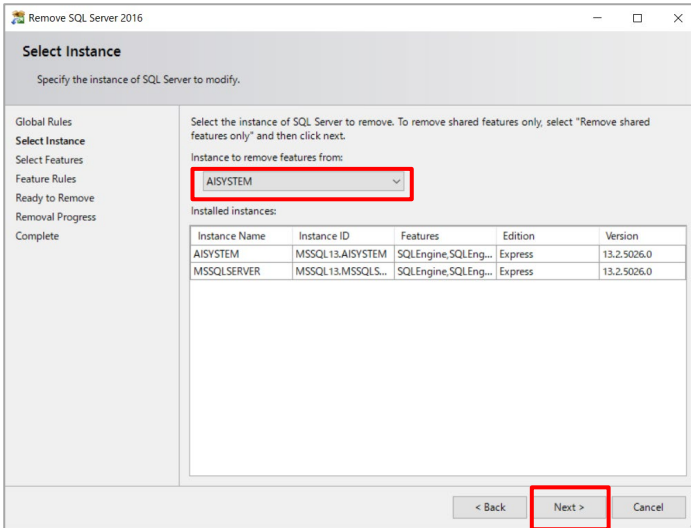
Delete “C:\MultiAI” folder if exist.

STEP3

Find [Microsoft SQL Server 2016 (64 bit)] or [Microsoft SQL Server 2019 (64 bit)] and [Uninstall].

Select [Remove] and delete “AISYSTEM” instance.





Note)

- SQL server instance that VMS uses is not deleted. Only instance for i-PRO Active Guard server is deleted.
- The instance name "AISYSTEM" is the default name. If you have specified an instance name as described in section 4.3.1, replace "AISYSTEM" with the specified instance name in the following sections.

STEP4

Delete “C:¥Program Files¥Microsoft SQL Server¥MSSQL13.AYSYSTEM” folder or
“C:¥Program Files¥Microsoft SQL Server¥MSSQL15.AYSYSTEM” folder.

5.5. Change IP address

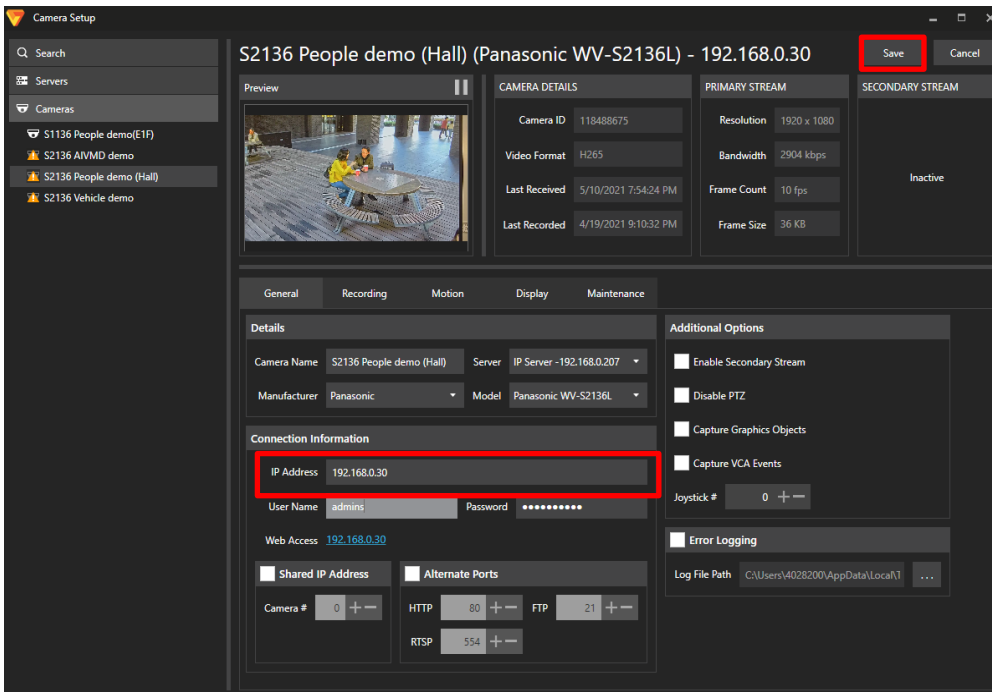
5.5.1. Change camera's IP address

STEP1

Change camera's IP address

STEP2

When you want to maintain existing recorded data and best shot images of the camera, update [IP Address] and [Save] from VI MonitorPlus ([Administration] – [Cameras] – [Configure Properties])



Once deleting cameras from VI Monitor Plus and re-register the camera using new IP address, existing data will be unavailable.

STEP3

Delete the camera from i-PRO Active Guard server (Refer to 5.2.1)

STEP4

Register the camera again (Refer to 4.3.2.3).

STEP5

Restart process (Refer to 4.3.3).

5.5.2. Change IP server's IP address

Existing recorded data and best shot images are available after changing IP address.

STEP1

Change IP server's IP address.

STEP2

Delete the IP server from i-PRO Active Guard server (Refer to 5.2.3)

STEP3

Register the IP server again (Refer to 4.3.2.2).

STEP4

Restart process (Refer to 4.3.3).

5.5.3. Change i-PRO Active Guard server's IP address

Existing recorded data and Best shot images are available after changing IP address.

STEP1

Change i-PRO Active Guard server's IP address.

STEP2

Update configuration for Connection to i-PRO Active Guard server from Plug-in (4.4.2).

5.6. Data backup and restore

Image data and related database can be backed-up manually. It is important to note that the reinstallation of i-PRO Active Guard server requires the same version of software for reinstallation from backup due to differences in each database version.

[Important]

Unable to change SQL Server instance on restore. Please use the same SQL Server instance as when Data backing up.

If the SQL Server instance is different, please reinstall the i-PRO Active Guard server.

5.6.1. Backup process

STEP1

Start – Windows Administrative Tools – Task Scheduler. Right click and disable “AliveMonitoringProcess”

STEP2

Start – Windows Administrative Tools – Services.

Right click and stop for “MultiAICameraService,” “MultiAISupportProcessManagementService” and “SQL Server(AISYSTEM),” respectively.

STEP3

Browse to SQL Server data save path (set by install tool at 4.3.1.) .

Copy “ai_db.mdf,” “aicam.mdf,” “support_db.mdf,” ai_db_log.ldf,” “aicam_log.ldf,” “support_db_log.ldf,” “bi.mdf” and “bi_log.ldf” to safe location (i.e.: a USB drive, a NAS device, another server, etc.).

Default SQL Server data save path is below:

SQL server 2016

“C:\Program Files\Microsoft SQL Server\MSSQL13.AISYSTEM\MSSQL\DATA”

SQL server 2019

“C:\Program Files\Microsoft SQL Server\MSSQL15.AISYSTEM\MSSQL\DATA”

STEP4

Copy “C:\MultiAI\Image” folder to safe location. If you changed image data save path, copy the folder.

Copy “C:\MultiAI\Backup\WebConfig” folder to safe location.

STEP5

Type “regedit” to Start menu and run. Right click two folder and export to safe location, respectively.
“%HKEY_LOCAL_MACHINE%SOFTWARE%Panasonic%AiSystem” or
“%HKEY_LOCAL_MACHINE%SOFTWARE%i-PRO%AiSystem.”

“%HKEY_LOCAL_MACHINE%SOFTWARE%WOW6432Node%Panasonic%AiSystem” or
“%HKEY_LOCAL_MACHINE%SOFTWARE%WOW6432Node%i-PRO%AiSystem.”

STEP6

Start – Windows Administrative Tools – Services.

Right click and run for “MultiAICameraService,” “MultiAISupportProcessManagementService” and “SQL Server(AISYSTEM),” respectively.

STEP7

Start – Windows Administrative Tools – Task Scheduler. Right click and enable “AliveMonitoringProcess”

5.6.2. Restore process

STEP1

Start – Windows Administrative Tools – Task Scheduler. Right click and disable “AliveMonitoringProcess”

STEP2

Start – Windows Administrative Tools – Services.

Right click and stop for “MultiAICameraService,” “MultiAISupportProcessManagementService” and “SQL Server(AISYSTEM),” respectively.

STEP3

Copy saved files “ai_db.mdf,” “aicam.mdf,” “support_db.mdf,” ai_db_log.ldf,” “aicam_log.ldf,”
“support_db_log.ldf,” “bi.mdf” and “bi_log.ldf” to SQL Server data save path and replace existing files.

Default SQL Server data save path is below:

SQL server 2016

“C:%Program Files%Microsoft SQL Server%MSSQL13.AISYSTEM%MSSQL%DATA”

SQL server 2019

“C:%Program Files%Microsoft SQL Server%MSSQL15.AISYSTEM%MSSQL%DATA”

STEP4

Copy saved folder "Image" to "C:¥MultiAI" and replace existing files.

Copy saved folder "WebConfig" to "C:¥MultiAI¥Backup" and replace existing files.

STEP5

Double-click the saved registry export file. This will re-install the registry keys.

STEP6

Start – Windows Administrative Tools – Services.

Right click and run for "SQL Server(AISYSTEM)."

STEP7

Execute "C:¥MultiAI¥tools¥restore_user¥restore_user.bat" as administrator.

Note)

If you set the SQL server instance name to something other than "AISYSTEM", change the instance name in the bat file from "AISYSTEM" to the instance name you set and execute the file.

STEP8

Right click and run for "MultiAICameraService," "MultiAISupportProcessManagementService," respectively.

STEP9

Start – Windows Administrative Tools – Task Scheduler. Right click and enable "AliveMonitoringProcess."

5.7. Procedure to move i-PRO Active Guard server location from IP Server's PC to dedicated server's PC

i-PRO Active Guard server location can be moved from VI IP server's PC to dedicated server's PC, for example, when the number of cameras are increased or when distributing processing load is required.

5.7.1. Preparation of data and account information

STEP1

Prepare administrator account information of existing i-PRO Active Guard server when install.
If you forget administrator account, reset it (Refer to 5.9).

STEP2

Backup data (Refer to 5.6.1)

5.7.2. Install i-PRO Active Guard server to new PC and restore data

STEP1

Install i-PRO Active Guard server to new PC as dedicated server PC (Refer to 4.3.1).

Note) Account information you set when installing will be overwritten in restore process (Refer to step 2).

STEP2

Restore data (Refer to 5.6.2)

STEP3

Execute "C:\MultiAI\tools\init_dedicated_server.bat" as administrator.

STEP4

Start – Windows Administrative Tools – Services.

Right click and Restart for "MultiAICameraService," "MultiAISupportProcessManagementService."

5.8. Procedure to restart/shut down i-PRO Active Guard server PC

As a safety precaution, it is recommended to stop the services before rebooting the computer.

STEP1

Stop i-PRO Active Guard server's process (4.3.7.2).

STEP2

Restart or shutdown.

5.9. Reset administrator account

When you forget credential of administrator to access configuration, you need to reset on PC that i-PRO Active Guard server is installed.

Execute "C:\MultiAI\tools\ChangeAdminPassword\ChangeAdminPassword.exe" as administrator and set credentials.

5.10. Upgrade SQL server to Standard Edition

You can determine if you need Standard Edition from 3.3.

If you need it, please follow the steps below to upgrade after purchasing the license.

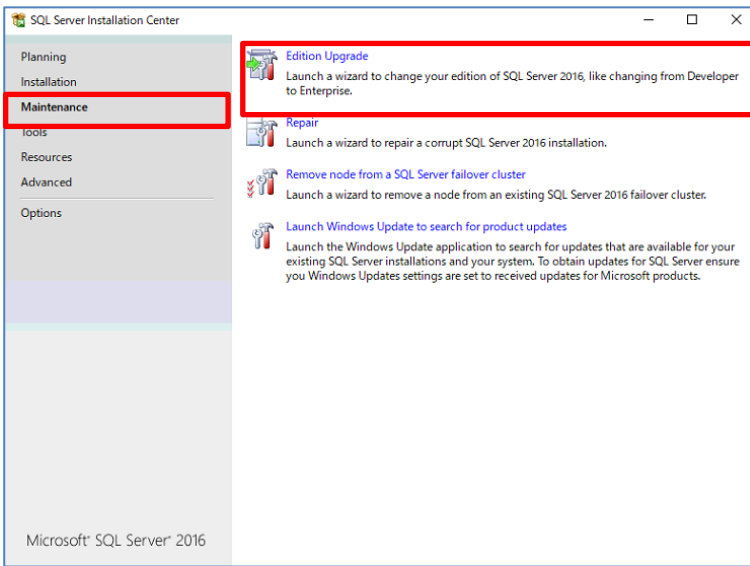
i-PRO Active Guard server software need to be installed in advance.

STEP1

Start [setup.exe] from install media of SQL server Standard Edition.

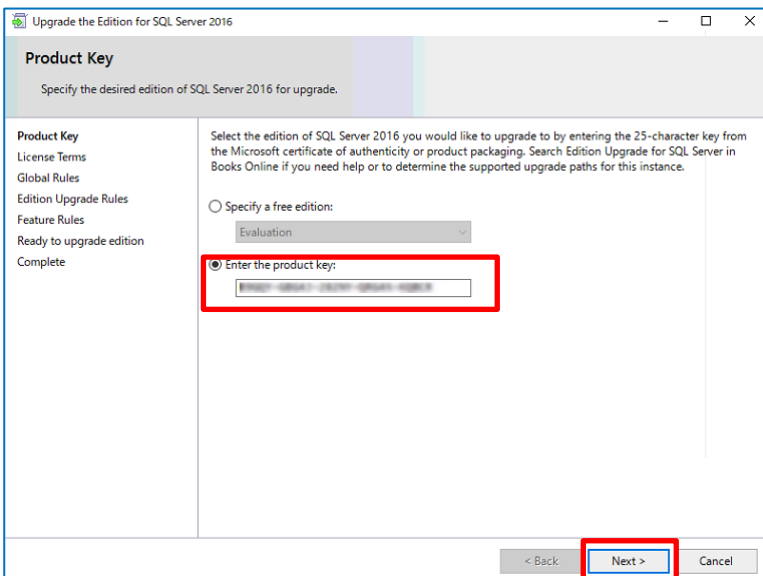
STEP2

Select [Edition Upgrade] from Maintenance.



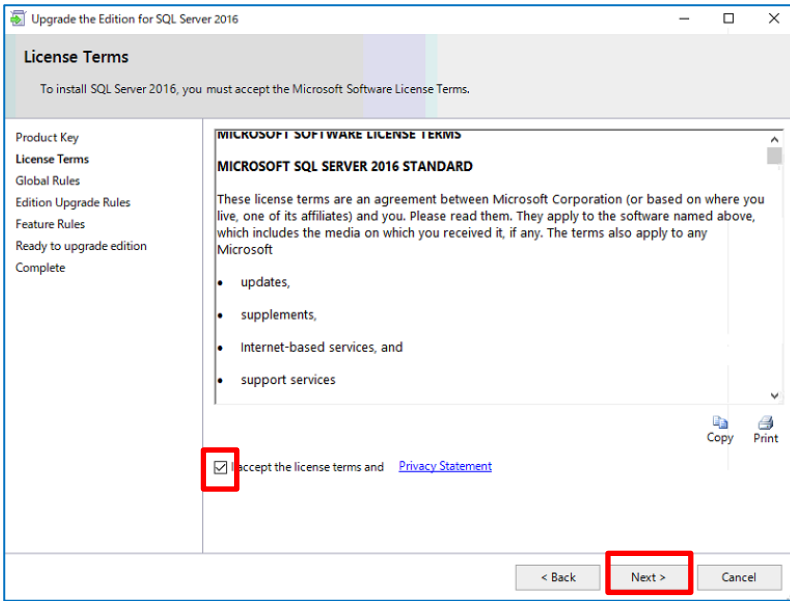
STEP3

Confirm product key is shown and click [Next].



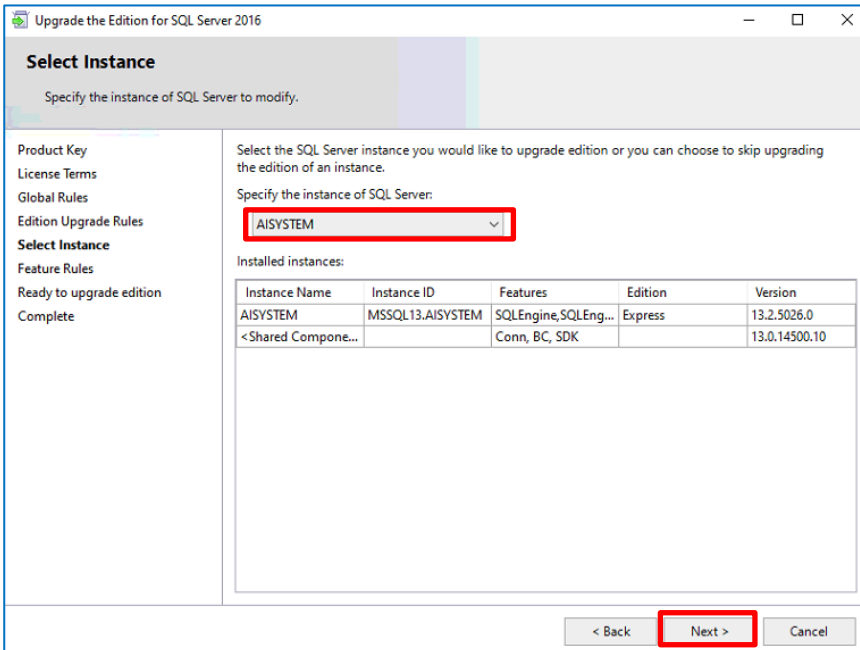
STEP4

Check for license term and click [Next].



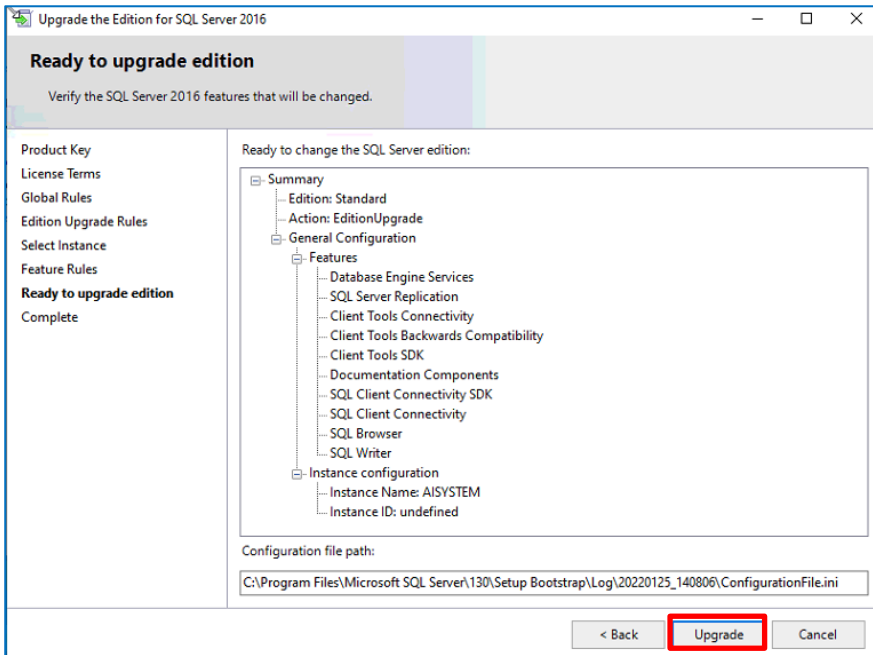
STEP5

Select [AISYSTEM] for instance and click [Next].



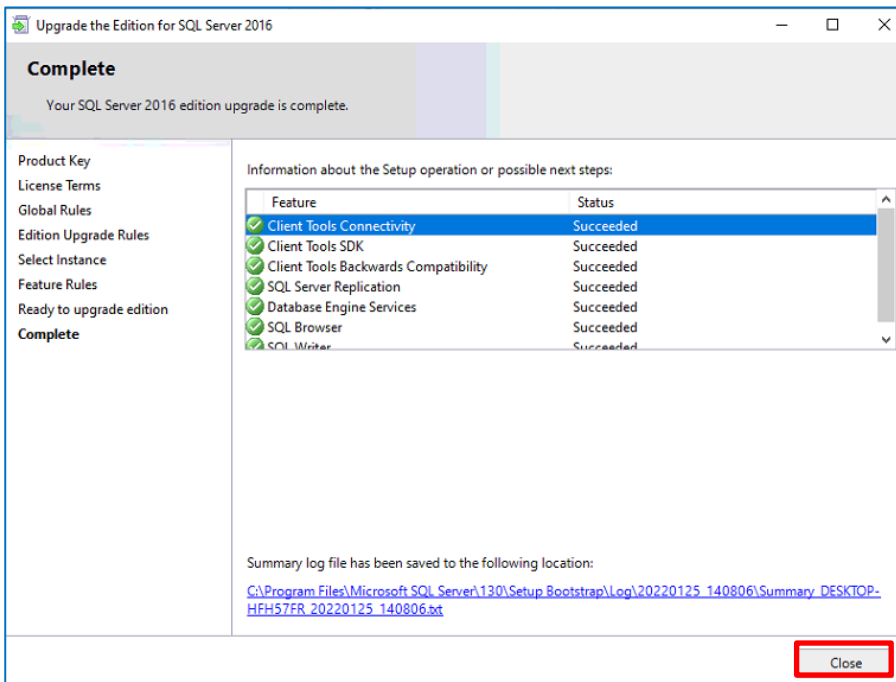
STEP6

Click [Upgrade]



STEP7

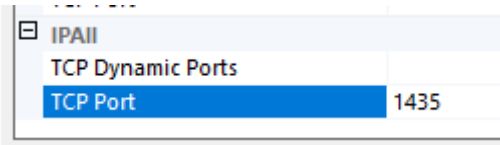
Click [Close]



6. Troubleshooting

6.1. Trouble shooting for Installation and Setup

Symptom	Cause and solution	Refer
Failed to install SQL server	There may be some data that was used in the past. Uninstall program related to SQL server 2016 or SQL server 2019, delete folder "C:\Program Files\Microsoft SQL Server\MSSQL13.AISYSTEM" or "C:\Program Files\Microsoft SQL Server\MSSQL15.AISYSTEM" and delete folder C:\MultiAI if you installed before.	5.4.2
	Check if the file path length of file path of install package is less than 120 and launch installer as administrator.	4.3.1
	When you use Window 10, version 20H2 and the Microsoft Edge browser of any version from 84.0.522.52 through 86.0.622.55, execute "Windows update". Ref. https://docs.microsoft.com/en-us/troubleshoot/sql/install/error-set-up-update-instances	
	If the installation fails even after restarting the PC, please execute "¥03_SQL¥SQLEXPADV_x64_ENU ¥1033_ENU_LP¥x64¥Setup¥SQLSUPPORT.MSI". And then, execute "MultiAIStartup.exe" again.	-
Cannot install VMS server software after i-PRO Active Guard server installation	When you install i-PRO Active Guard server to PC with VMS server, you need to install VMS server software in advance. If i-PRO Active Guard server is installed before that, uninstall i-PRO Active Guard server and SQL server and then, install VMS server.	4.3.1 5.4.2
Cannot access i-PRO Active Guard configuration.	Did you access " <a href="http://<ip>:8092">http://<ip>:8092 " ? " <a href="https://<ip>:8092">https://<ip>:8092 " is correct. When you set another port number when installation or you changed after installation, enter the port number.	4.3.2.1
	Supported browser is Microsoft Edge 85(or later), Chrome 83(or later) and Firefox 95(or later.)	3.2

Symptom	Cause and solution	Refer
	<p>Please confirm related service is running on PC that i-PRO Active Guard server is installed.</p> <p>Start – Windows Administrative Tools – Services.</p> <p>“MultiAICameraService,”</p> <p>“MultiAISupportProcessManagementService” and “SQL Server(AISYSTEM)”</p> <p>If stopped, right click and run.</p>	5.6.1
Cannot log in to i-PRO Active Guard configuration	<p>If you forget administrator account, reset account from PC that i-PRO Active Guard server is installed.</p>	5.9
	<p>If you select [Use existing SQL Server instance] and install SQL, make sure TCP Port is configured.</p> <p>If the setting is blank, please set "1435"</p> <p>1.Run “Sql Server Configuration Manager.exe”</p> <p>2.SQL Server Network Configuration - Protocols for AISYSTEM - TCP/IP - IP Addresses tab – IPAll - TCP Port=1435.</p> <p>If 1435 is already used, set other empty port and uninstall i-PRO Active Guard server and install again.</p> 	4.3.1 5.4.2
Cannot register VMS.	<p>Check if IP address, port, protocol, and credentials are correct.</p>	4.3.2.2 4.2.3
	<p>Supported version of VI IP server is 7.8.3 or later.</p> <p>If you use VI IP server is 7.8.3 or later and “Not supported version” or “Invalid response” is shown, please restart Insight API from Insight API config tool.</p>	2.2
Cannot register cameras	<p>Check if IP address, port, protocol, and credentials are correct.</p>	-
	<p>Check if extension software is installed to camera in advance.</p>	4.1
	<p>Check if cameras are registered to VI IP server in advance.</p>	4.2.1
	<p>Check if PC time of i-PRO Active Guard server is synchronized to that of VMS server. When the difference</p>	-

Symptom	Cause and solution	Refer
	is larger than about 1hour, camera list cannot be retrieved from [Get from VMS]	
	Check if "Digest" is used for authentication on camera side. ([Settings] - [User mng.] - [User auth.])	-
	When the camera is registered to VI IP server as "Multicast RTP" for camera model, the camera will not be shown on i-PRO Active Guard server's web. If multicast streaming is required, following procedure is required. 1.Register camera to VI IP server as unicast 2.Register camera to i-PRO Active Guard server 3.Change to "Multicast RTP" on VI.	
Face, People, Vehicle, or license plate images cannot be searched from Plug-in (camera is not shown for camera list).	Camera registration to i-PRO Active Guard server should be done after registering camera to VI IP server. When you re-register the camera to VI IP server after registration to i-PRO Active Guard server, you need to also re-register the camera to i-PRO Active Guard server (delete and then register again.)	5.2.1 5.1.1
Face, People, Vehicle or license plate images cannot be searched from Plug-in (the number of search result is 0).	Receiving status from each camera can be confirmed from i-PRO Active Guard configuration. Check network connection between camera and i-PRO Active Guard server, last received time, last diagnosis time. If the result is not expected, check if schedule setting on camera side for extension software is on. note) License plate detection is not support "last diagnosis time".	4.3.8.1
	Check process status of i-PRO Active Guard server. If some process is stopped, restart the process.	4.3.8.2
	Check if schedule setting on camera side for extension software is on.	-
	Configuration issues in a multiple network environment Check if the camera is connected to a network that is not local to the server.	-
	Firewall configuration issues.	-

Symptom	Cause and solution	Refer
	Check if i-PRO Active Guard server's program are listed on "Allowed apps and features" for firewall settings.	
Camera name, app name, etc. Cannot displayed correctly in Plug-in	Check if camera or app settings have been changed. If there are any changes, please update i-PRO Active Guard server	5.3
Cannot connect from Plug-in to i-PRO Active Guard server.	Check if IP address, port, protocol, and credentials are correct. Port and credentials can be changed from i-PRO Active Guard configuration.	4.3.5.2 4.4.2
Playback time is incorrect.	Check if PC time of i-PRO Active Guard server and VMS server are synchronized when i-PRO Active Guard server is installed to dedicated server. Also check if time zone setting of VMS server and VMS client are the same.	-
Notifications such as registered face detection or registered people detection cannot be shown	Check if i-PRO Active Guard server detect alarm from diagnosis on i-PRO Active Guard configuration. If alarm exists, check the process status of i-PRO Active Guard server.	4.3.8.3
	Check the configuration VMS to receive alarm from IP server manager.	4.2.2.2
	Check the insight API status from Insight API config tool.	-
System alarm cannot be shown	Check the configuration for alarm notification.	4.3.6
Restore failed	Check the SQL Server instance. If the SQL Server instance is different from the backup, Please install i-PRO Active Guard server again with the same SQL Server instance as the backup.	5.6

6.2. Trouble shooting after starting operation

When trouble occurs after starting operation, you can confirm error code on i-PRO Active Guard configuration (Refer to 4.3.7.4)

Symptom	Error code	Cause and solution
Server process is stopped on i-PRO	514 - 517	Services related to i-PRO Active Guard server does not exist. Please install i-PRO Active Guard server again

Symptom	Error code	Cause and solution
Active Guard configuration	1025 – 1028 4097 – 4100 4354,4357, 4610,4611	Process related to i-PRO Active Guard server failed to start. Restart i-PRO Active Guard server manually (Refer to 4.3.8.2). When process stops again, download logs (Refer to 4.3.8.5) and contact the system administrator.
Camera disconnect	4355,4356,4358	Check network connection between camera and i-PRO Active Guard server. Check if video recording to VMS and live monitoring works well or not. If recording or live monitoring also has problem, check camera's status. If problem continues after restarting camera and i-PRO Active Guard server manually (Refer to 4.3.8.2), download logs (Refer to 4.3.8.5) and contact the system administrator.
Face, People, Vehicle or license plate Images cannot be searched from Plug-in (the number of search result is 0).	66052,66053	Receiving status from each camera can be confirmed from i-PRO Active Guard configuration. Check network connection between camera and i-PRO Active Guard server, last received time and last diagnosis time. If the result is not expected, check if schedule setting on camera side for extension software is on.
False detection (Not face, people or vehicle is searched)	-	To avoid false detection, configure mask area using iCT (Refer to 4.1).

Symptom	Error code	Cause and solution
High CPU usage, memory usage or disk access	65793,65794 65796,65797	<p>Check CPU or memory status (Refer to 4.3.8.2) and confirm whether the usage by i-PRO Active Guard server software is high.</p> <p>If the usage of i-PRO Active Guard server is high, to reduce load, configure mask area on camera side using iCT (Refer to 4.1) or “Max frequency of receiving object data (per sec)” (Refer to 4.3.5.4)</p> <p>If the usage of i-PRO Active Guard server is low and those of whole PC is high, check the influence of other software. When i-PRO Active Guard server is installed with VMS software, check the VMS software status.</p>
Reach the max disk space of image (delete old images)	65795	<p>Old images has been deleted by exceeding the settings for “Max usage of image storage drive”.</p> <p>If you need to store data for “Retention period”, configure mask area on camera side using iCT (Refer to 4.1) to reduce the number of detection.</p>
The display of Web setting page is misaligned.	-	Please try clearing the cache in your web browser, and close the web browser, access it again.

7. Appendices

7.1. Secure system guideline

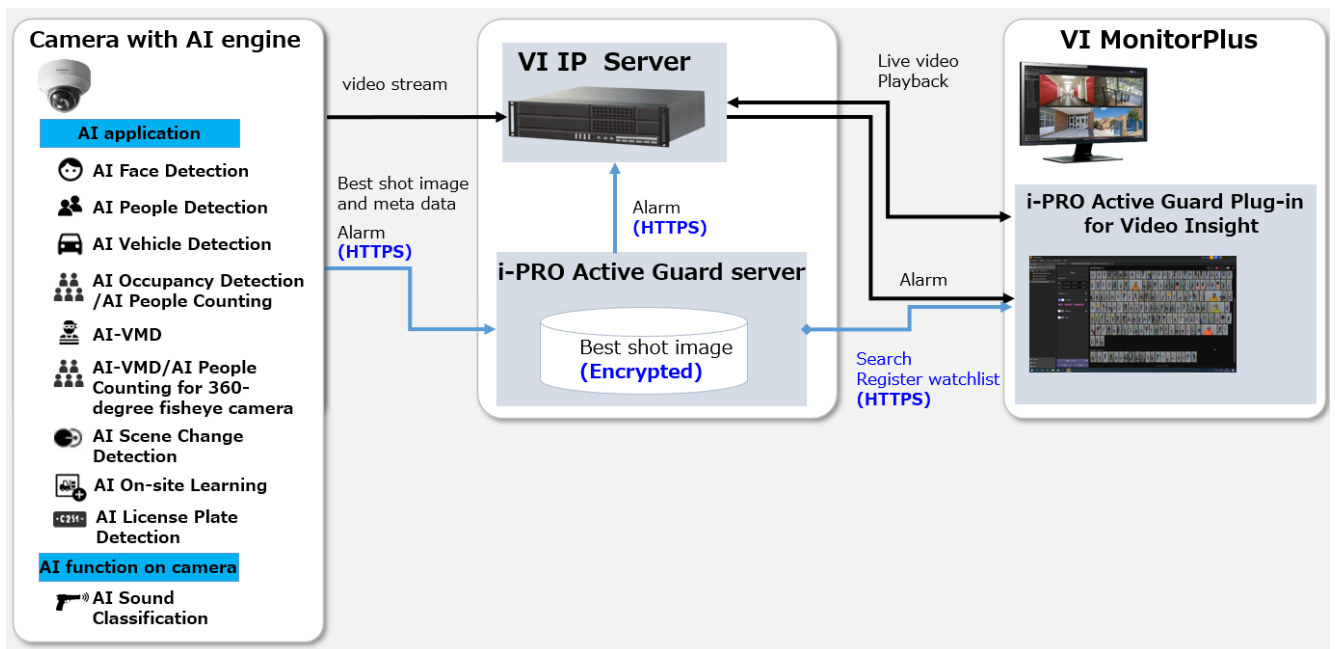
To ensure encrypted communications within critical environments, the secure system has been created as an additional security layer for the application. This document describes how to enable and configure secure system.

The communication between the cameras and i-PRO Active Guard server can be encrypted over HTTPS protocol.

The communication between the VI IP Server and i-PRO Active Guard server can be encrypted over HTTPS protocol.

The communication between i-PRO Active Guard server and Plug-in can be encrypted over HTTPS protocol.

Recorded Best shot images on i-PRO Active Guard server can be encrypted. Data encryption can be configured only when you install i-PRO Active Guard server.



7.1.1. HTTPS between camera and i-PRO Active Guard server

STEP1

Open the camera's web browser (*see instructions for each made and model*).
[Setup] – [Network] – [Advanced] – [HTTPS], select [HTTPS] from the Connections list box.

STEP2

When you register camera to i-PRO Active Guard server, select HTTPS (Refer to 4.3.2.3).

7.1.2. HTTPS between i-PRO Active Guard server and Plug-in

STEP1

Configure HTTPS for [Client plugin connection] on i-PRO Active Guard server's setting (Refer to 4.3.5.2) and Restart process.

STEP2

Configure HTTPS connection on Plug-in's setting (Refer to 4.4.2)

7.1.3. HTTPS between VMS and i-PRO Active Guard server

STEP1

Run Insight API Configuration Tool on VI IP server (Start – VI Enterprise – Insight API Config).
Click [SSL Config] and check [Enable SSL] and select Certificate.
[Stop] and [Start] Insight API Service.

STEP2

When you register VMS to i-PRO Active Guard server, select HTTPS (Refer to 4.3.2.2).

7.1.4. Encryption of Best shot images

Encryption on/off can be configured only when installing i-PRO Active Guard server (Refer to 4.3.1).

When data is encrypted, image can be seen from Plug-in software. Other software cannot open the file.

7.2. Open-source software

This product uses open-source software.

For details concerning licensing, read `license.txt` included in install package.

7.3. How to use 3rd party extension software

3rd party camera extension software developed for i-PRO camera can be used in the i-PRO Active Guard system. Not all 3rd party extension software cannot be used, software that implements specific integration can be used. You can check the extension software that can be connected to i-PRO Active Guard from [application list](#) when released.

This document does not include install or configuration for 3rd party extension software itself and includes other procedure after them.

7.3.1. Required software version

i-PRO Active Guard server: v1.6.1 or later.

i-PRO Active Guard plug-in for Video Insight: v1.6.0 or later.

7.3.2. i-PRO Active Guard server configuration

This section describes the steps required to register camera with 3rd party extension software to i-PRO Active Guard server and receive event data.

STEP1

Edit configuration file to register the extension software.

Open the file “C:\¥MultiAI¥Backup¥3rdpartyApp.config” in the PC that i-PRO Active Guard server software is installed.

Input the extension software name and event name, and also enable the line by removing ";" at the beginning of the line.

Ex.

```
application_name_1 = "SampleApplication"
```

```
event_name_1 = "SampleDetection"
```

Save and close the file after editing.

Note)

Up to 10 extension software and 10 events can be registered in a system.

The extension software name and event name of the extension software will be shown on [application list](#) when released. It will not work if any other name is configured.

Note)

For i-PRO Active Guard server v1.8.0 or later, you can register 3rd party LPR app.

If you would like to register as an LPR app, please add the below text to “3rdpartyApp.config.”

Ex.

lpr_application_name = “ SampleApplication “

* For LPR app, "event_name" not required.

For new installations of i-PRO Active Guard server v1.8.0 or later, the above LPR app sample text already included in “3rdpartyApp.config”.

STEP2

Register camera to i-PRO Active Guard server (Refer to 4.3.2.3).

<input type="checkbox"/>	IP address	Camera model	Camera name	Check result
<input type="checkbox"/>	192.168.0.30	i-PRO/Panasonic WV-S2136L	Panasonic WV-S2136L ...	
<input checked="" type="checkbox"/>	192.168.0.33	i-PRO/Panasonic WV-S2136L	Panasonic WV-S2136L ...	

Camera connection

HTTP 80

HTTPS 443

User Name admin

Password

When the 3rd party extension software is installed in the selected camera, icon will be shown in the [Check result]. If not shown, please check if configuration file is edited correctly.

Note)

For LPR app is checked, icon will be shown.

STEP3

Check if an event has occurred (Optional).

[Extension app. event] can be selected to confirm the number of detections. (Refer to 4.3.8.3)

i-PRO Active Guard configuration

Camera Connection ↻

▲ 3 | ▼ 0

Server Status ↻

✔ Process
✔ Database
 Disk Free: 2413.7 / 2795GB

Diagnosis

Total Best shot Images: 733959
 Total Alarm History: 700
 (2023/01/23 18:45)

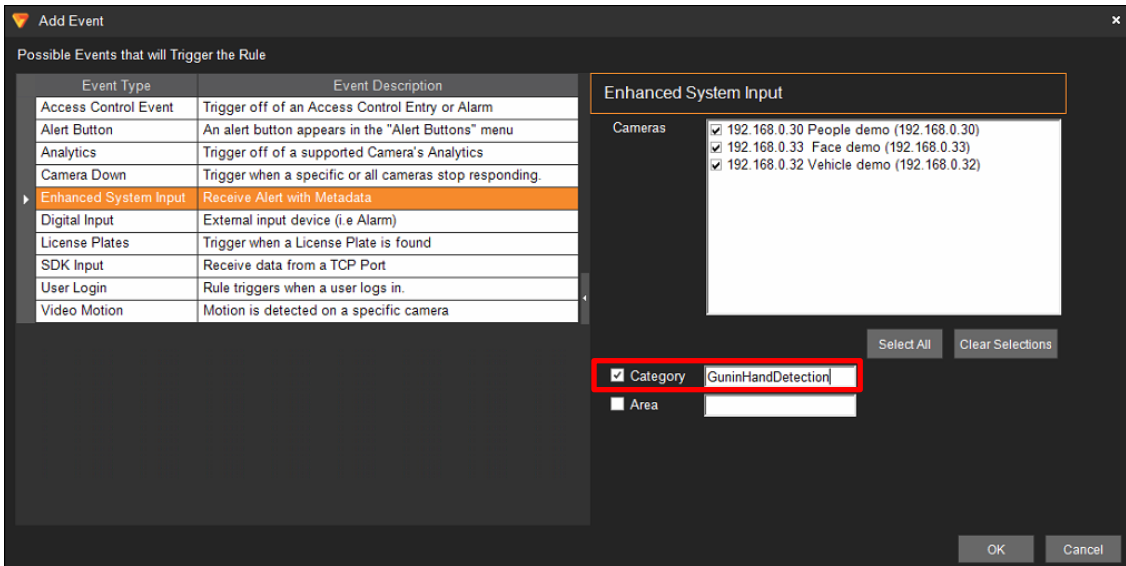
Record summary Date: 2023/01/23 Get

	4:00	5:00	6:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
All Best shot images																	
People Best shot images																	
Vehicle Best shot images																	
All alarm												24	0	0	0	0	0
Registered people detection																	
Registered vehicle detection																	
Sound detection																	
Extension app. event																	

* It takes about 15 min for an event to appear on the screen after it has occurred.

7.3.3. Rules setup for alarm notification (Optional)

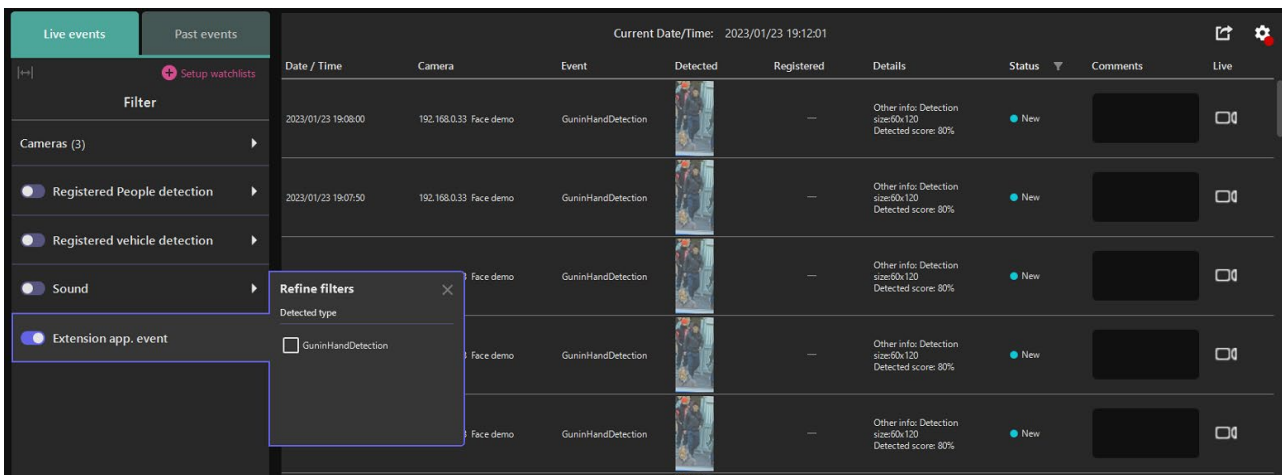
Similar to the procedure described in 4.5, 3rd party extension software event can be used as [Event] By enabling [Category] with the event name.



7.3.4. Check

[i-PRO Active Guard Event] plug-in screen on VI MonitorPlus show the event, the filter [Extension app. event] can filter by event name of the extension software.

When event occurs, event will be shown on [Live events] and alarm history can be searched on [Past events].



7.4. Specifications

The details of the specifications are as follows.

Scale	Supported camera	i-PRO network camera with AI engine
	Number of camera	1 to 100 CH when installed with VMS server (AI Face Detection is up to 20) 1 to 300CH when installed in dedicated server (AI Face Detection is up to 60)
	Number of client	No limitation (depending on limitation of VMS)
	Number of Recording server	12 VI IP servers
	Number of i-PRO Active Guard server per a client	No limitation (depending on capability of whole system)
Supported AI applications	For plugin	AI-VMD / AI Sound Classification /AI Face Detection / AI People Detection / AI Vehicle Detection /AI Scene change detection / LPR
	For dashboard	AI Face Detection, AI People Detection, AI Vehicle Detection, AI-VMD/AI People Counting for 360-degree fisheye camera, AI-VMD, AI Occupancy detection, LPR Counting
Store	Retention period	Max. 31 days limitation for face, people or vehicle or license plate data / Max. 92 days limitation for count/heatmap/ statistics data * Max. 366 days by upgrading SQL Server Standard edition or higher
Post Search	Filter	People, Vehicle, LPR (attribute, date & time, camera, moving direction) Face (similar face, date & time, and camera)
	Similar search	Yes (by same attribute information) *People and Vehicle(by same attribute information) and Face
	Sort	Descending, Ascending, Relevance (Face , People and Vehicle)
Alarm	Watch list alarm	Up to 1,000 faces, Up to 12 people attributes, Up to 12 vehicle attributes. There is no limitation to the number of license plate and license plate group (*depending on the system design).Up to 12 LPR attributes or license plates group.

	Detection alarm	AI Sound Classification (Gunshot / Yell / Vehicle horn / Glass break) AI-VMD (Intruder / Loitering / Direction / Line cross) LPR, VCA, Access Control / AI Scene change detection
	Related function	Show alarm on real-time, Alarm search, VMS's Rules configuration, Map overlay, Notification to mobile app, Manage alarm status
Playback/ Export	Playback	Playback video around the time of the best shot on full and multi-view
	Export video	Save best shot image, Export video from Recording server
	Export Search result	HTML and CSV
Dashboard	Supported browser	Microsoft Edge, Google Chrome, and Firefox
	Chart	People counting, occupancy statistics and heatmap when using AI-VMD/AI People Counting for 360-degree fisheye camera. People counting and vehicle counting when using AI-VMD. People counting and occupancy statistics when using AI Occupancy Detection. Data update interval is minimum 15 seconds for people/ vehicle counting and 1 min for heat map/ LPR Counting. Age and gender statistics when using AI Face Detection. Data update interval is minimum 1 min. People attribute statistics when using AI People Detection. Data update interval is minimum 1 min. Vehicle attribute statistics when using AI Vehicle Detection. Data update interval is minimum 1 min.
	Customize	Contents, display size, location for each chart. 3 Layouts per user can be saved and 24 user can be registered. (Up to 4 user can be log-in at the same time) Basic display color theme (dark or light) Line chart type (Straight line / Smoothed line), line/area name for counting