



# **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. This product must not be used for any purpose that is unlawful or prohibited by any law or regulation. We are not responsible for such unlawful or infringing use of our products. In addition, 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.
- (2) ANY INCONVENIENCE, LOSS, OR DAMAGE CAUSED BY INAPPROPRIATE USE OR NEGLIGENT OPERATION OF THE USER.
- (3) UNAUTHORIZED DISASSEMBLE, REPAIR OR MODIFICATION OF THE PRODUCT BY THE USER.
- (4) ANY PROBLEM, CONSEQUENTIAL INCONVENIENCE, OR LOSS OR DAMAGE, ARISING OUT OF THE SYSTEM COMBINED BY THE DEVICES OF THIRD PARTY.
- (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

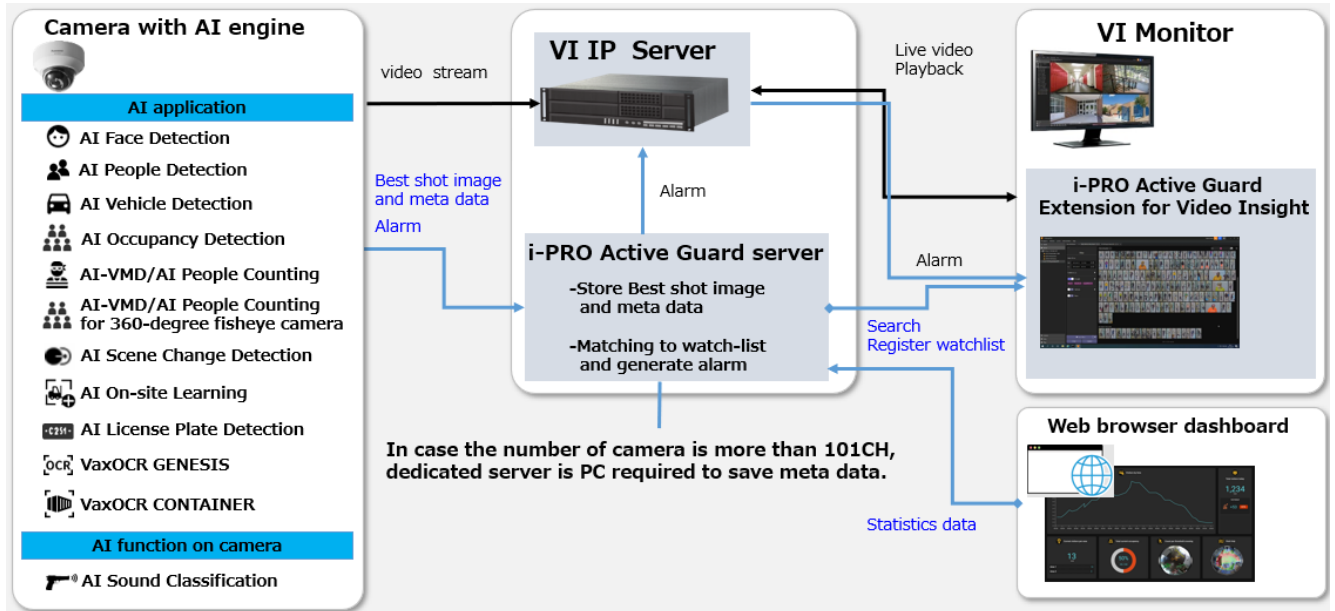
- The administrator should properly manage authentication information such as cameras, recorders, client software, Windows, databases, etc. so as not to leak to third parties.
- Always change passwords for cameras, recorders, client software, etc. from the default values, and perform appropriate management.
- 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.
- Please update to the latest version of i-PRO Active Guard Server and Plug-in (Extension) software to ensure safe and stable usage. Failure to do so may lead to increased security risks or operational issues.
- 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 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, vehicle, LPR, code or container is matched to watchlist.

i-PRO Active Guard Plug-in for Video Insight or i-PRO Active Guard Extension for Video Insight (hereinafter referred to as "Extension") which is the Extension software for VI Monitor 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.
  - V2.10 or later is required for area-specific search (Region of interest) in Extension.
- 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.
  - V2.10 or later is required for area-specific search (Region of interest) in Extension.
  - V2.20 or later is required for photo search in Extension.
- 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.
  - V2.10 or later is required for area-specific search (Region of interest) in Extension.
- AI Occupancy Detection: Camera's extension software. V1.60 or later is supported.
- AI-VMD/AI People Counting: 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 by the camera in dashboard.
  - V3.70 or later is required for heatmap in dashboard People counting.
- 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 by the camera on dashboard.
- 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.
  - V2.10 or later is required for specify lines/area individually in dashboard.

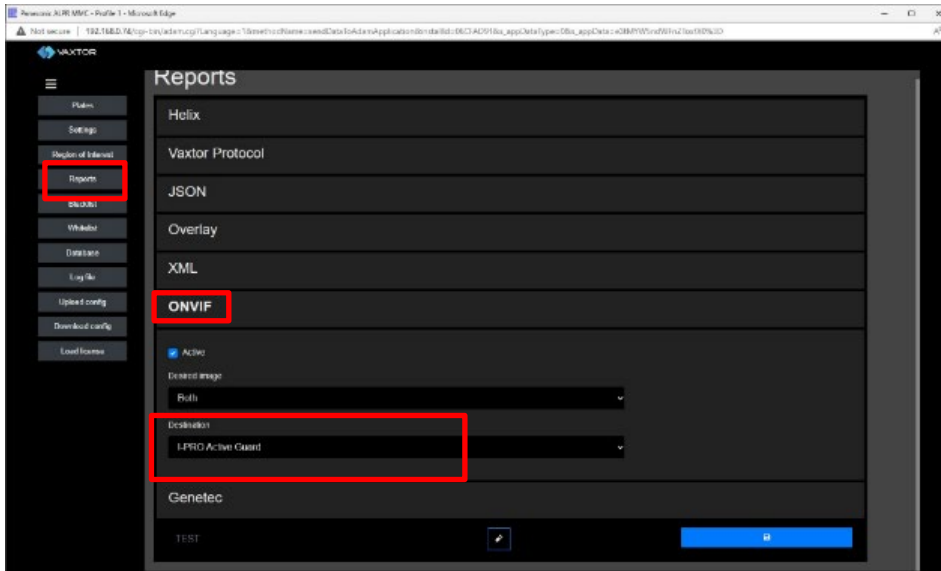
Please see [https://i-pro.com/products\\_and\\_solutions/en/surveillance/learning-and-support/knowledge-base/product-tips/active-guard-links](https://i-pro.com/products_and_solutions/en/surveillance/learning-and-support/knowledge-base/product-tips/active-guard-links) for more information.

[Partner's application: [Vaxtor Technologies](#)]

- VaxALPR Camera's extension software. V1.3.16 or later is supported.
- VaxOCR GENESIS Camera's extension software. V1.3.7 or later is supported.
- VaxOCR CONTAINER Camera's extension software. V1.0.5 or later is supported.

About Vaxtor's application (VaxALPR, VaxOCR GENESIS, VaxOCR CONTAINER)

- For Multi-Sensor Cameras, only 1ch is supported.
- Vaxtor's application does not work just by installing it on the camera.
  - Set "Reports - ONVIF – Destination" to "i-PRO Active Guard" in Vaxtor's application settings.



For more information on Vaxtor’s application, please see [application list](#).

For integration with 3rd party extension software, excluding VaxALPR, VaxOCR GENESIS and VaxOCR CONTAINER, 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 / Extension**

Software	Version
VI server (Recording server) VI Monitor (Client software) *VI Enterprise is supported; VI Express is not supported.	V8.0.0 or later
i-PRO Active Guard server	V2.1.1 or later
i-PRO Active Guard - Extension for Video Insight	V2.1.0 or later

**In case of using a version prior to VI version 8, please use a previous version.**

Software	Version
VI IP server (Recording server) VI MonitorPlus (Client software) *VI Enterprise is supported; VI Express is not supported.	V7.8.3 to V7.10.4
i-PRO Active Guard server / i-PRO Active Guard Plug-in for Video Insight	V1.0.0 to V2.00

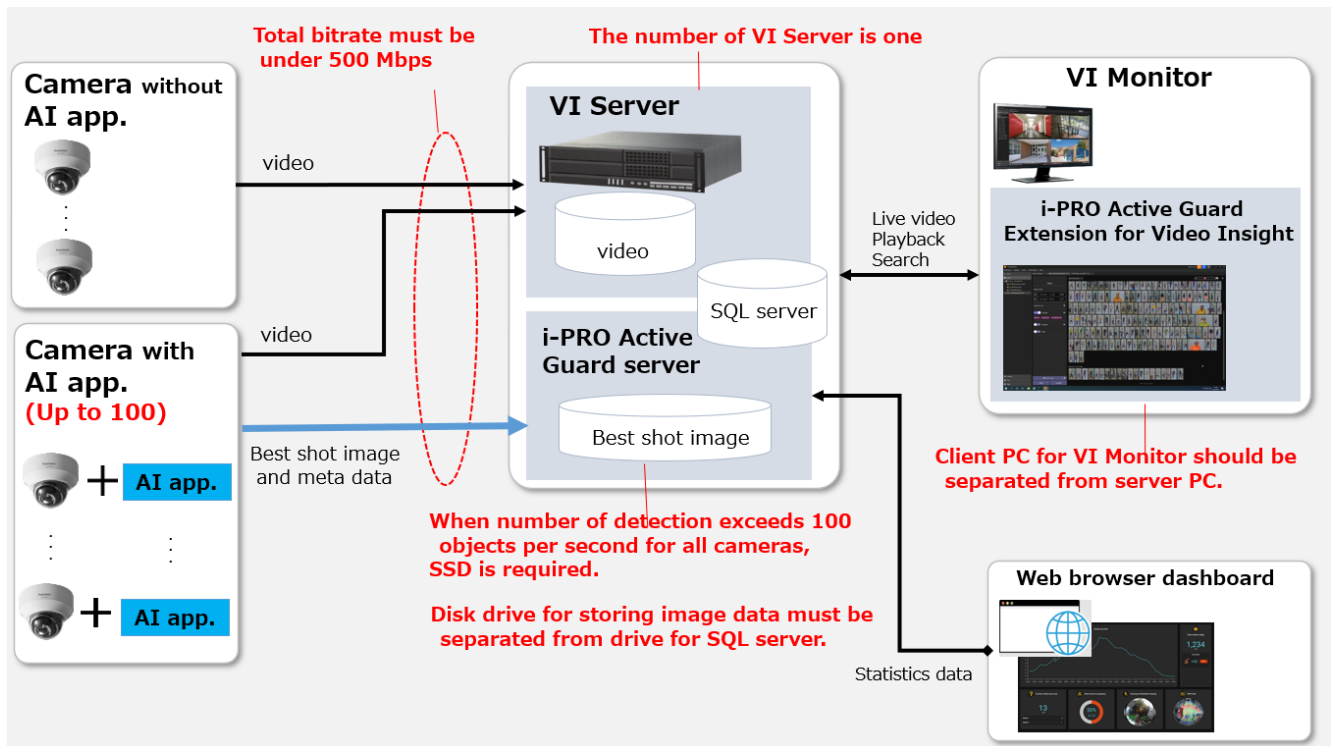
## 3. System design

### 3.1. System architecture

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

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

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



#### Important:

- Due to i-PRO Active Guard server maintenance, i-PRO Active Guard server and SQL Server must be kept running from 0:00 - 4:00.

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

- (1) Up to 100 cameras with AI engine, including up to 20 cameras with AI Face Detection.
- (2) Total bitrate that server PC receives must be under 500Mbps. Both bitrate of video data and best shot images and people counting data 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 and people counting data can be calculated in 3.3.
- (3) The number of VI server is one. When multiple VI 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 server.

(4) Disk drive for storing Best shot image must be separate from drive for storing video and SQL Server.

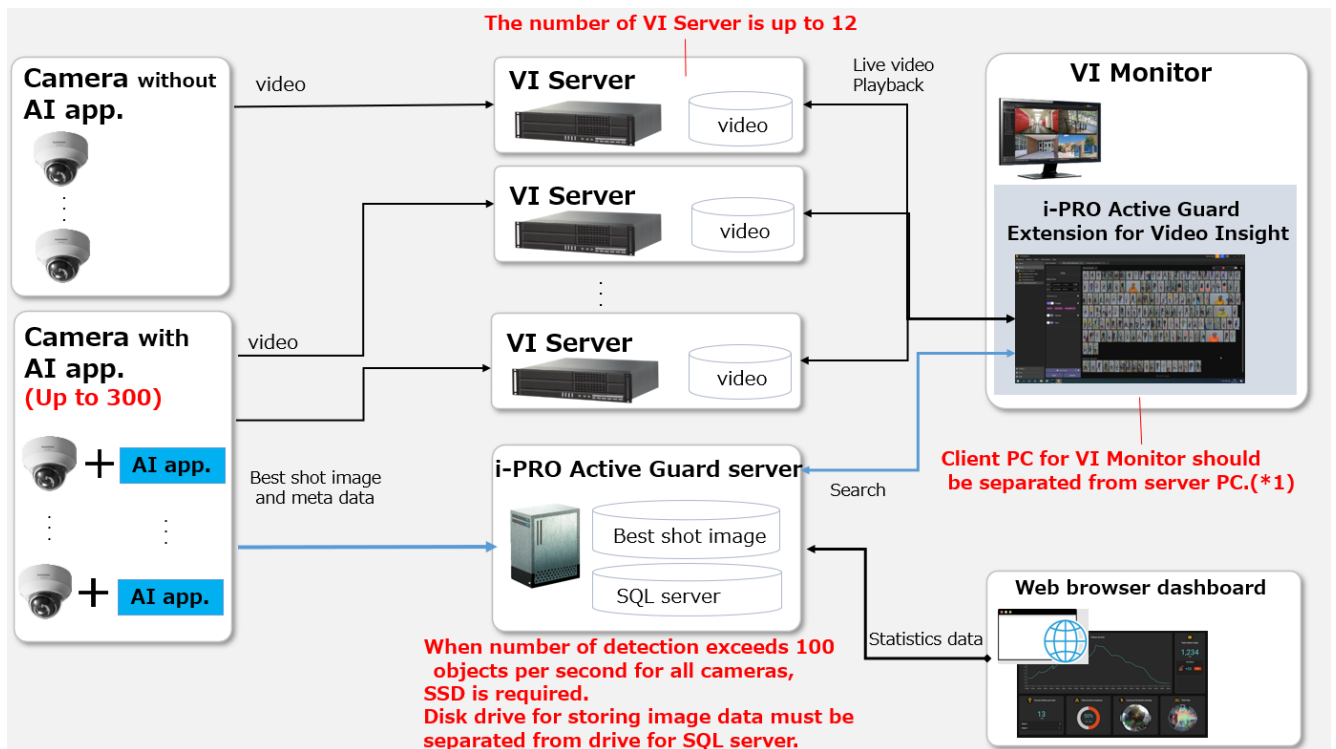
For the file path to store "SQL Server", see 4.3.1.

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. Extension can connect to one i-PRO Active Guard server.

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



\*1 Extension can be connected to multiple i-PRO Active Guard servers. It supports bulk search and watchlist alarm.

Watchlist need to be set for each i-PRO Active Guard server and cannot be shared.

#### Important:

- Due to i-PRO Active Guard server maintenance, i-PRO Active Guard server and SQL Server must be kept running from 0:00 - 4:00.

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

- (1) Up to 300 cameras with AI engine, including up to 100 cameras with AI Face Detection.
- (2) Up to 12 VI server can be registered to i-PRO Active Guard server.  
Each camera should be registered to one VI 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. Extension 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 server</p> <p>* Bandwidth limitations apply.</p>	<ul style="list-style-type: none"> <li>• Intel® Xeon® Silver 4208 (2.1 GHz, 8 core 16 thread) or better</li> <li>• 32 GB of RAM or more</li> <li>• 64 bit operating system               <ul style="list-style-type: none"> <li>Microsoft® Windows Server 2016 Standard</li> <li>Microsoft® Windows Server 2019 Standard</li> <li>Microsoft® Windows Server 2022 Standard</li> <li>Microsoft® Windows Server 2025 Standard</li> <li>Microsoft® Windows Server 2016 Datacenter</li> <li>Microsoft® Windows Server 2019 Datacenter</li> <li>Microsoft® Windows Server 2022 Datacenter</li> <li>Microsoft® Windows Server 2025 Datacenter</li> </ul> </li> <li>• GbE network interface card</li> </ul>
<p>Up to 100 cameras</p> <p>i-PRO Active Guard server installed in dedicated server</p>	<ul style="list-style-type: none"> <li>• Intel® Core™ i7-9700 (3.0 GHz, 8 core 8 thread) or better</li> <li>• 32 GB of RAM or more</li> <li>• 64 bit operating system               <ul style="list-style-type: none"> <li>Microsoft® Windows 10 Pro</li> <li>Microsoft® Windows 10 Enterprise</li> <li>Microsoft® Windows 10 Education</li> <li>Microsoft® Windows 10 Pro Education</li> <li>Microsoft® Windows 10 IoT Enterprise</li> <li>* Version 2004 or later</li> <li>Microsoft® Windows 11 Pro</li> <li>Microsoft® Windows 11 Enterprise</li> <li>Microsoft® Windows 11 Education</li> <li>Microsoft® Windows 11 Pro Education</li> <li>Microsoft® Windows 11 IoT Enterprise</li> <li>Microsoft® Windows Server 2016 Standard</li> <li>Microsoft® Windows Server 2019 Standard</li> <li>Microsoft® Windows Server 2022 Standard</li> <li>Microsoft® Windows Server 2025 Standard</li> <li>Microsoft® Windows Server 2016 Datacenter</li> <li>Microsoft® Windows Server 2019 Datacenter</li> <li>Microsoft® Windows Server 2022 Datacenter</li> <li>Microsoft® Windows Server 2025 Datacenter</li> </ul> </li> <li>• GbE network interface card</li> </ul>

	Requirement
Up to 300 cameras  i-PRO Active Guard server installed in dedicated server	<ul style="list-style-type: none"> <li>• Intel® Xeon® Silver 4208 (2.1 GHz, 8 core 16 thread) or better</li> <li>• 32 GB of RAM or more</li> <li>• 64 bit operating system</li> </ul> <p>Microsoft® Windows Server 2016 Standard Microsoft® Windows Server 2019 Standard Microsoft® Windows Server 2022 Standard Microsoft® Windows Server 2025 Datacenter</p> <p>Microsoft® Windows Server 2016 Datacenter Microsoft® Windows Server 2019 Datacenter Microsoft® Windows Server 2022 Datacenter Microsoft® Windows Server 2025 Datacenter</p> <ul style="list-style-type: none"> <li>• GbE network interface card</li> </ul>

**Important for using “free text search”:**

- This feature may require higher system specifications than those listed above.  
The required environment may vary depending on the number of detections.  
Please refer to 3.3 for details.
- GPU acceleration is supported on NVIDIA GPUs from the Pascal generation and later.  
For GPU settings, please refer to 4.3.2.3.5.

Note)

i-PRO Active Guard server can be run on Microsoft® Hyper-V with Windows Server 2022 and VMware® ESXi 7.0 Update 3 and VMware® ESXi 8.0 Update 3e.

When using virtual platform, CPU, memory, network adapters, and storage may become bottlenecks. Please consider in advance the allocation of sufficient CPU, memory, and network settings to meet the above hardware requirements.

## Common software requirement

Category	Supported software
Database Engines	<ul style="list-style-type: none"><li>• SQL Server 2014/2016/2019/2022</li></ul> <p>The following SQL Server is installed when new installing</p> <ul style="list-style-type: none"><li>- i-PRO Active Guard Server version 1.0.0 to 1.6.2 SQL Server 2016 Express Edition.</li><li>- i-PRO Active Guard Server version 1.7.0 or later SQL Server 2019 Express Edition.</li></ul> <p>For update i-PRO Active Guard server, SQL Server carries over the existing version.</p> <p>SQL Server edition upgrade procedure is shown in 5.11.</p>
Web browser for Configuration Tool	<ul style="list-style-type: none"><li>•Microsoft Edge 85 or later</li><li>•Chrome 83 or later</li><li>•Firefox 95 or later</li></ul> <p>* In Firefox, if the monitor resolution is higher than Full-HD (1920 x 1080), the display scaling may not work.</p>

## 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, etc. should be under 8GB.” Check 3.3 to see if the Express edition is sufficient.

### 3.2.2 System requirement for Extension

Component	Requirement
Processor	6th Generation or better Intel Core processor (3.1 GHz quad-core+) or better
Memory	8 GB or more
Video	1 GB
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 i-PRO AI cameras

Confirm the number of cameras with AI app to be registered on i-PRO Active Guard Server.

Item	What to Count
The number of AI cameras with AI face detection	Count the total number of cameras with AI Face Detection enabled. This includes: •Cameras with only AI Face Detection •Cameras with AI Face Detection and other AI functions*
The number of AI cameras with AI apps other than AI face detection	Count the number of cameras with AI functions other than AI Face Detection* enabled.
The total number of AI cameras	Total values from the cells above.

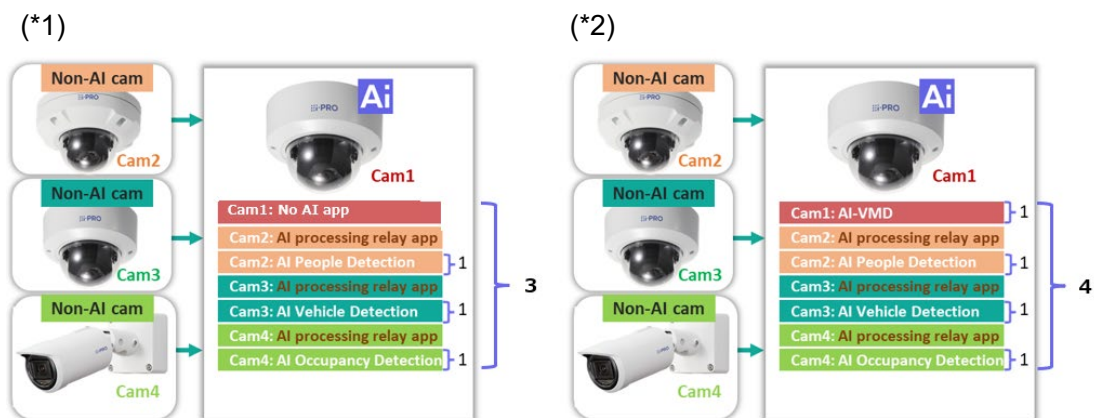
\*AI functions other than Face Detection include:

AI People detection, AI Vehicle detection, AI Occupancy detection, AI-VMD/People Counting, AI Sound Classification, AI Scene Change detection, License Plate detection, VaxOCR GENESIS (Code detection), and VaxOCR CONTAINER (Container detection).

#### Note:

- How to count when using multi-directional cameras and AI processing relay application.
  - Multi-directional cameras: Count the number of sensors as the number of AI cameras.
  - Using AI Processing Relay app: Count the number of non-AI cameras. (\*1)

If you're also using other AI apps on X-series AI cameras used with the Relay app, please make sure to add the number of X-series AI cameras as well. (\*2)



■ Up to 100 cameras in total, including up to 20 cameras with AI Face Detection.

i-PRO Active Guard server can be installed on the same PC as VI server. Please see 3.1.A.

■ Up to 300 cameras in total, including up to 100 cameras with AI Face Detection.

i-PRO Active Guard server must be installed in dedicated server PC. Please see 3.1.B.

**STEP2: The number of activated AI functions**

To calculate the bitrate of images, it is necessary to count the number of the following AI functions installed on each camera.

**AI functions to include in the calculation:**

Face / People / Vehicle / License Plate / Code / Container / Heat map\*

Count each AI functions individually per camera. For example, if both People and Vehicle are installed on a single camera, count 1 for each.

(Ex, When People and Vehicle are installed to a camera, add 1 for People and Vehicle, respectively.)

\*Heat Map refers to the function in the AI-VMD app. For this item, please enter the number of cameras with the Heat Map function enabled in the AI-VMD app.

**AI functions NOT to Include in the calculation:**

AI Occupancy / AI Scene Change Detection / AI-VMD (Intruders, Loitering, Direction, Cross Line including Tailgating, People / Vehicle Counting). Since these AI functions are used for alarm purposes and generate minimal data. They do not need to be including the calculation.

		Face	People	Vehicle	License plate	Code	Container	Heat map
The number of activated AI functions								
The number of detections [per AI app, per hour]	Max.							
	Avg.							

Estimated data points of detections [per sec]	
---	--

\*For people, 1 object is counted as 2 data points. For other objects, 1 object is counted as 1 data point.

■ **When the number of “Estimated data points of detections” is less than 100**

HDD or SSD is available for disk drive.

■ **When the number of “Estimated data points of detections” is over 100**

SSD is required.

If an HDD is used, excess data will not be saved, and the entire system may not function properly.

“Estimated data points of detections” can be limited by the settings, see 4.3.5.4

The default setting is 100. Set the calculated value plus a margin.

**STEP2 (Optional): The number of cameras for free text search**

When using free text search, to calculate the disk size, it is necessary to count the number of AI functions installed on each camera.

In addition, free text search has a limitation on the number of images the i-PRO Active Guard server can receive per second from the cameras configured for free text search.

In this section, we will verify whether the expected number of images received per second exceeds this limitation.

**AI functions to include in the calculation:** People / Vehicle

\*Separately from STEP2, please input the number of activated AI functions per camera and the expected number of detections for free text search. You do not need to adjust or reduce the number of cases entered in STEP2.

		People	Vehicle
The number of AI functions for free text search			
The number of detections [per AI app, per hour]	Max.		

Estimated data points for free text search [per sec]	
--	--

\*For people, 1 object is counted as 2 data points. For other objects, 1 object is counted as 1 data point.

■ When “Estimated data points for free text search [per sec]” is more than 10.

Please refer to the following information and adjust the number of applications according to your PC specifications.

**Verified PC Information**

Install status	CPU	GPU	Max. data points [/s] for free text search
i-PRO Active Guard server installed with VMS	Intel® Xeon® Silver 4208	-	Up to 10
i-PRO Active Guard server installed in dedicated server	Intel® Core™ i7 - 9700	-	Up to 10
	Intel® Core™ i9 - 9900K	-	Up to 20
	Intel® Core™ i9 - 9900K	NVIDIA® GeForce® GTX 1050	Up to 32
	Intel® Core™ i9 - 9900K	NVIDIA® GeForce® RTX 2060 Super	Up to 32

**STEP3: Total bitrate server receives**

Maximum bitrate of best shot image [Mbps]	
Maximum bitrate of Heat map data [Mbps]	
Total bitrate of video recording for all cameras (*1) [Mbps]	
Total bitrate that server PC receives [Mbps]	

\*1: Storage and Bandwidth calculator for video is available on

<https://i-pro.com/us/en/surveillance/storage-and-bandwidth-calculator/>

■ When “Total bitrate that server PC receives” exceeds 500Mbps

i-PRO Active Guard server must be installed in dedicated server PC. Please see 3.1.B.

**STEP4: Retention period and storage**

	Face	People	Vehicle	License plate	Code	Container	Count/heatmap/Statistics
Retention period (day) (*2)							
Operating time (hours per day)							

\*2: Up to 31 days (92 days for Count/heatmap/Statistics) when using SQL Server Express Edition.

Up to 397 days (732 days for Count/heatmap/Statistics) when using SQL Server Standard or higher.

Estimated used disk size for best shot images [GB]	
Estimated used disk size for Heat map data [GB]	
Total Estimated used disk size [GB]	

Estimated used disk size for database [GB]	
--	--

■ When "Estimated used disk size for database" is under 8 GB

SQL Server Express Edition or higher can be used.

■ When more than 8GB

SQL Server Express Edition cannot to be used due to the limitation of Express Edition.

Standard Edition or higher is must. (Refer to 5.11)

## 3.4. Ports used in i-PRO Active Guard server

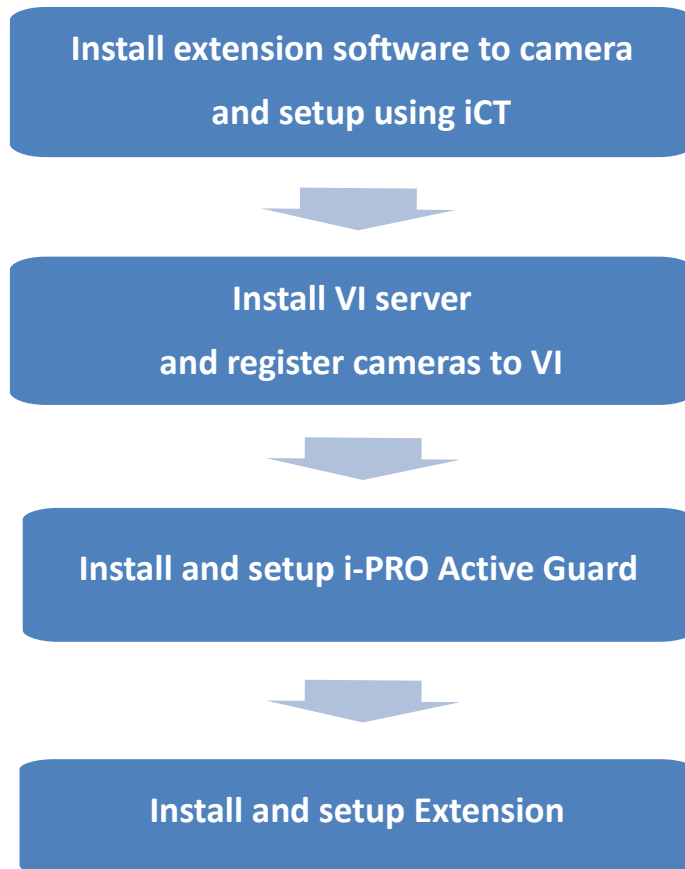
The following table lists the default network ports used by i-PRO Active Guard server.

These ports need to be allowed from firewall configurations.

Port number	Protocol	Port usage
1434	UDP	Connection to SQL Server Browser
1435	TCP	Connection to SQL Server
8090	HTTP	Client Extension connection
8091	HTTPS	Client Extension 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](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 server

Install the VMS server software and register the AI camera with the VMS client.

Install Extension to VI server and configure alarm port.

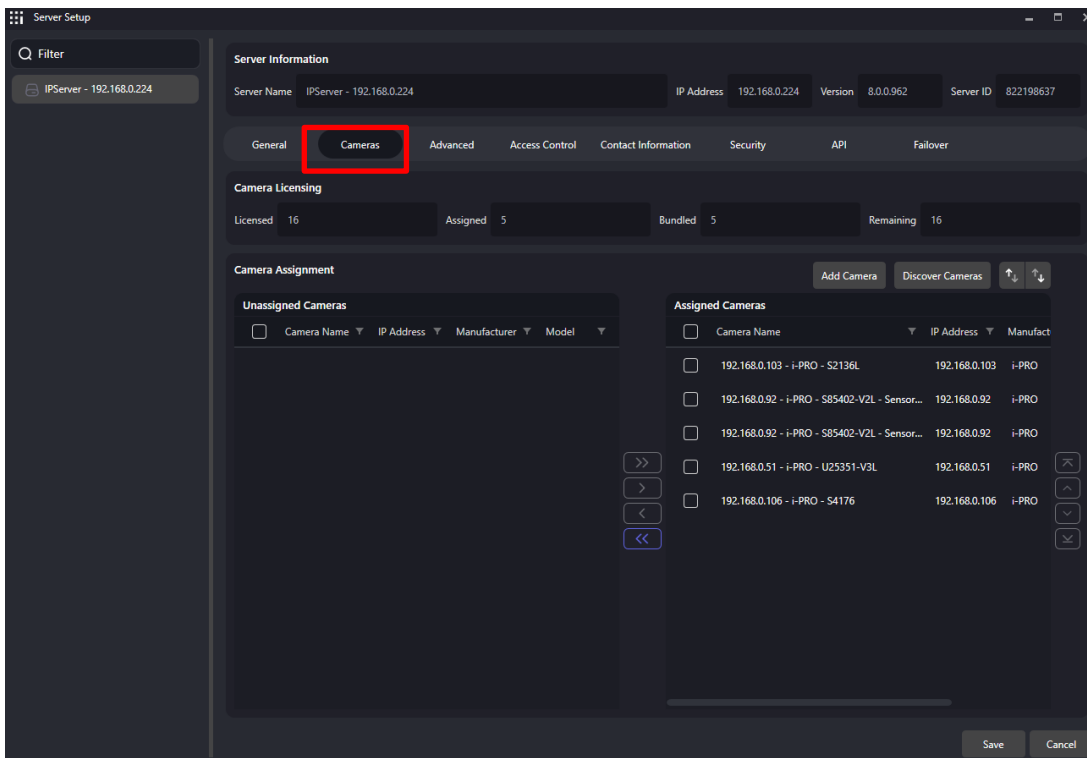
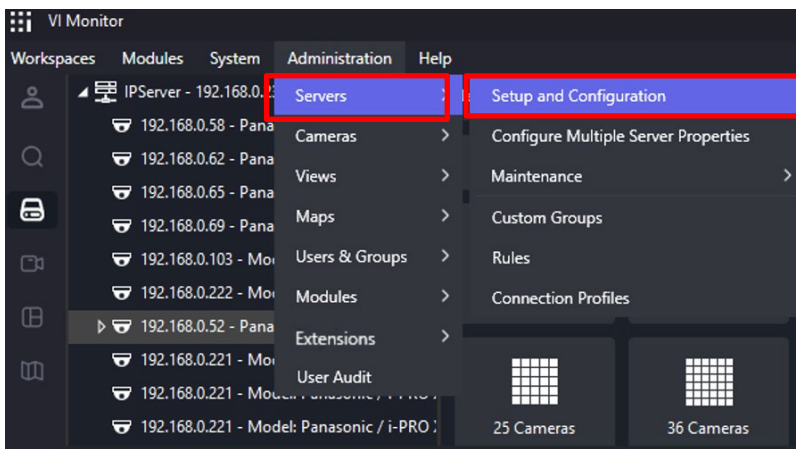
Register the camera in MAP as an Option setting.

### 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 server using VI Monitor.

([Administration] – [Servers] – [Setup and Configuration] – [Cameras])

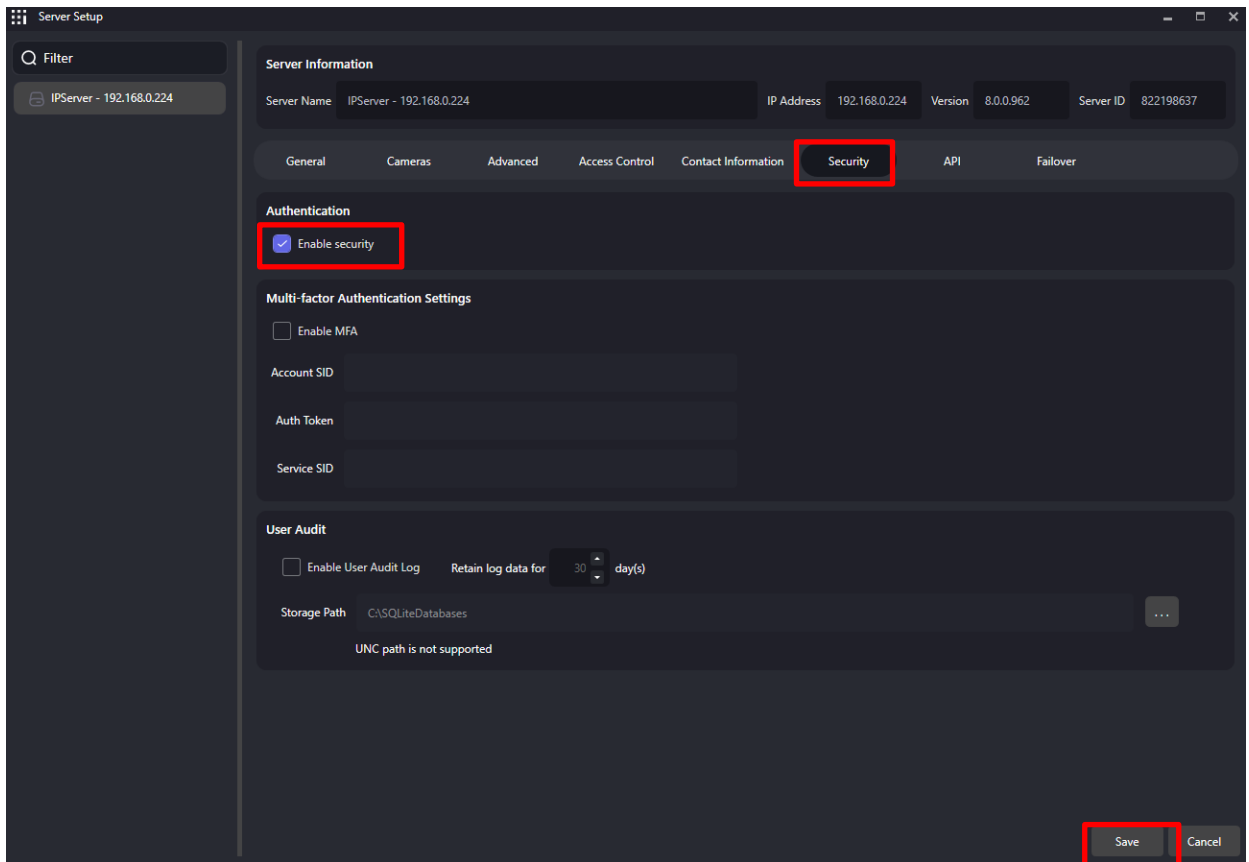
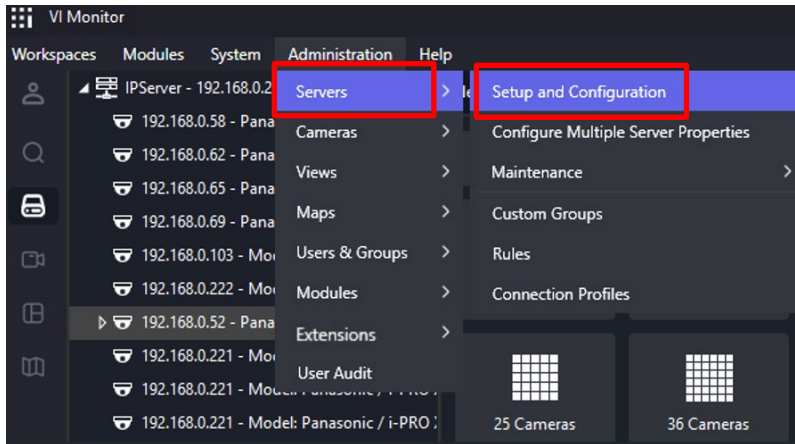


## 4.2.2. Setup VI server

### 4.2.2.1. Configure general settings

([Administration] - [Servers] - [Setup and Configuration] - [Security] tab)

Ensure that [Enable Security] is checked. If it is not, check it and [Save].



## 4.2.2.2. Configure network settings

This section explains how to check and configure the IP address used by the VI Server.

This configuration is required if the VI Server PC has multiple IP addresses, such as when multiple network cards are installed.

### STEP1

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

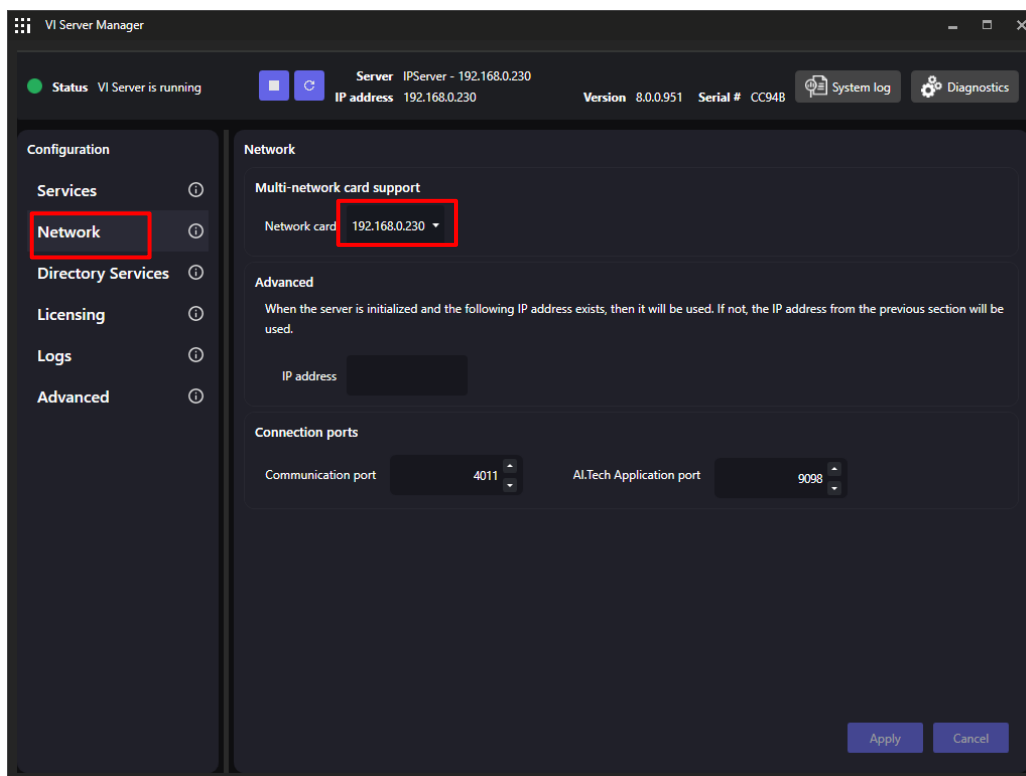
### STEP2

Click [Network] button.

Select the IP address in [Network card] that allows communication with the i-PRO Active Guard server on the same network.

Note)

When register VMS on i-PRO Active Guard server, specify the IP address you configured in this chapter.



### **4.2.2.3. Register cameras to Map (optional)**

Using maps, operator can easily find the location of each best shot image on Extension 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 Extension to VI server

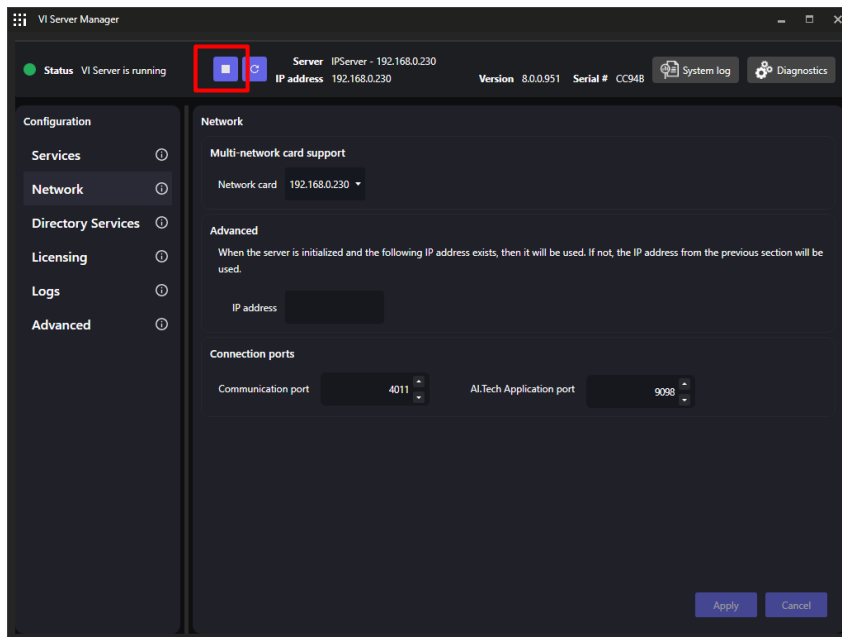
Install “i-PRO Active Guard Extension for Video Insight” software to VI server’s PC.

### 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 VI 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](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.

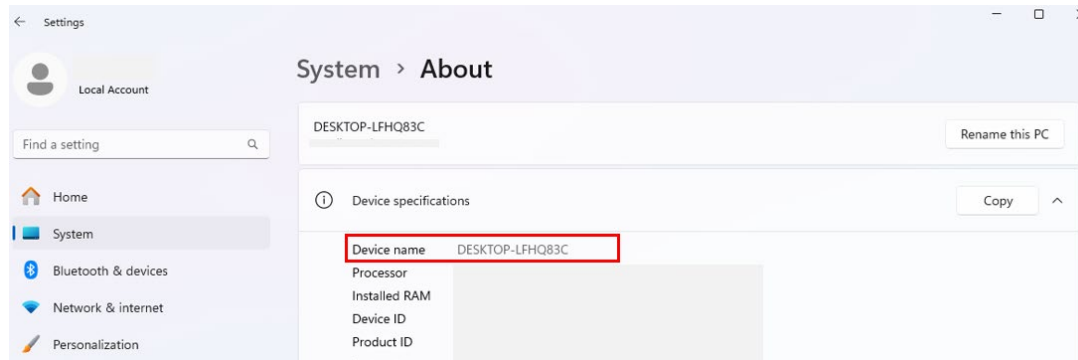
### 4.3.1. Install

This chapter describes how to install using the i-PRO Active Guard installer.

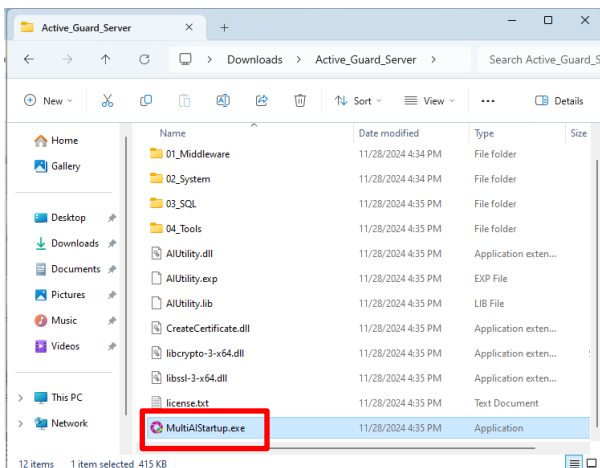
If you are installing using the VI installer, please refer to the VI manual.

#### Important:

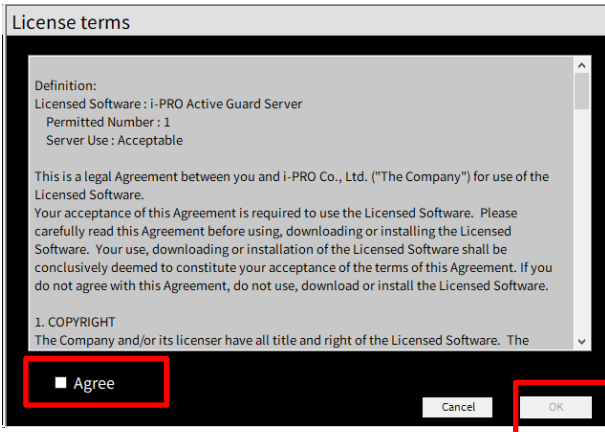
- Please temporarily turn off antivirus software before installing.
- File path length of ***MultiAStartup.exe*** must be less than 119.
- Device name must be alphanumeric and hyphenated only.



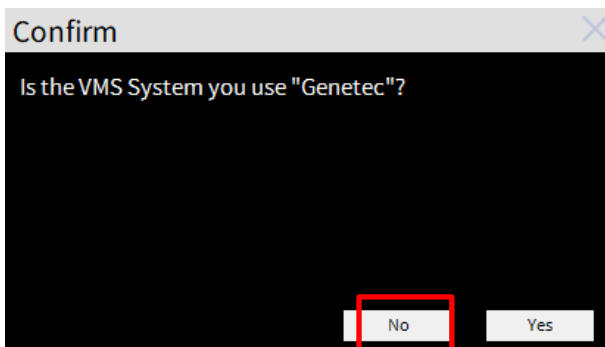
Execute "***MultiAStartup.exe***" as administrator.



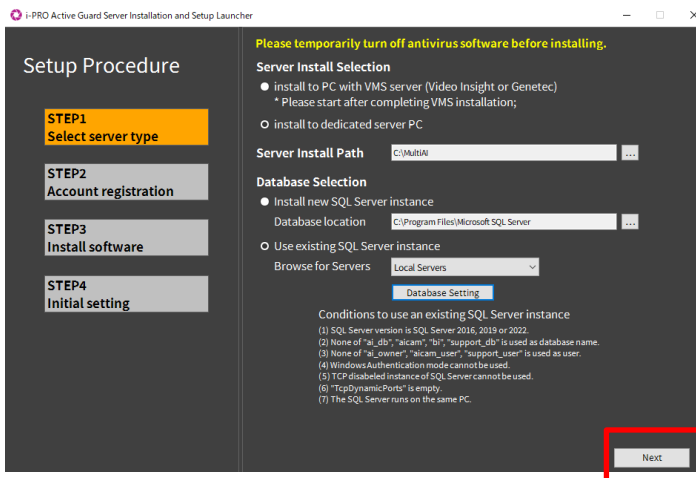
When .NET Framework 4.8 and Microsoft Visual C++ Redistributable are not installed on the PC, it will automatically be installed, and the main screen of the setup tool will be displayed after the installation. Also, when you use Windows 10 version 20H2, Windows Update message. Execute "Windows Update" according to the message.



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



Click [No].



• Server Install Selection

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

• Server Install Path

Set install path for i-PRO Active Guard server.

• Database Selection

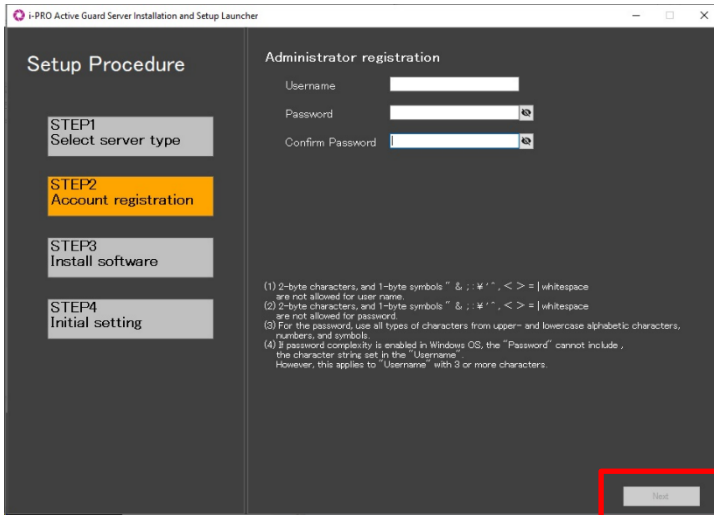
Select [Install new SQL Server instance] or [Use existing SQL Server instance].

For [Install new SQL Server instance], you need to set Database location.

For [Use existing SQL Server instance], you need to click [Database Setting] to set the existing SQL Server instance.

For details, please refer to 4.3.1.1.

Click [Next].

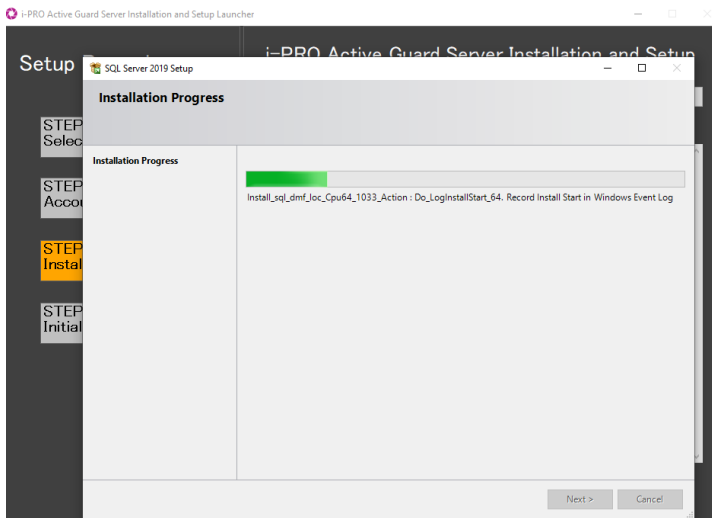


Register credentials and click [Next].

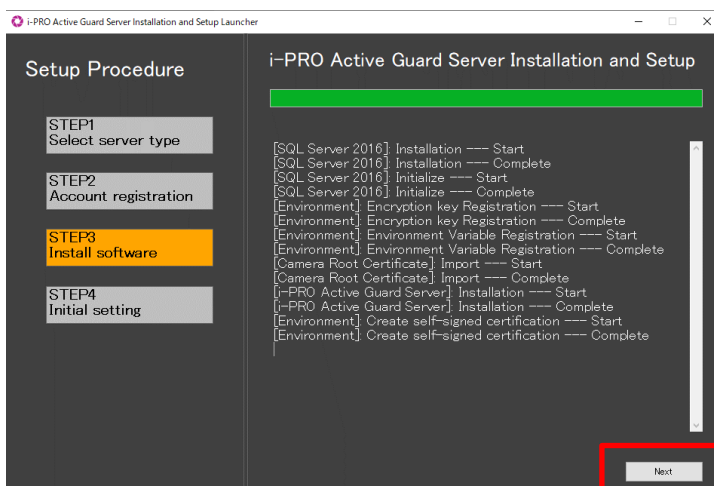
Note)

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).

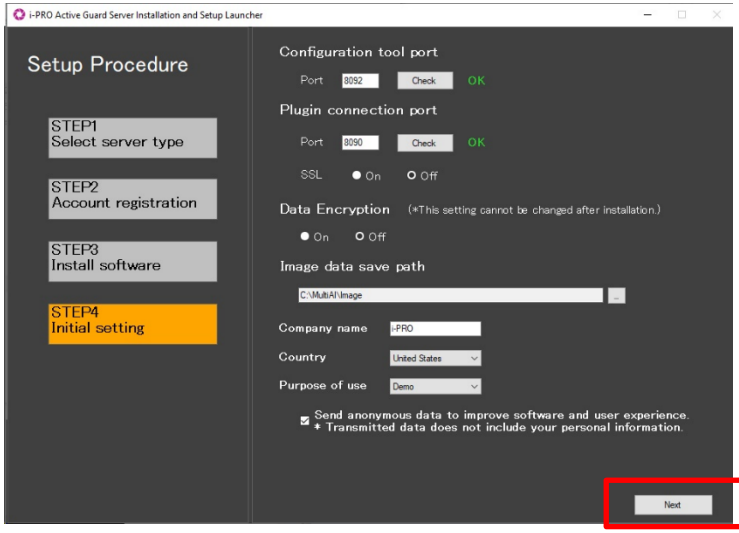


Installation starts.



[Next] button will be appeared when finished.

Click [Next].

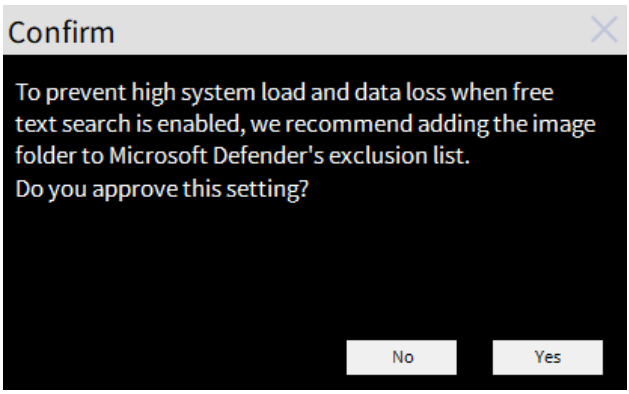


Configure port number, SSL and Data Encryption, Image data save path, Company name, Country and Purpose of use.

Click [Next].

**Important:**

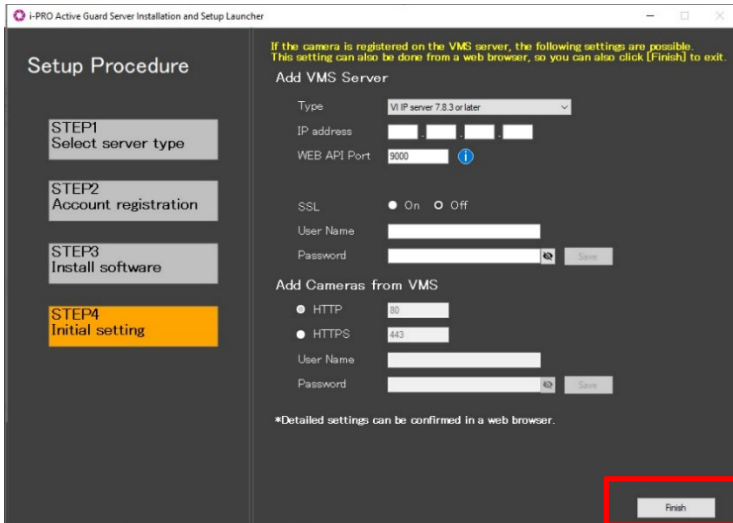
- When “On” is selected for Data Encryption, Image data will be encrypted. This setting cannot be changed after installation.
- Re-installation is required when you want to change after completing installation.



Please choose whether to add the “Image data save path” folder to the Microsoft Defender’s exclusion list.

Note)

- It is also possible to change the settings after starting operation. Refer to 4.3.9.1.
- If you are using antivirus software other than Microsoft Defender, you may be able to reduce system load by excluding folders in a similar way, especially if the software has real-time protection features.



Register VMS Server and cameras.

To finish the settings, click [Finish].

[Finish] can be clicked at any time without registering the VMS Server and Cameras.

•Add VMS Server

Set Type to “VI server”, and set IP address, WEB API Port, SSL, User Name, Password.

Click [Save] to check the connection to VMS Server and save settings if the connection is successful.

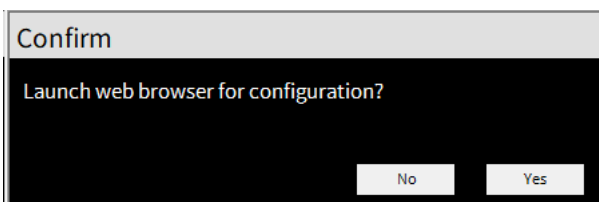
Note)

Set the “IP address” as confirmed in 4.2.2.2  
Configure network settings.

•Add Cameras from VMS

Set HTTP or HTTPS, HTTP port, HTTPS port, User Name, Password of the cameras registered on VMS Server. Click [Save] to check the connection to the cameras and save settings if one or more connections are successful.

\* Camera with AI Processing Relay will not be registered. register from web browser.



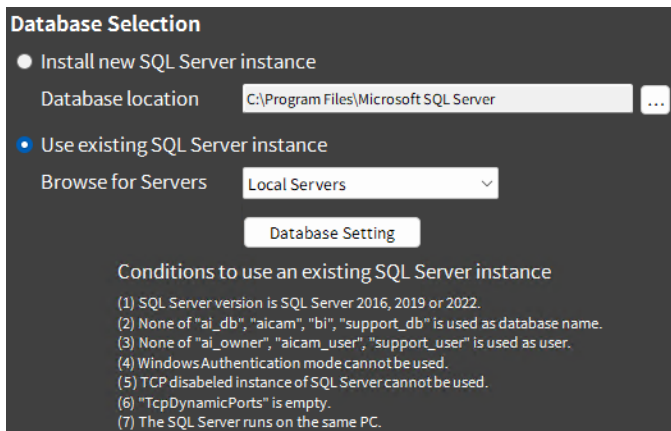
A dialog box will appear asking about launch web browser.

Please make your selection as necessary.

Refer to 4.3.2 for configuration.

### 4.3.1.1. Install SQL database to exist instance

The installer can create an SQL database to an existing instance on the local servers or network servers by selecting [Use existing SQL Server instance] in STEP 1.



Conditions to use an existing SQL Server instance

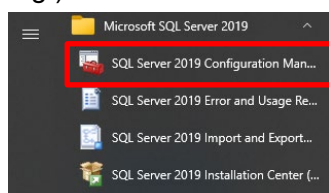
- (1) SQL Server version is SQL Server 2016, 2019 or 2022.
- (2) None of "ai\_db", "aicam", "bi", "support\_db" is used as database name.
- (3) None of "ai\_owner", "aicam\_user", "support\_user" is used as user.
- (4) Windows Authentication mode cannot be used.
- (5) TCP disabled instance of SQL Server cannot be used.
- (6) "TCP Dynamic Ports" is empty.
- (7) The SQL Server runs on the same PC. \* Local Servers only.

Note)

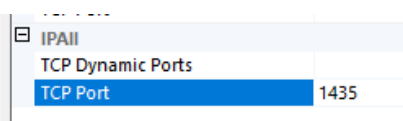
If you select [Use existing SQL Server instance] and install SQL, make sure TCP Port is configured. If the setting is blank, please set "1435".

1. Run "SQL Server Configuration Manager"

e.g.) SQL Server 2019

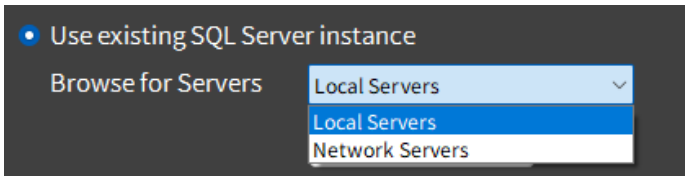


2. SQL Server Network Configuration - Protocols for (instance name) - TCP/IP - IP Addresses tab – IPAll - TCP Port=1435.



If 1435 is already in use, set another empty port. In case of i-PRO Active Guard server is already installed, uninstall and reinstall it after setting the port.

Select [Use existing SQL Server instance], then select [Local Server] or [Network Server] from the drop-down list and click [Database Setting] button.

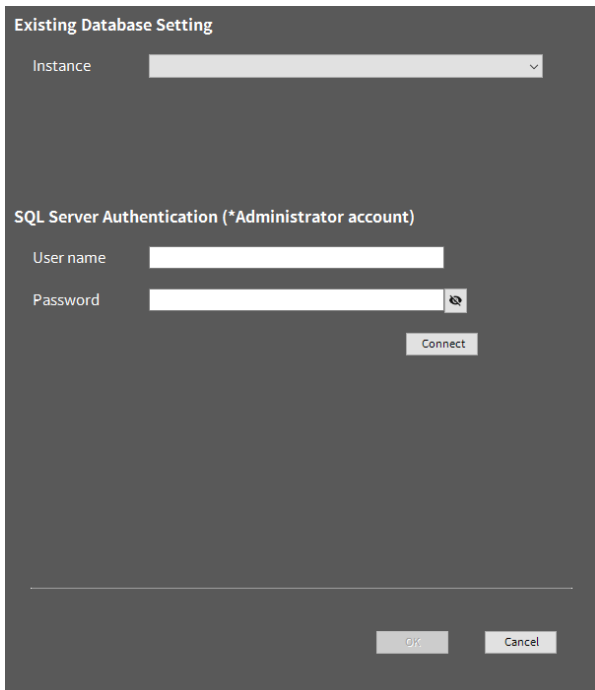


Note)

[Local Server]: Install the database on the PC where the installer is running.

[Network Server]: Install database on SQL server via TCP/IP.

For [Local Server]



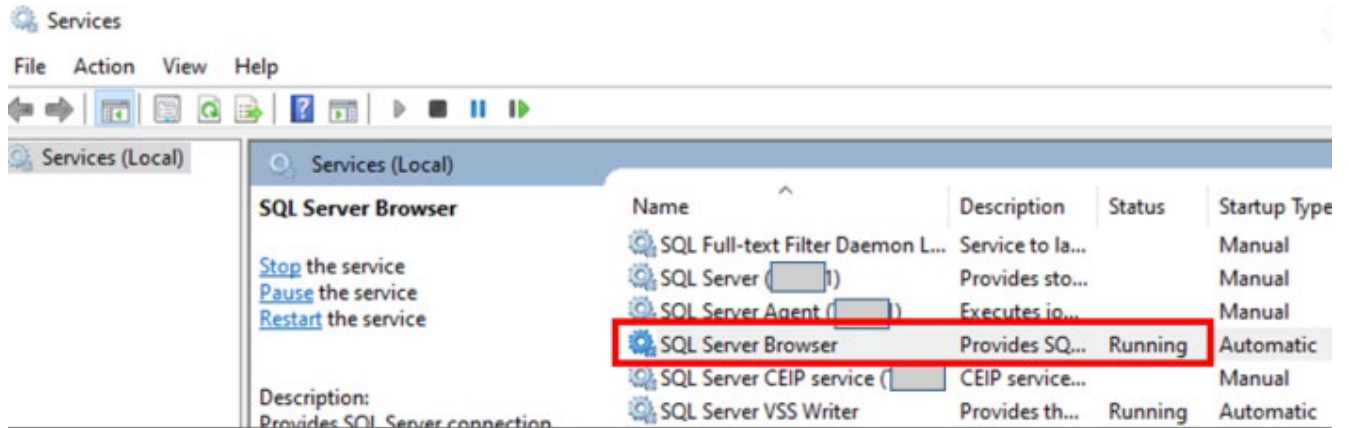
Select existing SQL Server instance, set Administrator (Server Roles: sysadmin) credentials and click [Connect].

If it shows success, click [OK].

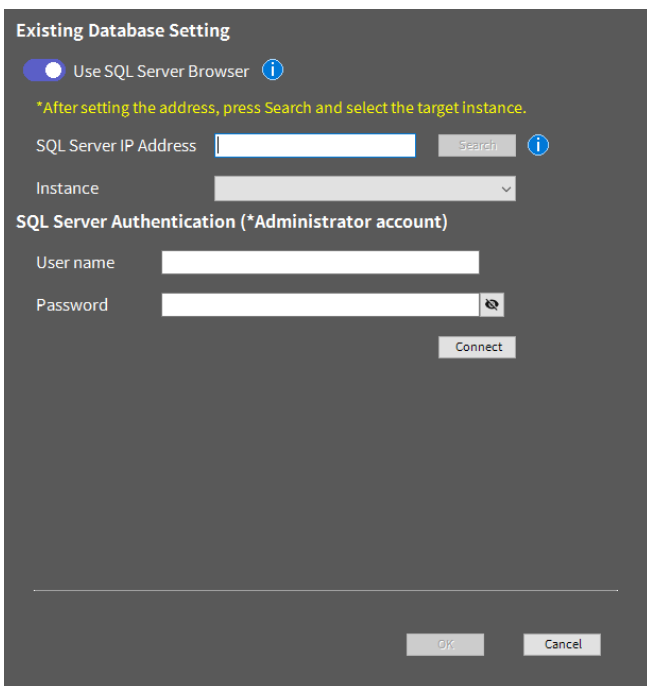
For [Network Server]

There are two ways to use the SQL Server Browser or not.

Confirm “SQL Server Browser” service status is Running or “Stopped”.



- When using SQL Server browser.



[Use SQL Server Browser] is “On”.

Input [SQL Server IP Address] and click [Search].

Select an instance from the Instance drop-down list, set administrator (Server roles: sysadmin) credentials and click [Connect].

If it shows success, click [OK].

If it is not success, please check the display and click [Connect] again.

- When not using SQL Server browser.

Existing Database Setting

Use SQL Server Browser ⓘ

SQL Server IP Address  ⓘ

TCP Port

SQL Server Authentication (\*Administrator account)

User name

Password  🔒

Connect

OK Cancel

[Use SQL Server Browser] is "Off".

Input [SQL Server IP Address] and input [TCP Port].

Set administrator (Server roles: sysadmin) credentials and click [Connect].

If it shows success, click [OK].

Note)

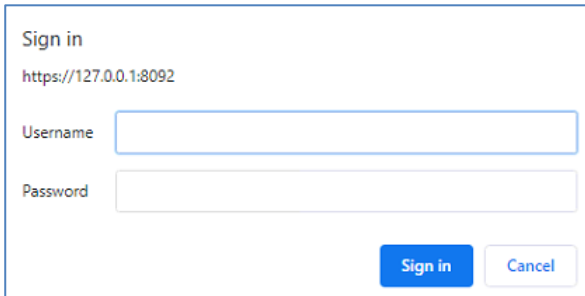
- Use the TDS protocol with encryption settings to encrypt communication between the i-PRO Active Guard Server and SQL Server PC.
- "Network Servers" can also specify FCI (failover cluster instances).  
When using an FCI, input the IP address of the FCI in "SQL Server IP address".

## 4.3.2. Setup i-PRO Active Guard server

### 4.3.2.2. 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.

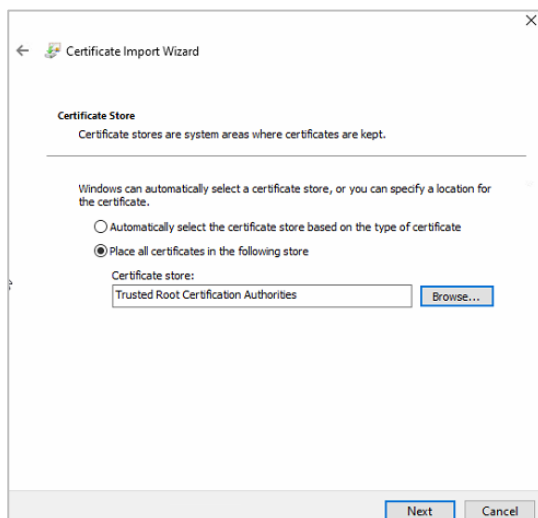
When the security alert window is displayed, click [advanced] and [Proceed to <ip> (unsafe)].

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

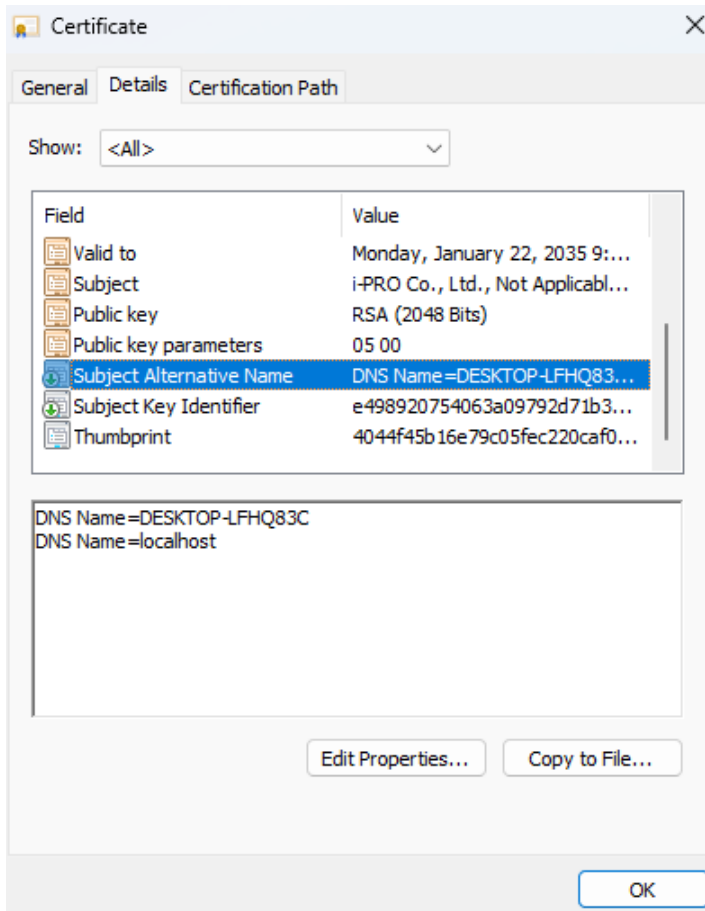
- 1) Copy "C:\MultiAI\apache24\conf\server.crt" in i-PRO Active Guard server PC to client PC.
- 2) Double click the file and click "Install Certificate."
- 3) Select "Local Machine" for Store Location
- 4) Select "Place all certificates in the following store and "Trusted Root Certification Authorities."

Note)

- The MultiAI path above is the default, if you changed the path in section 4.3.1, please replace the path.



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




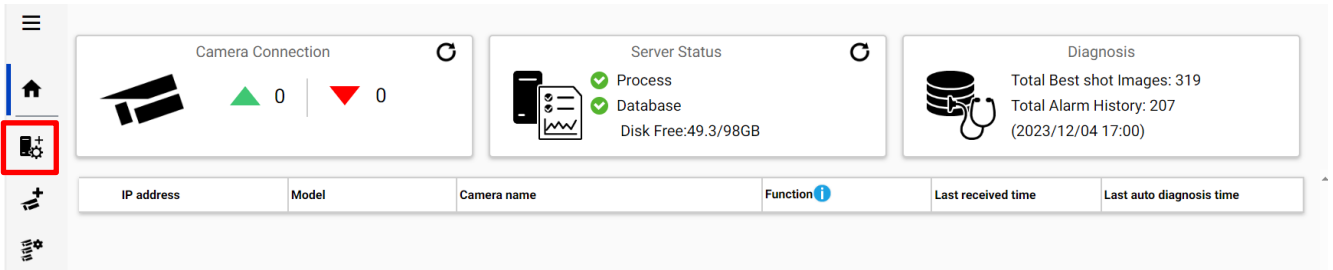
6) Open "C:\Windows\System32\drivers\etc\hosts" and add IP address of i-PRO Active Guard server and xxxx(DNS Name that is not "localhost").

Ex) 192.168.0.125 DESKTOP-LFHQ83C

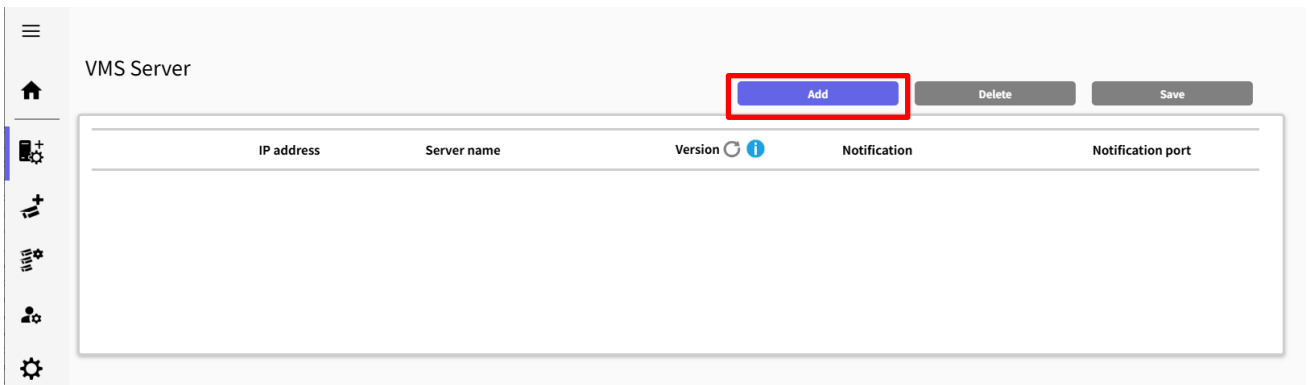
7) Access <https://xxxx:8092> using web browser.

### 4.3.2.2. Register VMS

Click  (Register VMS)



Click [Add]



Input VI server's information and click [Test]

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: .....

**Test**

Save

Note)

Set the "IP address" as confirmed in 4.2.2.2 Configure network settings.

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]

Test

Succeeded

Save

Confirm VMS server is registered.

Restart process is required to finish configuration. Restart

VMS Server

Add Delete Save


	IP address	Server name	Version	Notification	Notification port
1	192.168.0.206	IP Server -192.168.0.206	7.10.3.151	<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 usage of image storage drive (delete old images) <input checked="" type="checkbox"/> Advanced	9000

Note)

Restart button will be appeared on the top of screen, but you do not need click now.

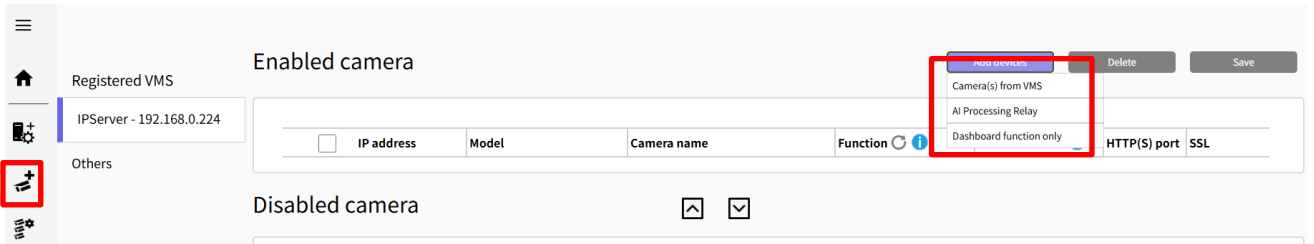
You need to click Restart after completing all other configuration.

### 4.3.2.3. Register Cameras

Click  (Register Cameras)

Select [Add devices] and select camera registration method.

- Camera(s) from VMS Please refer to [4.3.2.3.1].
- AI Processing Relay Please refer to [4.3.2.3.2].
- Dashboard function only Please refer to [4.3.2.3.3].

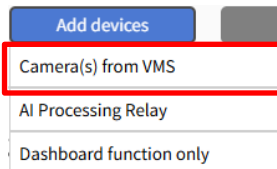


### 4.3.2.3.1. Camera(s) from VMS

Register the camera registered on the VMS to i-PRO Active Guard.

#### STEP1

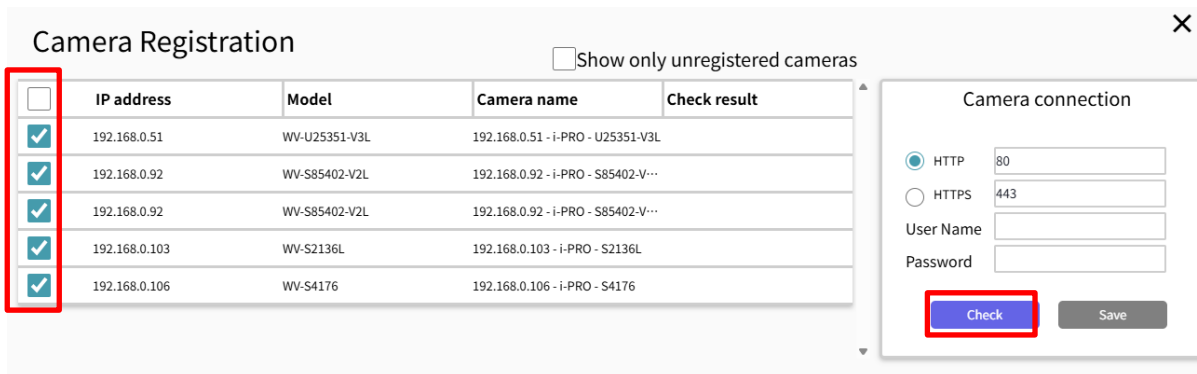
Click [Add devices] - [Camera(s) from VMS]



#### STEP2

All i-PRO cameras (including non-supported cameras) are shown.

Select cameras you want to register to i-PRO Active Guard, input camera's credentials and click [Check].



Note)

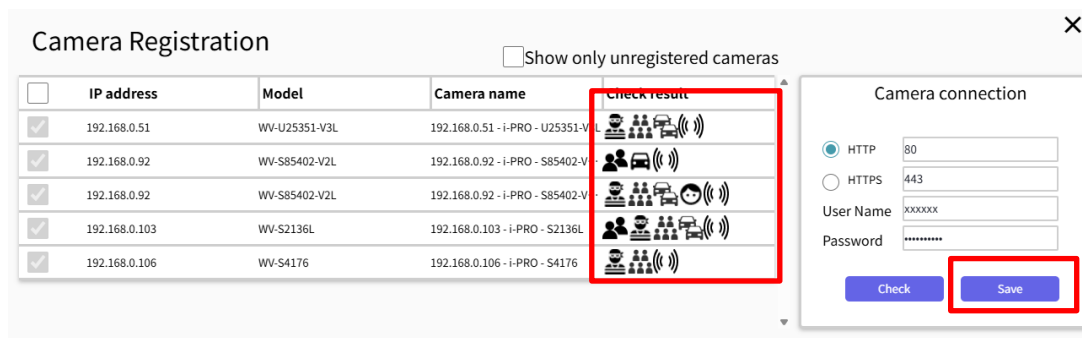
Camera can be sorted by [IP address], [Camera Type] or [Camera Name].

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

#### STEP3

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

Click [Save].



Note)

For information about icons, please refer to [4.3.2.3.4].

## STEP4

Confirm cameras are registered.

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

Registered VMS: IPServer - 192.168.0.224

Others:

### Enabled camera

[Add devices](#) [Delete](#) [Save](#)

<input checked="" type="checkbox"/>	IP address	Model	Camera name	Function	Free text search	HTTP(S) port	SSL
1 <input type="checkbox"/>	192.168.0.51	WV-U25351-V3L	192.168.0.51 - i-PRO - U25351-V3L		<input type="checkbox"/>	80	Off
2 <input type="checkbox"/>	192.168.0.92	WV-S85402-V2L	192.168.0.92 - i-PRO - S85402-V2L - S...		<input type="checkbox"/>	80	Off
3 <input type="checkbox"/>	192.168.0.92	WV-S85402-V2L	192.168.0.92 - i-PRO - S85402-V2L - S...		<input type="checkbox"/>	80	Off
4 <input type="checkbox"/>	192.168.0.103	WV-S2136L	192.168.0.103 - i-PRO - S2136L		<input type="checkbox"/>	80	Off
5 <input type="checkbox"/>	192.168.0.106	WV-S4176	192.168.0.106 - i-PRO - S4176		<input type="checkbox"/>	80	Off

### Disabled camera

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

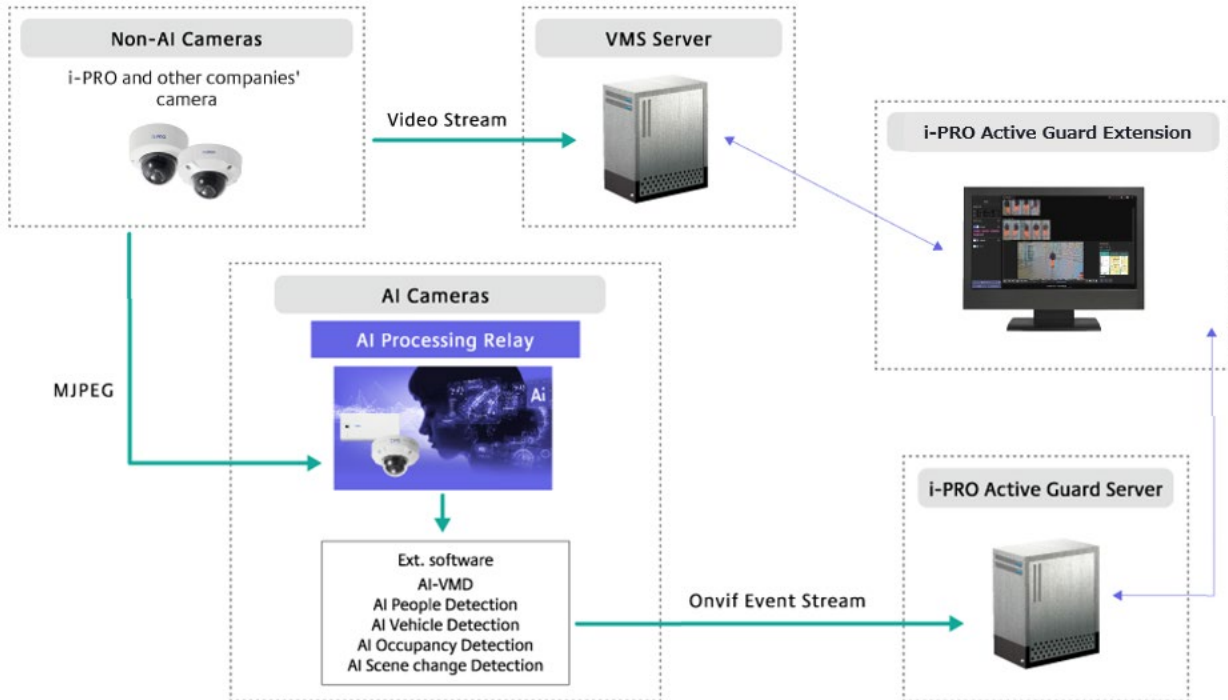
Note)

If multiple VMS are registered, it is necessary to register cameras by selecting each VMS from [Registered VMS] and [Add devices] - [Camera(s) from VMS].

### 4.3.2.3.2. AI Processing Relay

Register camera with AI Processing Relay application to i-PRO Active Guard.

[Overview of AI Processing Relay]



To use AI Processing Relay, you need to configure the AI camera, AI Processing Relay application, VMS Server, and i-PRO Active Guard. For detailed, please refer to each manual.

i-PRO Configuration Tool (iCT) version V4.20 or later is required for configuration.

Download iCT from the following link

[https://i-pro.com/products\\_and\\_solutions/en/surveillance/learning-and-support/knowledge-base/product-tips/active-guard-links](https://i-pro.com/products_and_solutions/en/surveillance/learning-and-support/knowledge-base/product-tips/active-guard-links)

## STEP1

(Setting target: AI camera and AI Processing relay application)

\*For detailed, please refer to manual.

[https://i-pro.com/products\\_and\\_solutions/en/surveillance/learning-and-support/knowledge-base/product-tips/active-guard-links](https://i-pro.com/products_and_solutions/en/surveillance/learning-and-support/knowledge-base/product-tips/active-guard-links)

- (1) Confirm the operating conditions of the AI Processing Relay application.
- (2) Install AI Processing Relay application and extension software.
- (3) Configure settings for non-AI cameras.
- (4) Configure AI Processing Relay application.
- (5) Configure extension software that works with AI Processing Relay application

## STEP2

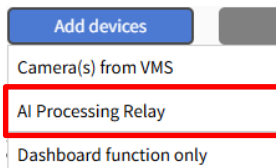
(Setting target: VI server)

Register the non-AI camera set in step1-(3) to the VI server.

## STEP3

(Setting target: i-PRO Active Guard)

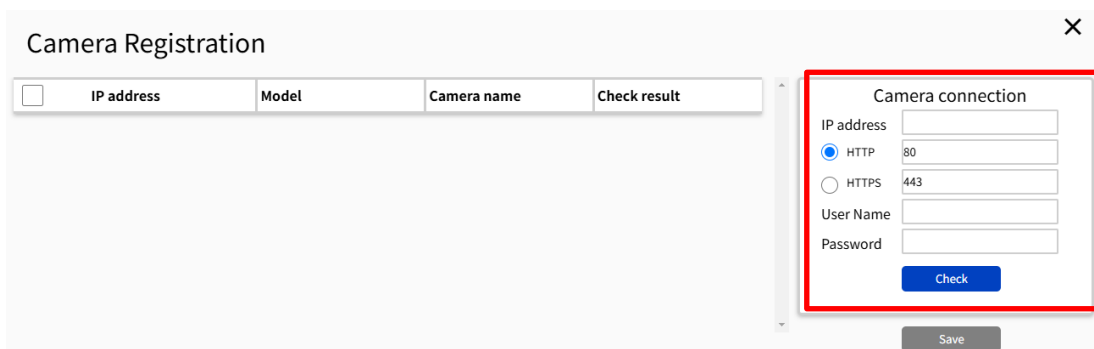
Click [Add devices] - [AI Processing Relay].



## STEP4

(Setting target: i-PRO Active Guard)

Input the IP address and credentials of the AI camera to which have added AI Processing Relay App, click [Check].



## STEP5

(Setting target: i-PRO Active Guard)

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

Click [Save].

<input type="checkbox"/>	IP address	Model	Camera Name	Check result
<input checked="" type="checkbox"/>	192.168.0.70	WV-S25500-F3L(WV-X25700-V2L)	192.168.0.34 - Model: Panasonic	
<input checked="" type="checkbox"/>	192.168.0.70	WV-S2136L(WV-X25700-V2L)	192.168.0.14 - Panasonic - Model	
<input checked="" type="checkbox"/>	192.168.0.70	Unicast RTP(WV-X25700-V2L)	192.168.0.20 - Panasonic - Model	

Camera connection

IP address: 192.168.0.70

HTTP: 80

HTTPS: 443

User Name: admin

Password: \*\*\*\*\*

Check

Save

Note)

- For information about icons, please refer to [4.3.2.3.4].

- Model in the camera list will be displayed as below.

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

ex) WV-S25500-F3L(WV-X25700-V2L)



Non-AI camera



AI camera with AI Processing Relay application

### Important:

- If AI Processing Relay registration fails, please try the following steps.
  - (1) Verify that the MAC address of the non-AI camera is displayed in the AI Processing Relay application settings using iCT.  
Non-AI camera whose MAC address is not displayed cannot be used in this system.
  - (2) If MAC address is displayed, use iCT to reconfigure the AI processing relay application.

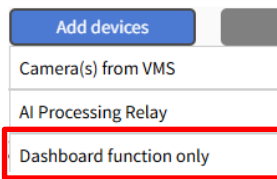
### 4.3.2.3.3. Dashboard function only

Register the camera to i-PRO Active Guard without registering camera to the VMS.

Cameras registered with this setting can only be used with the Dashboard function; they cannot be used with Extension.

#### STEP1

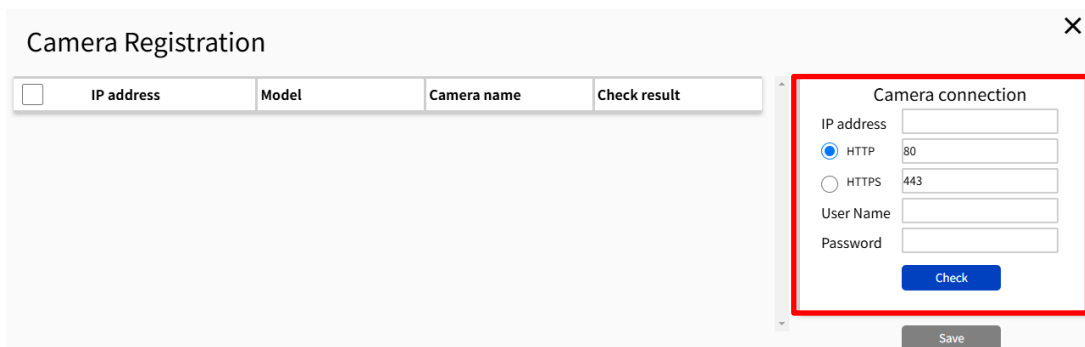
Click [Add devices] - [Dashboard function only]



The image shows a dropdown menu with a blue 'Add devices' button at the top. Below the button, there are three options: 'Camera(s) from VMS', 'AI Processing Relay', and 'Dashboard function only'. The 'Dashboard function only' option is highlighted with a red rectangular border.

#### STEP2

Enter IP address of the camera, credentials, click [Check].



The image shows a 'Camera Registration' dialog box. On the left, there is a table with columns for 'IP address', 'Model', 'Camera name', and 'Check result'. On the right, there is a 'Camera connection' form with the following fields: 'IP address', 'Protocol' (with radio buttons for 'HTTP' and 'HTTPS'), 'Port' (with values '80' and '443'), 'User Name', and 'Password'. A blue 'Check' button is located below the form. A 'Save' button is at the bottom right of the dialog. The 'Camera connection' form is highlighted with a red rectangular border.

### STEP3

Icon related to AI function is shown for supported AI cameras.  
Click [Save].

<input type="checkbox"/>	IP address	Model	Camera name	Check result
<input checked="" type="checkbox"/>	192.168.0.70	WV-X25700-V2L	WV-X25700-V2L	
<input checked="" type="checkbox"/>	192.168.0.70	WV-X25700-V2L	WV-X25700-V2L	
<input checked="" type="checkbox"/>	192.168.0.70	WV-X25700-V2L	WV-X25700-V2L	

Camera connection

IP address: 192.168.0.70

HTTP: 80

HTTPS: 443

User Name: admin

Password: .....

Note)

- For information about icons, please refer to [4.3.2.3.4].
- If you registered the camera from [Dashboard function only], select [Others] in [Registered VMS] and check the registration status.

Registered VMS

IPServer - 192.168.0.206













Others

Enabled camera

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

Disabled camera

#### 4.3.2.3.4. AI function icon

-  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
-  Code detection
-  Container detection

\* The available functions differ depending on the installed application.

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

### 4.3.2.3.5. Free text search (Optional)

Configure the cameras to be used for free text search. By enabling free text search, you can search for people and vehicles using freely written descriptions.

#### STEP1

Select cameras you want to free text search and click [Save].

	<input type="checkbox"/>	IP address	Model	Camera name	Function	Free text search	HTTP(S) port	SSL
1	<input type="checkbox"/>	192.168.0.51	WV-U25351-V3L	192.168.0.51 - i-PRO - U25351-V3L		<input type="checkbox"/>	80	Off
2	<input type="checkbox"/>	192.168.0.92	WV-S85402-V2L	192.168.0.92 - i-PRO - S85402-V2L - S...		<input type="checkbox"/>	80	Off
3	<input checked="" type="checkbox"/>	192.168.0.92	WV-S85402-V2L	192.168.0.92 - i-PRO - S85402-V2L - S...		<input checked="" type="checkbox"/>	80	Off
4	<input checked="" type="checkbox"/>	192.168.0.103	WV-S2136L	192.168.0.103 - i-PRO - S2136L		<input checked="" type="checkbox"/>	80	Off
5	<input type="checkbox"/>	192.168.0.106	WV-S4176	192.168.0.106 - i-PRO - S4176		<input type="checkbox"/>	80	Off

#### Important:

- Free text search applies only to cameras added via “Camera(s) from VMS” that have either people detection or vehicle detection.
- When multiple cameras are configured with Free Text Search and a high number of detections occurs, system resource usage—such as CPU and memory—may increase significantly. Based on the calculation results in Section 3.3 and by monitoring actual CPU usage and other system resources, please adjust the number of cameras used for Free text search.

#### STEP2

Restart process (Refer to 4.3.3)

#### STEP3(Optional)

When using GPU, do the following procedure.

Note) Supports on NVIDIA GPUs from the Pascal generation and later.

1. Open "C:\MultiAI\bin\64\AI\CameraMainProcess.exe.config" by notepad and change the value of “UseNvidiaGPU” from 0 to 1.

```
<add key="UseNvidiaGPU" value="1" />
```

#### Important:

- i-PRO Active Guard Server updates may alter the above settings. Please verify the settings after performing an update. If any changes are made, restart the PC or the MultiAICameraService.

2. Download and install CUDA Toolkit in the following site.

[\[CUDA Toolkit 12.9 Update 1 Downloads | NVIDIA Developer\]](#)



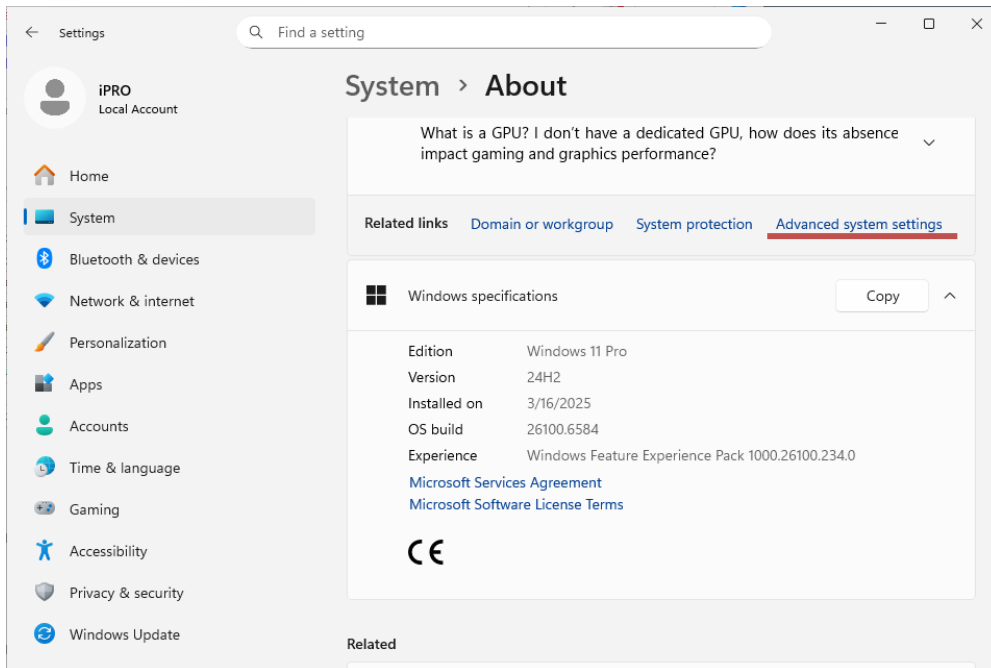
3. Download and install cuDNN in the following site.

[\[cuDNN 9.10.2 Downloads | NVIDIA Developer\]](#)

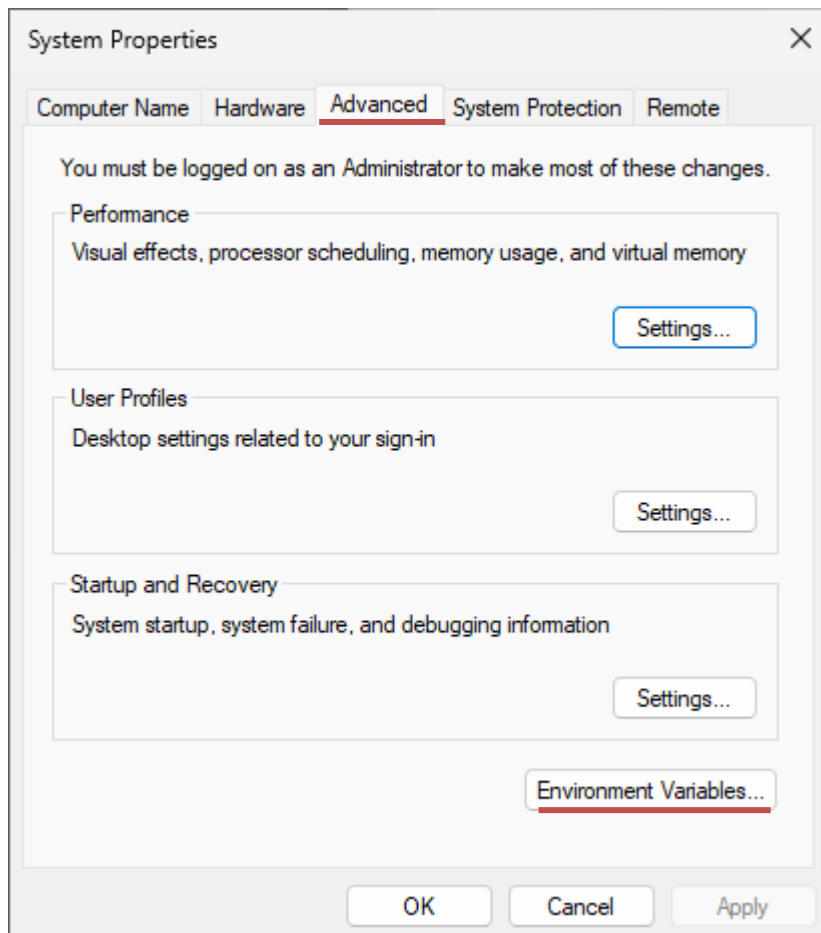


4. Set path “C:¥Program Files¥NVIDIA¥CUDA¥v9.10¥bin¥12.9” for cuDNN in “Advanced system settings”.

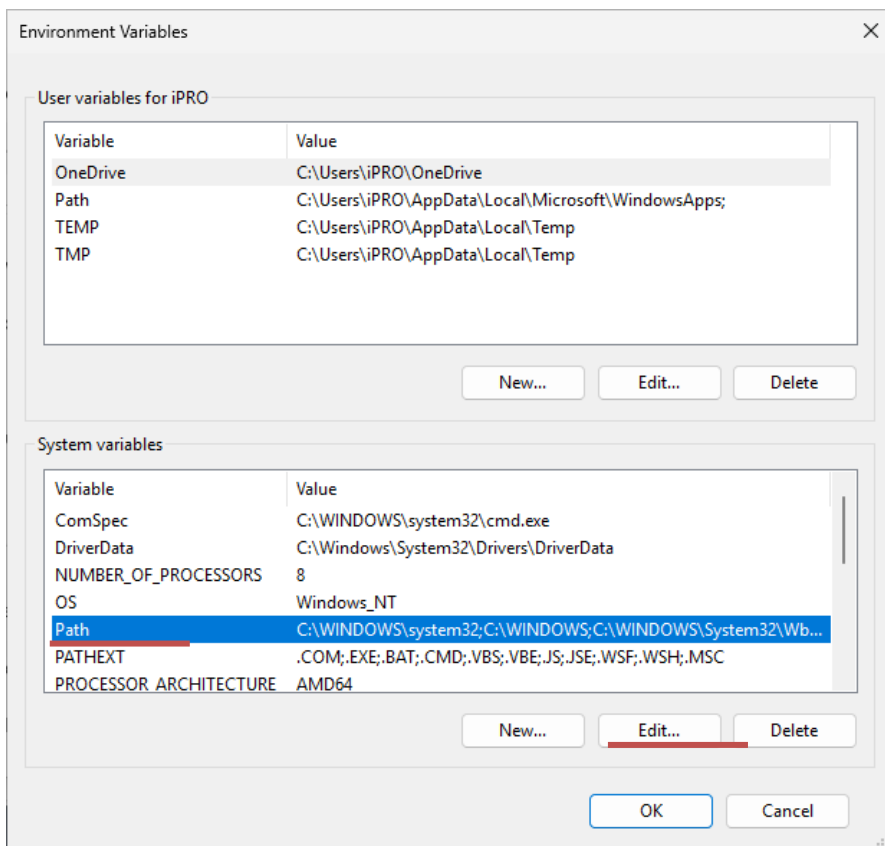
Open “Settings” in Windows start menu. And click “Advanced system settings”



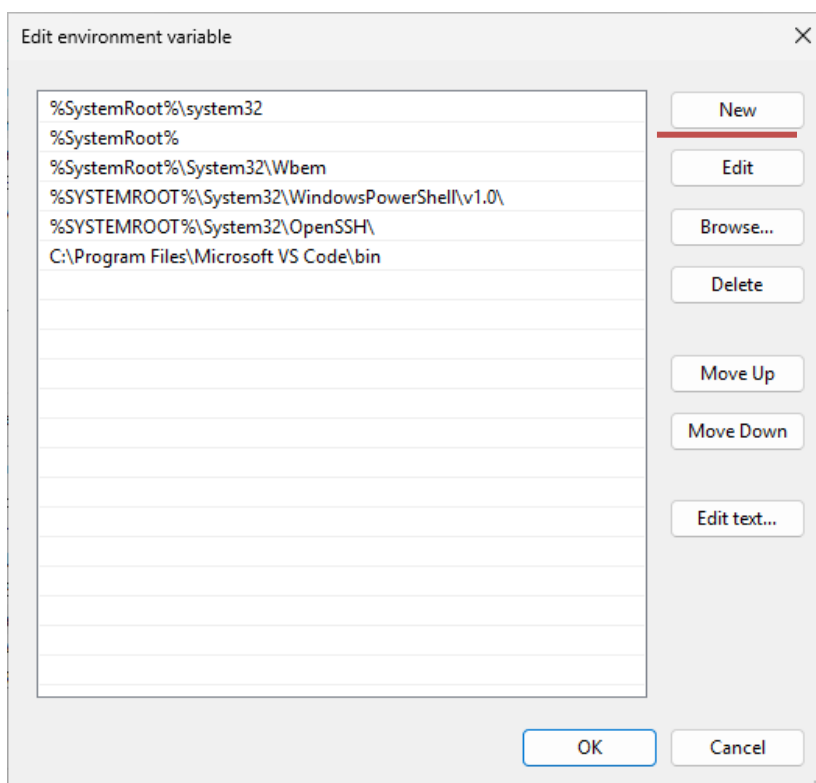
5. Select “Advanced” tab and click “Environment Variables”



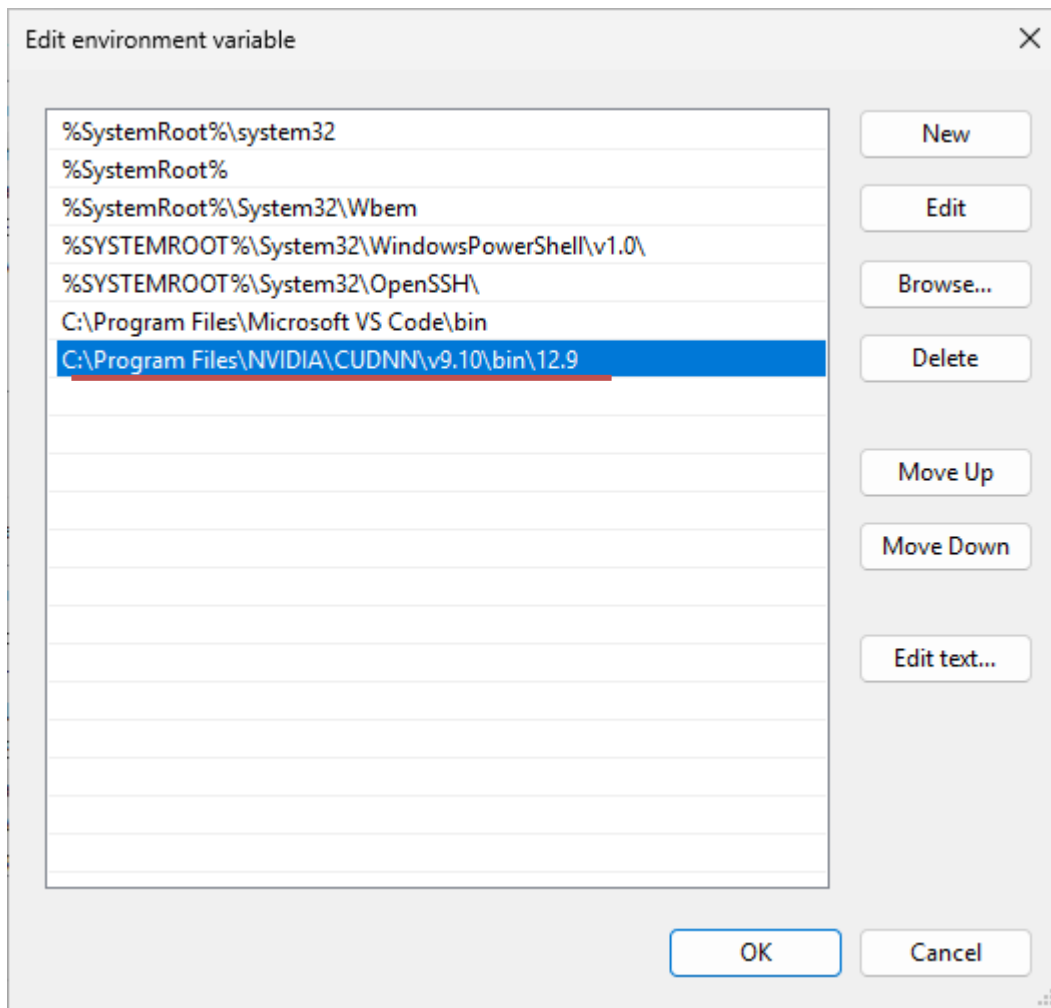
6. Select "Path" in System variables and click "Edit" button



7. Click "New" button.



8. Input “C:\Program Files\NVIDIA\CUDNN\v9.10\bin\12.9” and click “OK” button.



9. Please restart PC.

### 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.

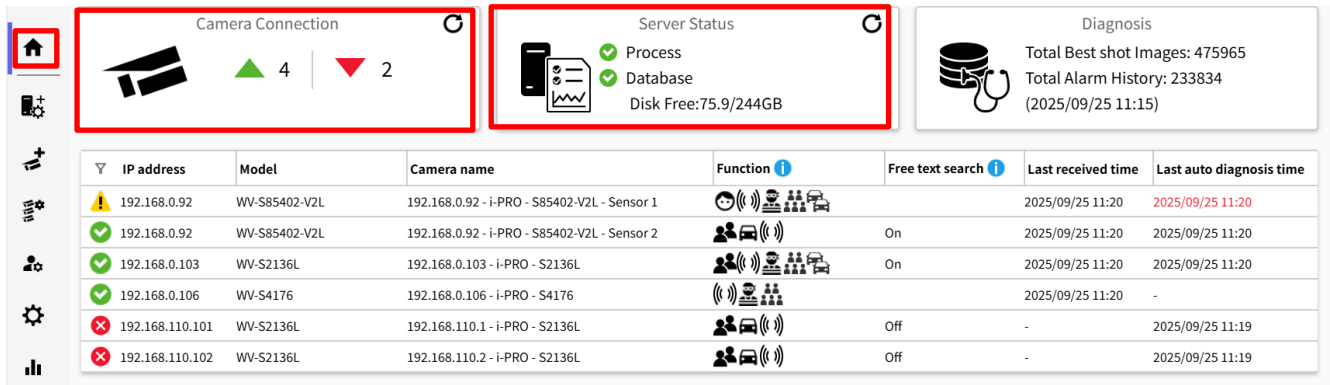
Restart

## 4.3.4. Check




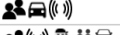





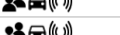


Click  (Home)


- Check camera connection

Check all registered cameras are connected.




The screenshot displays the i-PRO Active Guard interface. At the top, there are three main panels: 'Camera Connection', 'Server Status', and 'Diagnosis'. The 'Camera Connection' panel shows 4 connected cameras (green triangle) and 2 disconnected cameras (red triangle). The 'Server Status' panel shows 'Process' and 'Database' both with green checkmarks, and 'Disk Free: 75.9/244GB'. The 'Diagnosis' panel shows 'Total Best shot Images: 475965' and 'Total Alarm History: 233834 (2025/09/25 11:15)'. Below these panels is a table with columns: IP address, Model, Camera name, Function, Free text search, Last received time, and Last auto diagnosis time.

IP address	Model	Camera name	Function	Free text search	Last received time	Last auto diagnosis time
 192.168.0.92	WV-S85402-V2L	192.168.0.92 - i-PRO - S85402-V2L - Sensor 1			2025/09/25 11:20	2025/09/25 11:20
 192.168.0.92	WV-S85402-V2L	192.168.0.92 - i-PRO - S85402-V2L - Sensor 2		On	2025/09/25 11:20	2025/09/25 11:20
 192.168.0.103	WV-S2136L	192.168.0.103 - i-PRO - S2136L		On	2025/09/25 11:20	2025/09/25 11:20
 192.168.0.106	WV-S4176	192.168.0.106 - i-PRO - S4176			2025/09/25 11:20	-
 192.168.110.101	WV-S2136L	192.168.110.1 - i-PRO - S2136L		Off	-	2025/09/25 11:19
 192.168.110.102	WV-S2136L	192.168.110.2 - i-PRO - S2136L		Off	-	2025/09/25 11:19


 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. 

Note)

When using existing SQL Server instance on network, Database shows status  .

## 4.3.5. System configuration (optional)

Click  (Configure system) and change settings if needed.

### 4.3.5.1. General

---

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

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

Color theme : Select [Light] or [Dark] for. (Default: Light).

Send anonymous data to improve software and user experience: Check or uncheck.

(Default: Set by install tool at 4.3.1)

#### General

Language	<input type="text" value="Auto"/>
Color theme	<input type="text" value="Light"/>
<input checked="" type="checkbox"/>	Send anonymous data to improve software and user experience. *Transmitted data does not include your personal information.

### 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  (1-65535)


Note)

When you change and restart software at 4.3.3, 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 images, people images, vehicle images, license plate images, code images, container images and alarm history]</p> <p>Using SQL Server Express Edition :1 – 31 days (Default: 31).</p> <p>Using SQL Server Standard Edition or higher:1 – 397 days (Default: 397).</p> <p>[For Count/heatmap/Statistics]</p> <p>Using SQL Server Express Edition :1 – 92 days (Default: 92).</p> <p>Using SQL Server Standard Edition or higher:1 – 732 days (Default: 732).</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>Note)</p> <p>When enable, [Max usage of image storage drive] will be also enabled automatically.</p> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p><b>Important:</b></p> <ul style="list-style-type: none"> <li>• Statistics data in CSV backup files cannot be used on dashboard by itself. This data can be used only in comparison view and 1 day duration. * When [Comparison] is checked, and the [Display Duration] is selected for 1 day in Search Mode.</li> <li>• CSV is not available in the dashboard when using existing SQL Server instance on network server.</li> </ul> </div>

Configuration item	Comment
Max usage of image storage drive (*)	<p>Enable/Disable and data size 10- 2000 (GB) can be configured. (Default: Disable)</p> <p>Note)</p> <p>When enabled, the used disk space of drive for storing best shot images exceed the setting value, the 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:</p> <ul style="list-style-type: none"> <li>- All existing image data cannot be used from Extension.</li> <li>- If the system load is high, please check whether Real-time protection is turned off, or whether this folder is excluded from Real-time protection.</li> </ul> <p>For Windows Defender, please refer to 4.3.9.1.</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>
Estimated data points of detections (per sec)	<p>50 -300 (Default: 100)</p> <p>*For people, 1 object is counted as 2 data points. For other objects, 1 object is counted as 1 data point.</p> <p>Note)</p> <p>If the number of object data from all cameras exceeds the value, those object data will be discarded to reduce disk access so that system is stable.</p> <p>SSD is required in case of 100 or more. When you set over 100 using HDD, system will be unstable.</p>
Data Encryption	<p>On/Off is shown set by install tool at 4.3.1. You cannot change this after installation.</p>

\* Simple calculator can be used by clicking 

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

✕

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](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 Faces watchlist, People watchlist, Vehicles watchlist, LPR watchlist (also registered license plate and group), OCR watchlist (also registered OCR Code and group) and Container watchlist (also registered container code and group). See the 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 images depending on the number of images. When deleting, the button will be as follows. Please update the page to confirm the latest status.

Image  Alarm history  Statistics data

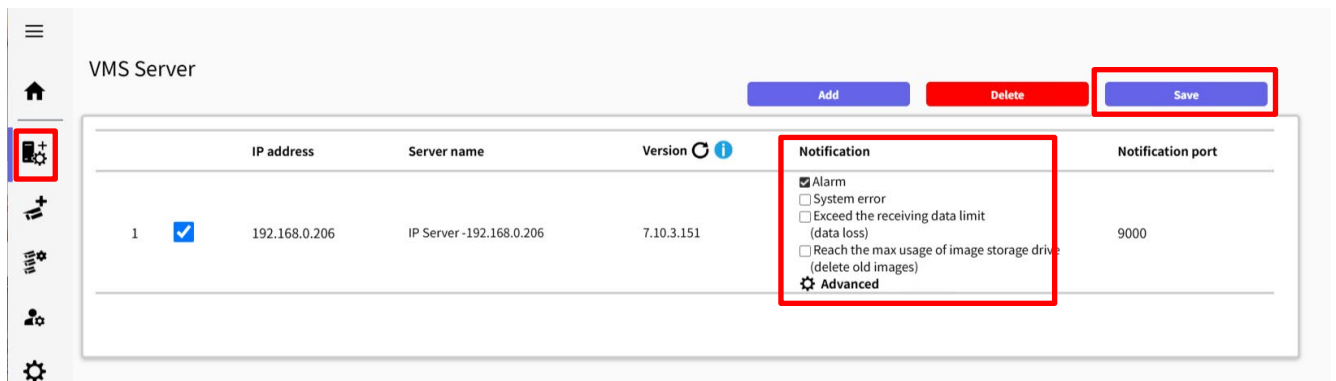
Watchlist  Configuration  
 (Except for port and user account)

**Delete**  
 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 (4.7.1.10 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	7.10.3.151	<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 usage of image storage drive (delete old images) <input checked="" type="checkbox"/> Advanced	9000

Check following items that you want and [Save].

### System error

Notifies system error that i-PRO Active Guard server detects.

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

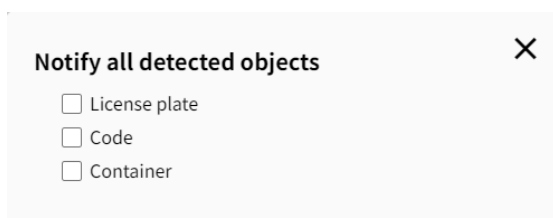
### Exceed the receiving data limit (data loss)

Notification 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)

Notification 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.

### Advanced



Notify all detected objects ✕

- License plate
- Code
- Container

### Notify all detected objects

#### License plates

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

**Code**

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


**Container**

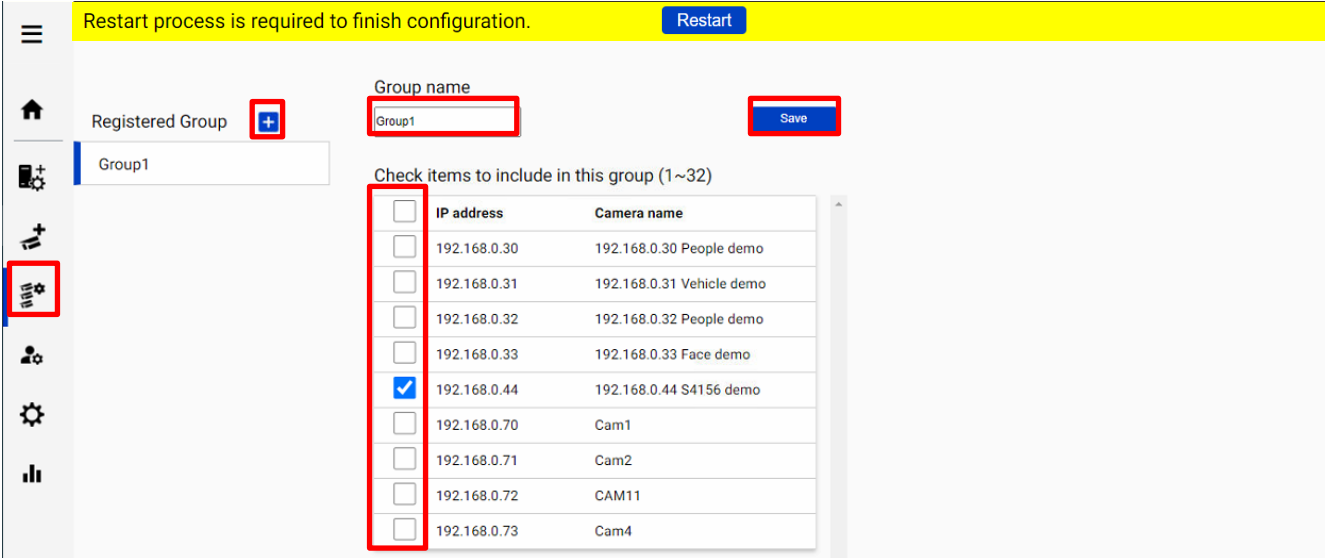
Notifies all detected container received by the i-PRO Active Guard server.

## 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)

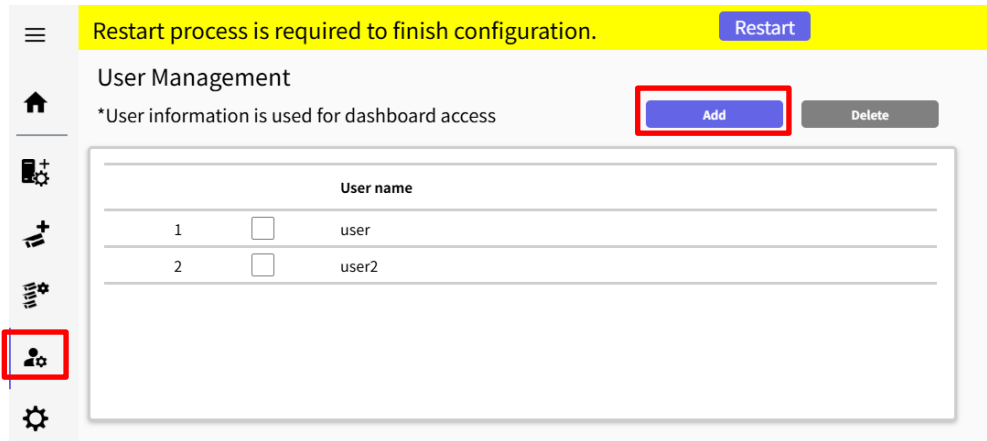
Up to 16 groups can be configured.

To delete the 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 Extension 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

Camera Connection ↻

▲ 4 | ▼ 2

Server Status ↻

✔ Process  
✔ Database  
 Disk Free: 75.9/244GB

Diagnosis

Total Best shot Images: 475965  
 Total Alarm History: 233834  
 (2025/09/25 11:15)

	IP address	Model	Camera name	Function <span style="font-size: 0.8em;">i</span>	Free text search <span style="font-size: 0.8em;">i</span>	Last received time	Last auto diagnosis time
	192.168.0.92	WV-S85402-V2L	192.168.0.92 - i-PRO - S85402-V2L - Sensor 1			2025/09/25 11:20	2025/09/25 11:20
<span style="color: green;">✔</span>	192.168.0.92	WV-S85402-V2L	192.168.0.92 - i-PRO - S85402-V2L - Sensor 2		On	2025/09/25 11:20	2025/09/25 11:20
<span style="color: green;">✔</span>	192.168.0.103	WV-S2136L	192.168.0.103 - i-PRO - S2136L		On	2025/09/25 11:20	2025/09/25 11:20
<span style="color: green;">✔</span>	192.168.0.106	WV-S4176	192.168.0.106 - i-PRO - S4176			2025/09/25 11:20	-
<span style="color: red;">✘</span>	192.168.110.101	WV-S2136L	192.168.110.1 - i-PRO - S2136L		Off	-	2025/09/25 11:19
<span style="color: red;">✘</span>	192.168.110.102	WV-S2136L	192.168.110.2 - i-PRO - S2136L		Off	-	2025/09/25 11:19

✔ : 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, code, container or alarm. If this time is older than when camera captured actually objects, AI application on camera side may not work well.

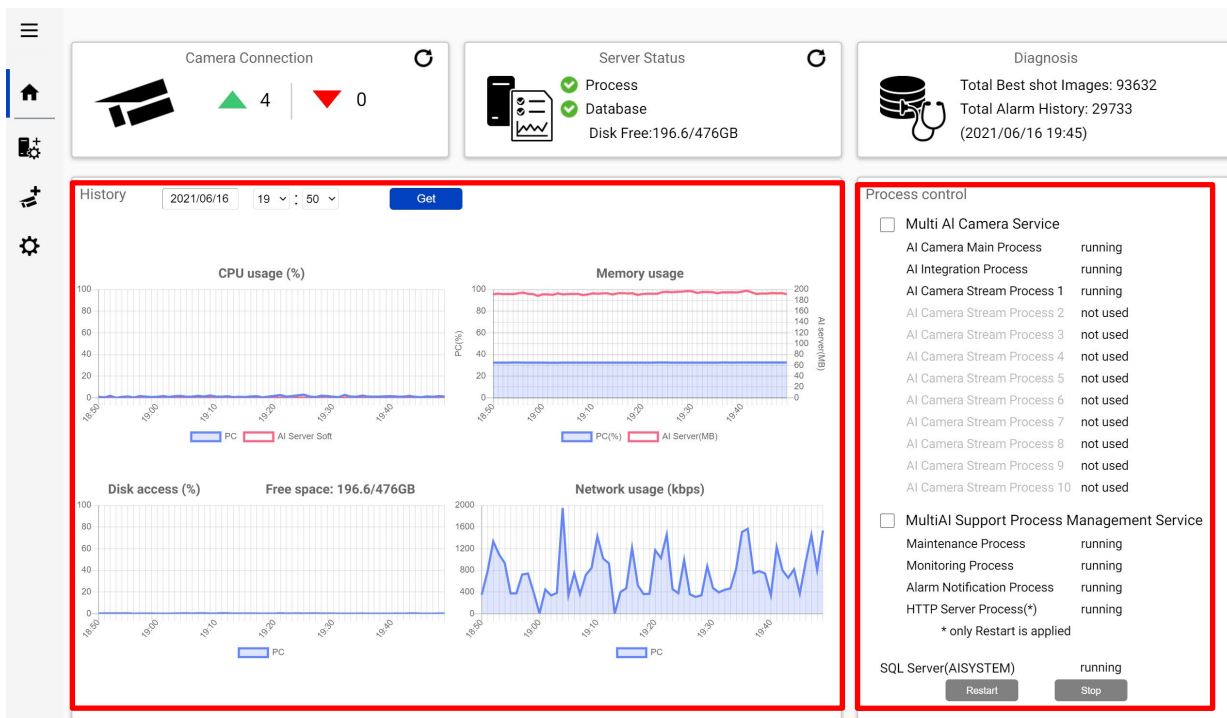
“**Last auto diagnosis time**” is the latest time when i-PRO Active Guard server tested connection to camera and database. The test executes every 5 minutes for a camera in order. When error occurs, the time is shown in red color. In that case, check Log and confirm the status of camera or database.

Note)

- When schedule setting for the AI application is off, last auto diagnosis will be failed. If it is intended, please ignore this indicator.
- icon allows filtering by camera connection.

	Model	Camera name	Function <span style="font-size: 0.8em;">i</span>	Last received time	Last auto diagnosis time
	WV-S85402-V2L	192.168.0.92 -1 - i-PRO - Model: S85402-V2L		2025/01/24 19:21	2025/01/24 18:53

## 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].

Note)

When using existing SQL Server instance on network serve, SQL Server is not monitored.

### 4.3.8.3. Diagnosis

Camera Connection: 4 cameras connected, 0 disconnected.

Server Status: Process, Database (both active), Disk Free: 196.6/476GB.

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

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, 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
- Code images
- Container images
- All alarm
- Registered face detection
- Registered people detection
- Registered vehicle detection
- Registered license plate detection (\*1)
- Unregistered license plate detection (\*1)
- Sound detection
- AI-VMD
- AI Occupancy detection
- AI Scene Change detection
- Registered code detection (\*2)
- Unregistered code detection (\*2)
- Registered container detection (\*3)
- Unregistered container detection (\*3)

(\*1) About license plate detection.

- Registered license plate detection

You will be notified when you set LPR watchlist to below settings on Extension.

- Set "Detect by vehicle appearance only" to off and set "Trigger" to "When license plates in the selected group was detected".
- Set "Detect by vehicle appearance only" to on.

- Unregistered license plate detection

You will be notified when you set LPR watchlist to below settings on Extension.

- 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."

(\*2) About code detection.

- Registered code detection

You will be notified when you set OCR watchlist to below settings on Extension.

- Set "Trigger" to "When OCR Code in the selected group was detected."

- Unregistered code detection

You will be notified when you set OCR watchlist to below settings on Extension.

- Set "Trigger" to "When other OCR Code which is not in the selected group was detected."

(\*3) About container detection.

- Registered container detection

You will be notified when you set Container watchlist to below settings on Extension.

- Set "Detect by container details" to off, and set "Trigger" to "When Container code in the selected group was detected."
- Set "Detect by container details" to on.

- Unregistered container detection

You will be notified when you set Container watchlist to below settings on Extension.

- Set "Detect by container details" to off,  
and set "Trigger" to "When other Container code 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 displays three main sections: Camera Connection (5 green, 0 red), Server Status (Process and Database OK, Disk Free: 109.2/244GB), and Diagnosis (Total Best shot Images: 1870, Total Alarm History: 240355). Below these is a table of camera connections.

IP address	Model	Camera name	Function	Free text search	Last received time	Last auto diagnosis time
192.168.0.51	WV-U25351-V3L	192.168.0.51 - i-PRO - U25351-V3L			2025/09/26 11:21	-
192.168.0.92	WV-S85402-V2L	192.168.0.92 - i-PRO - S85402-V2L - Sensor 1			2025/09/26 11:30	2025/09/26 11:30
192.168.0.92	WV-S85402-V2L	192.168.0.92 - i-PRO - S85402-V2L - Sensor 2		Off	2025/09/26 11:30	2025/09/26 11:15
192.168.0.103	WV-S2136L	192.168.0.103 - i-PRO - S2136L		Off	2025/09/26 11:30	2025/09/26 11:20
192.168.0.106	WV-S4176	192.168.0.106 - i-PRO - S4176			2025/09/26 11:30	-

Click  to show logs.

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

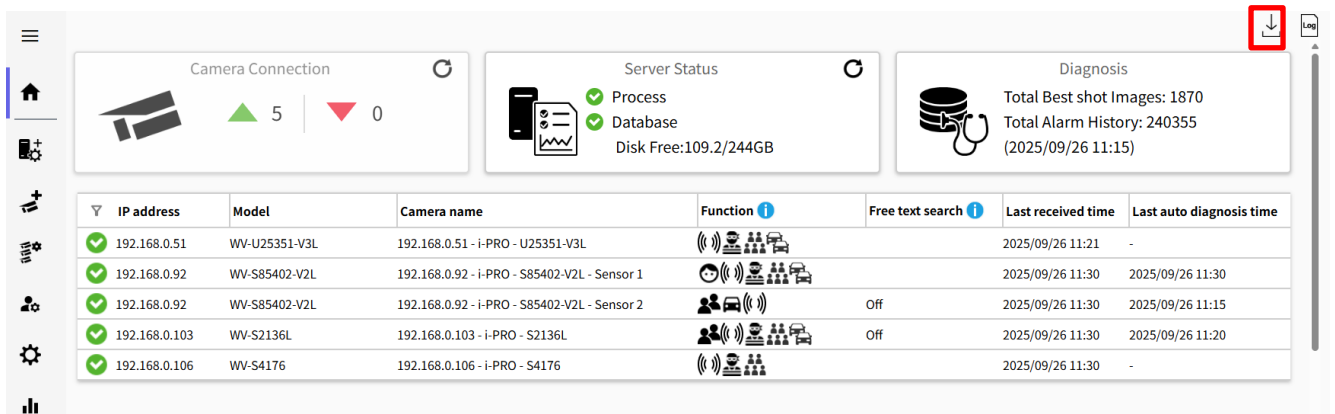
Detail for each message and troubleshoot for Code is shown on 6 Troubleshooting.

The Log interface shows filters for Date (2021/05/09 to 2021/05/10), Level (error, warning, information), and a 'Get' button. The table below shows the resulting log entries.

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.

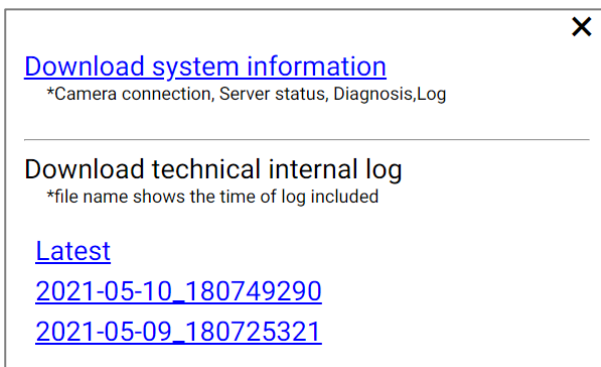
## 4.3.8.5. Download log



The screenshot shows a dashboard with three main sections: Camera Connection, Server Status, and Diagnosis. The Camera Connection section shows 5 cameras online and 0 offline. The Server Status section shows Process and Database are running, and Disk Free is 109.2/244GB. The Diagnosis section shows Total Best shot Images: 1870 and Total Alarm History: 240355 (2025/09/26 11:15). Below these sections is a table of camera details.

IP address	Model	Camera name	Function	Free text search	Last received time	Last auto diagnosis time
192.168.0.51	WV-U25351-V3L	192.168.0.51 - i-PRO - U25351-V3L			2025/09/26 11:21	-
192.168.0.92	WV-S85402-V2L	192.168.0.92 - i-PRO - S85402-V2L - Sensor 1			2025/09/26 11:30	2025/09/26 11:30
192.168.0.92	WV-S85402-V2L	192.168.0.92 - i-PRO - S85402-V2L - Sensor 2		Off	2025/09/26 11:30	2025/09/26 11:15
192.168.0.103	WV-S2136L	192.168.0.103 - i-PRO - S2136L		Off	2025/09/26 11:30	2025/09/26 11:20
192.168.0.106	WV-S4176	192.168.0.106 - i-PRO - S4176			2025/09/26 11:30	-

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.”

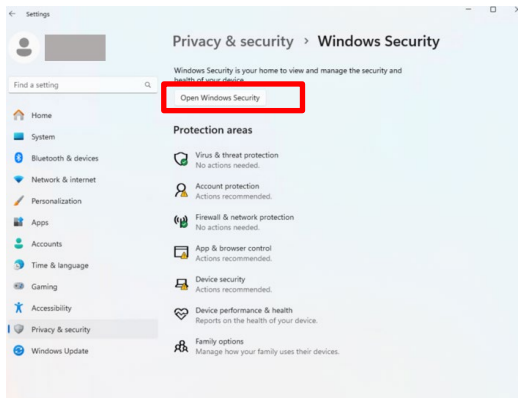
Windows server OS does not have Tamper protection feature.

If you are unable to turn off “Real-time protection“, please configure an exclusion to reduce system load:

Excluded folder: “Image data save path” Folder

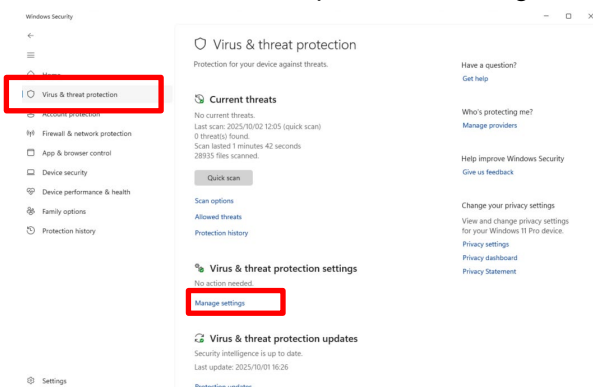
In case of Windows 11

(Start – Settings – Privacy & Security – Windows Security – Open Windows Security.

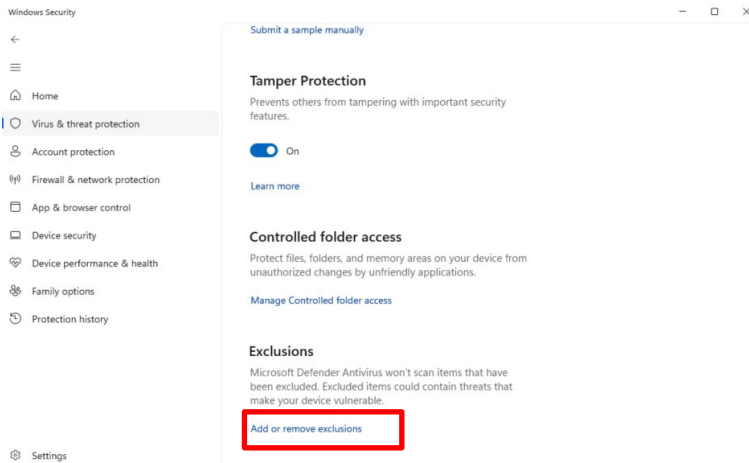


In the Windows Security window, click Virus & threat protection.

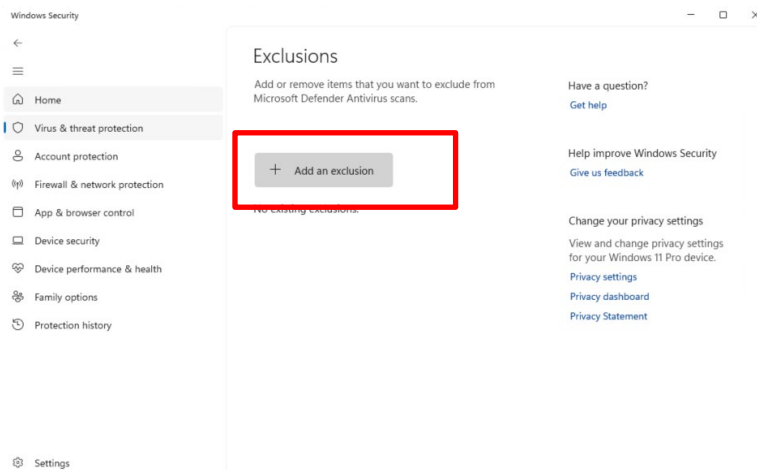
Under the Virus & threat protection settings section, click Manage settings.



Scroll down to the Exclusions section and click Add or remove exclusions.



Click Add an exclusion, then select “Image data save path” Folder.  
(Default: C:\MultiAI\Image)



### 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.

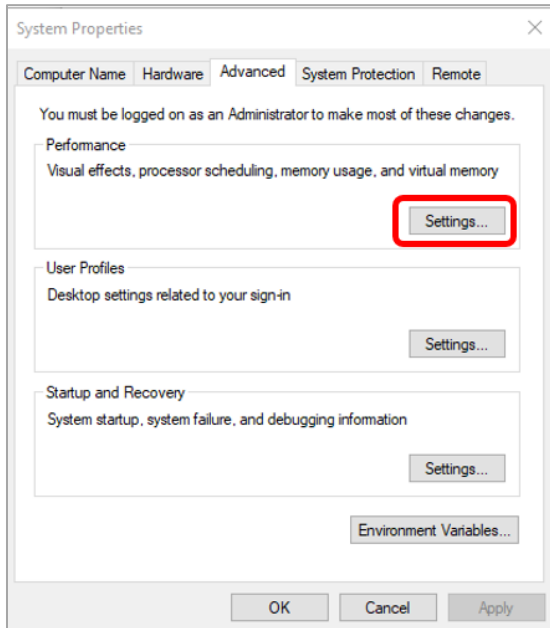
In case of Windows 10,

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.

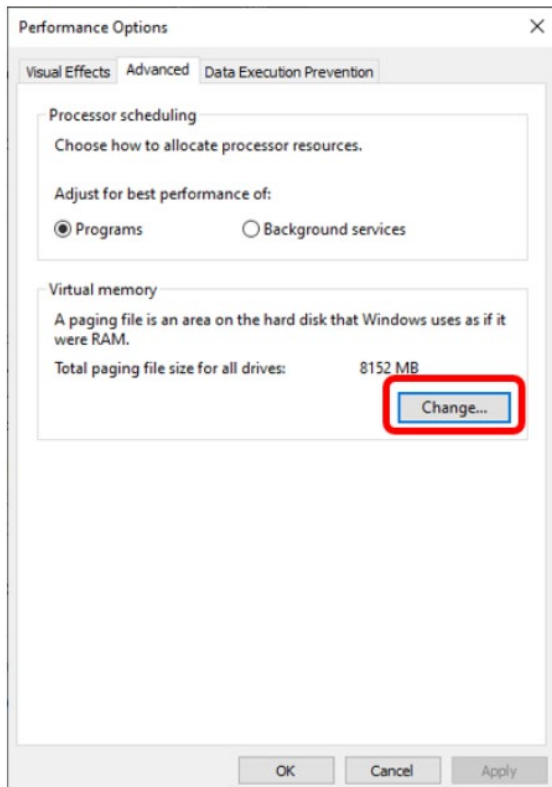
Follow the procedures below to check the virtual memory setting.



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 Extension for VI Monitor

Section 4.2.3 should be completed in advance to install Extension to VI Monitor.

### 4.4.1. Install Extension to VI Monitor

#### STEP1

Click the [Modules] tab, then select [Extensions] – [i-PRO Active Guard Extension setup] .  
The [Extension Manager] window will be displayed.

#### STEP2

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

#### STEP3

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

#### STEP4

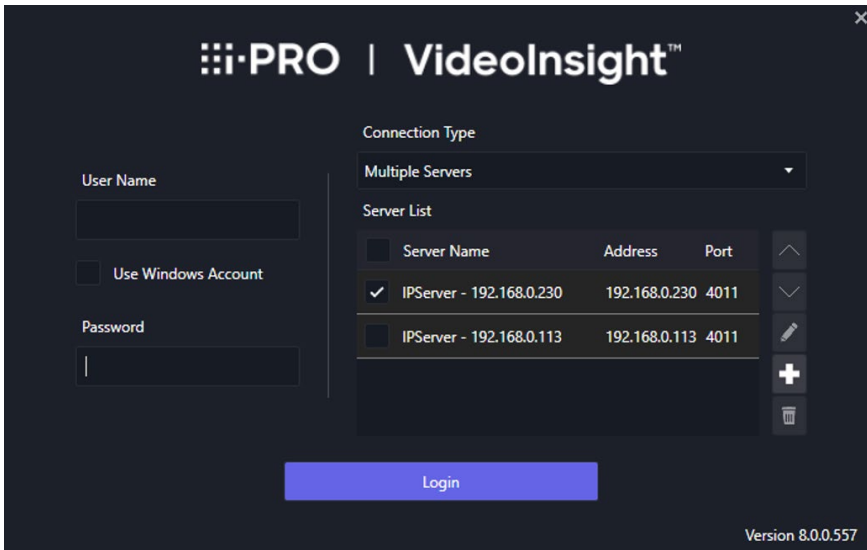
When the installation complete window is displayed, click the [Finish] button.  
Click the [Yes] button to restart VI Monitor.

#### STEP5

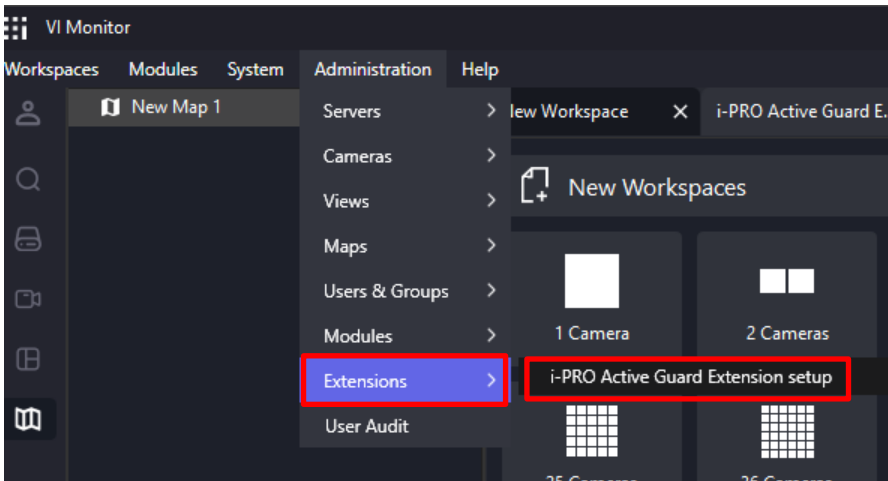
Log in again and confirm that [i-PRO Active Guard Search] and [i-PRO Active Guard Event] are normally displayed in the [Application Extension] area.

## 4.4.2. Connection to i-PRO Active Guard server

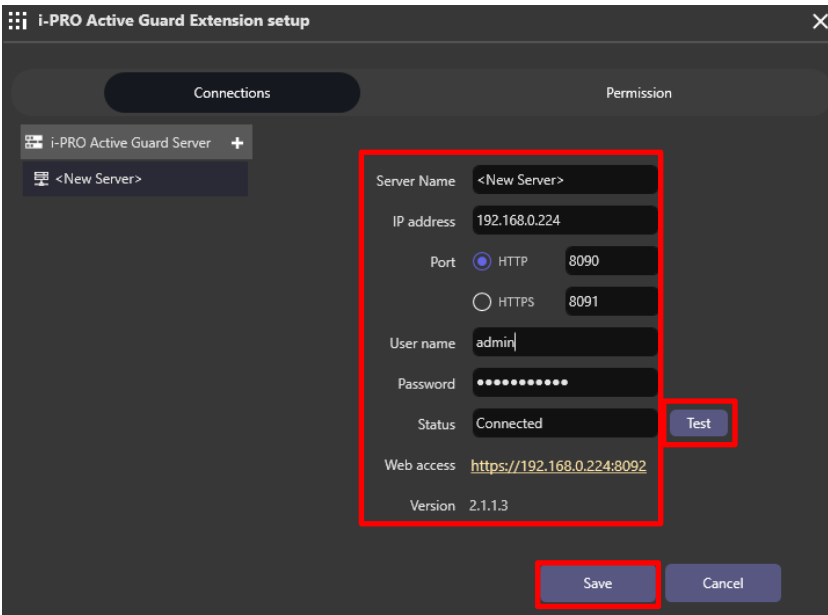
Login to VI Monitor as a user who has administrator credential.



Then select [Administration] – [Extensions] – [i-PRO Active Guard Extension setup]



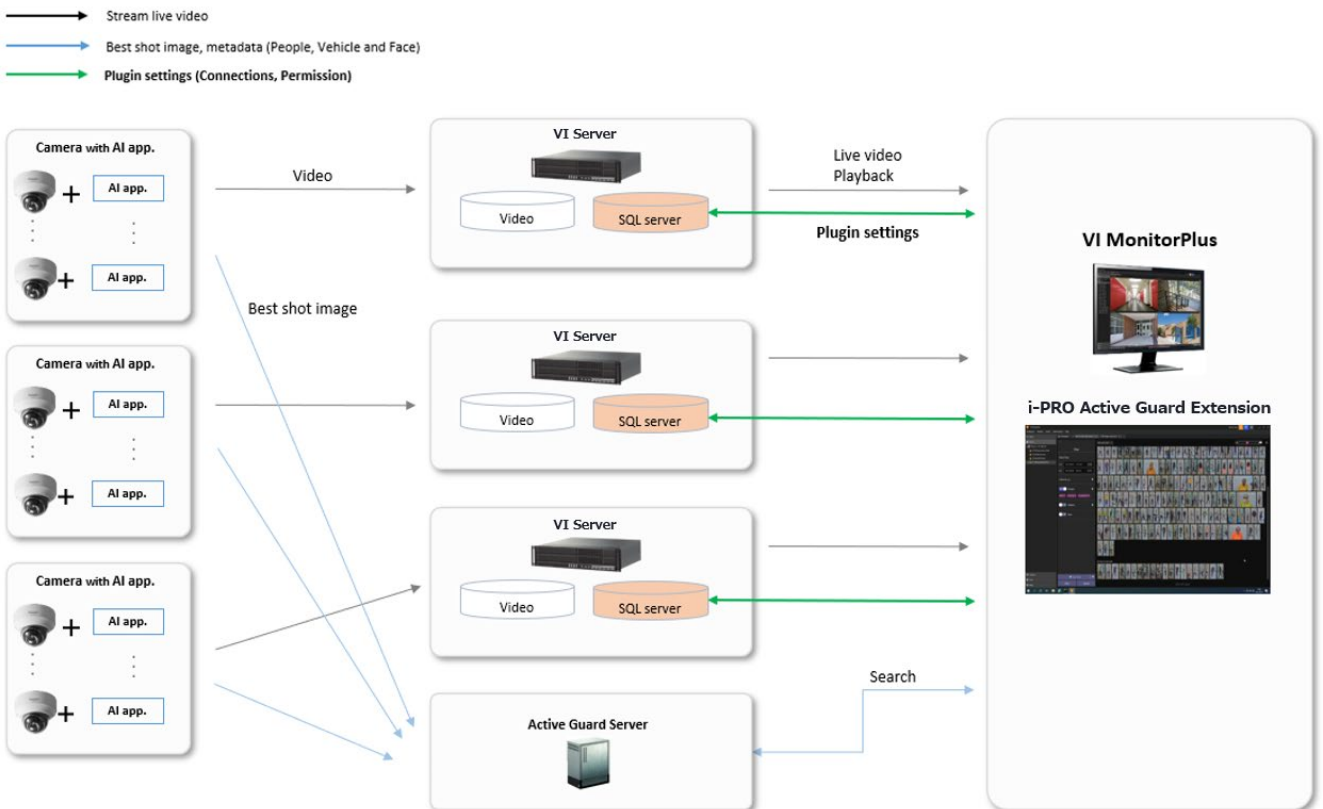
Input i-PRO Active Guard server information and Click [Test] and then click [Save].



Note)

If Test failed, please check if credential is correct.

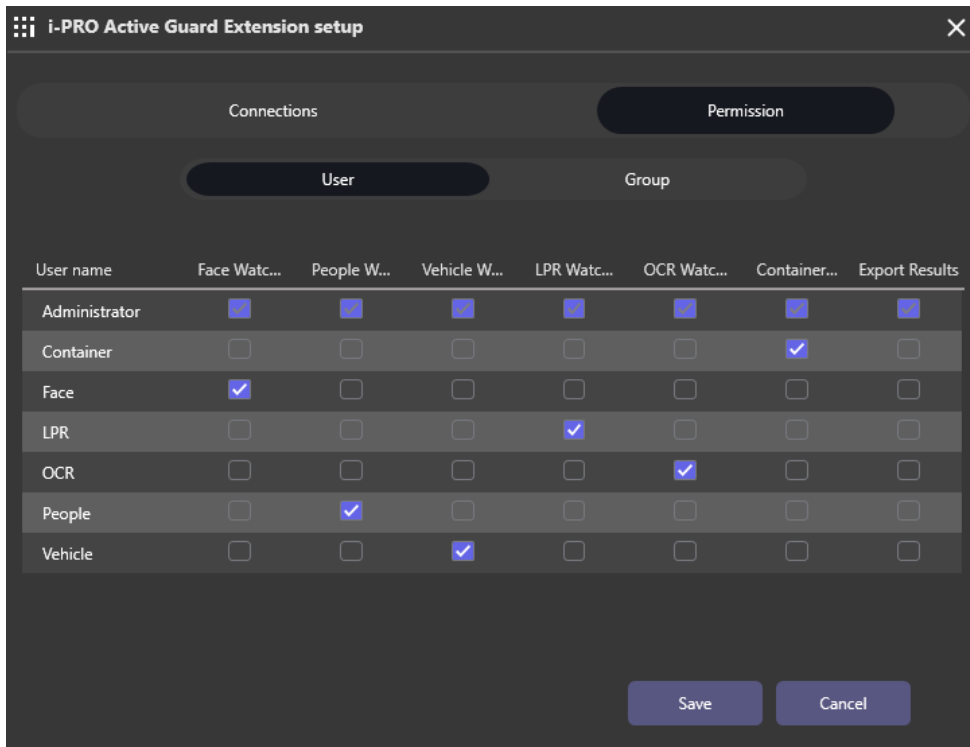
Connections and User Management settings in Extension setup is saved to all SQL databases of VI Servers which are connected to VI Monitor.



## 4.4.3. User Management (Optional)

### 4.4.3.1. Privileges for Extension specific function

Configure [Permission] for access to watchlist such as [Face Watch list] and [People Watchlist] and [Vehicle Watchlist],etc. and [Export Results] for each user or group registered in VI server.



The screenshot shows the 'i-PRO Active Guard Extension setup' window with the 'Permission' tab selected. The 'User' sub-tab is active. A table lists various user roles and their permissions for different watchlist functions and export results.

User name	Face Watc...	People W...	Vehicle W...	LPR Watc...	OCR Watc...	Container...	Export Results
Administrator	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Container	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Face	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LPR	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
OCR	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
People	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vehicle	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

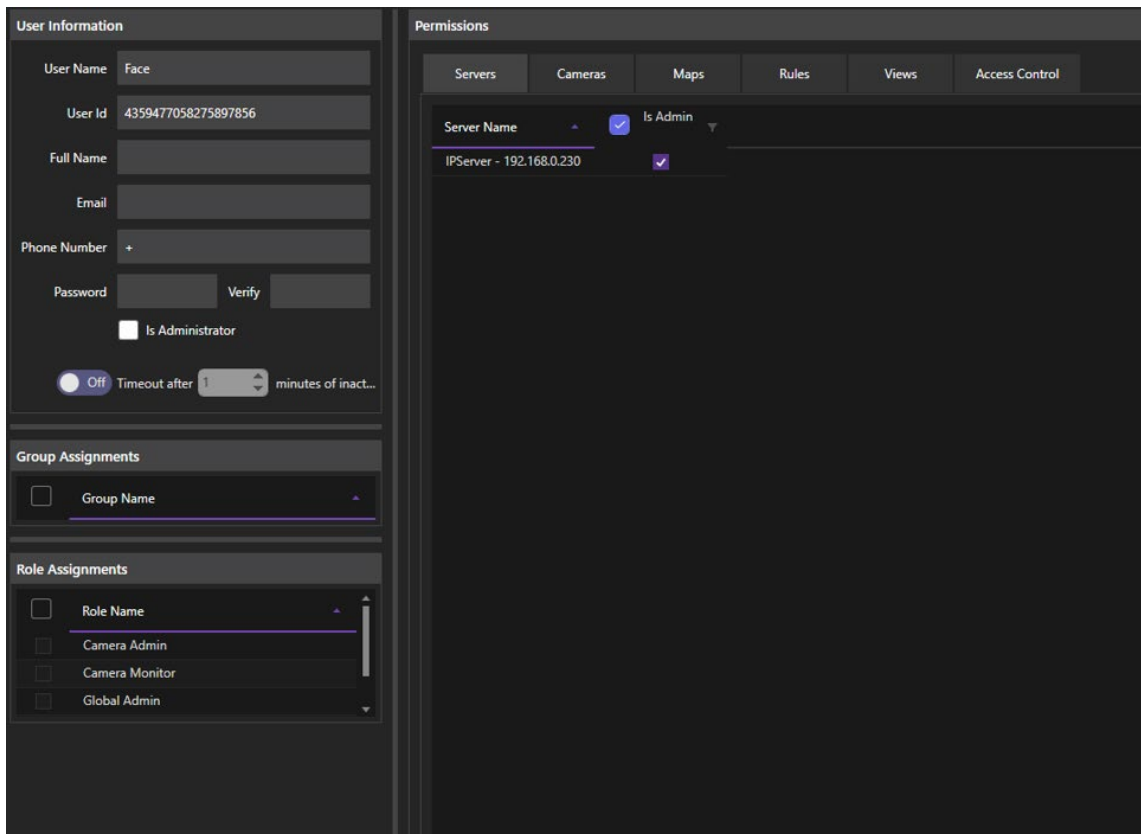
Buttons: Save, Cancel

### 4.4.3.2. Required privileges to use Extension for non-administrator

If non-administrator uses this software, VI server may be required.

([Administration] – [Users & Groups] – [Setup and Configuration])

- [Servers] tab
- [Cameras] tab
- [Maps] tab
- [Rules] tab

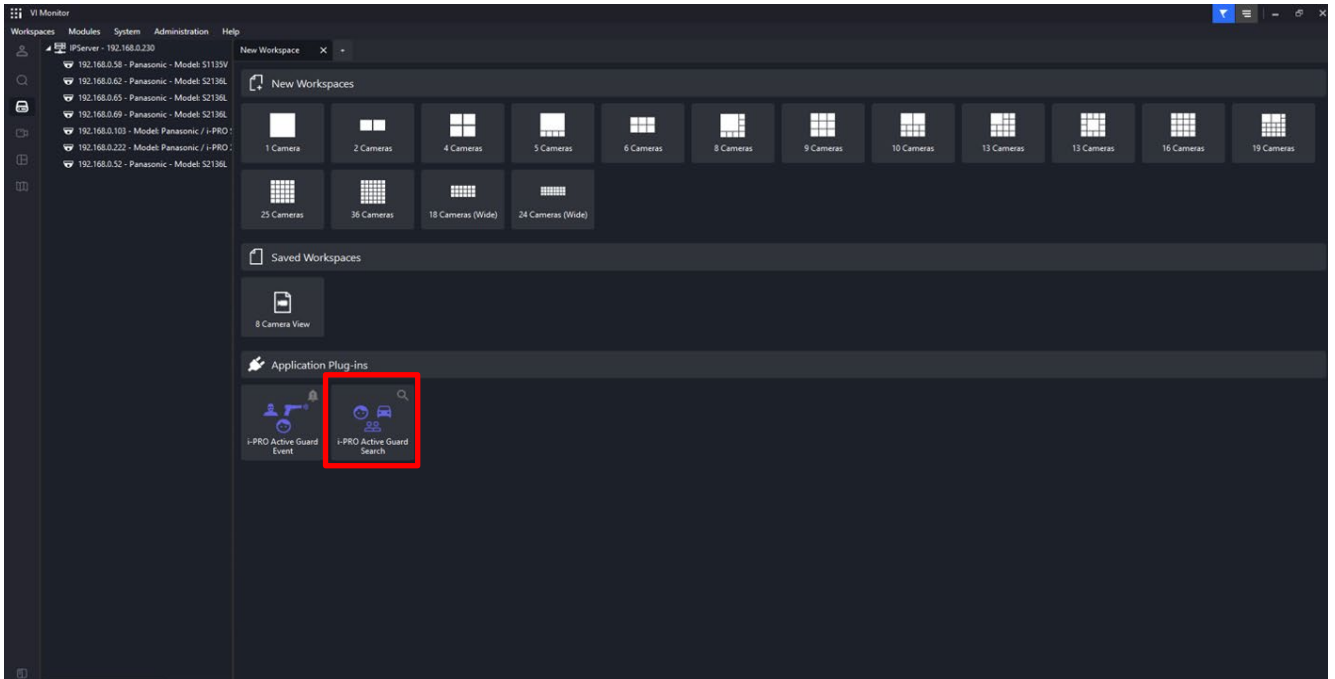


In addition to these, you may need to allow more privileges depending on the features of VI server you use.

See manual of VI for details.

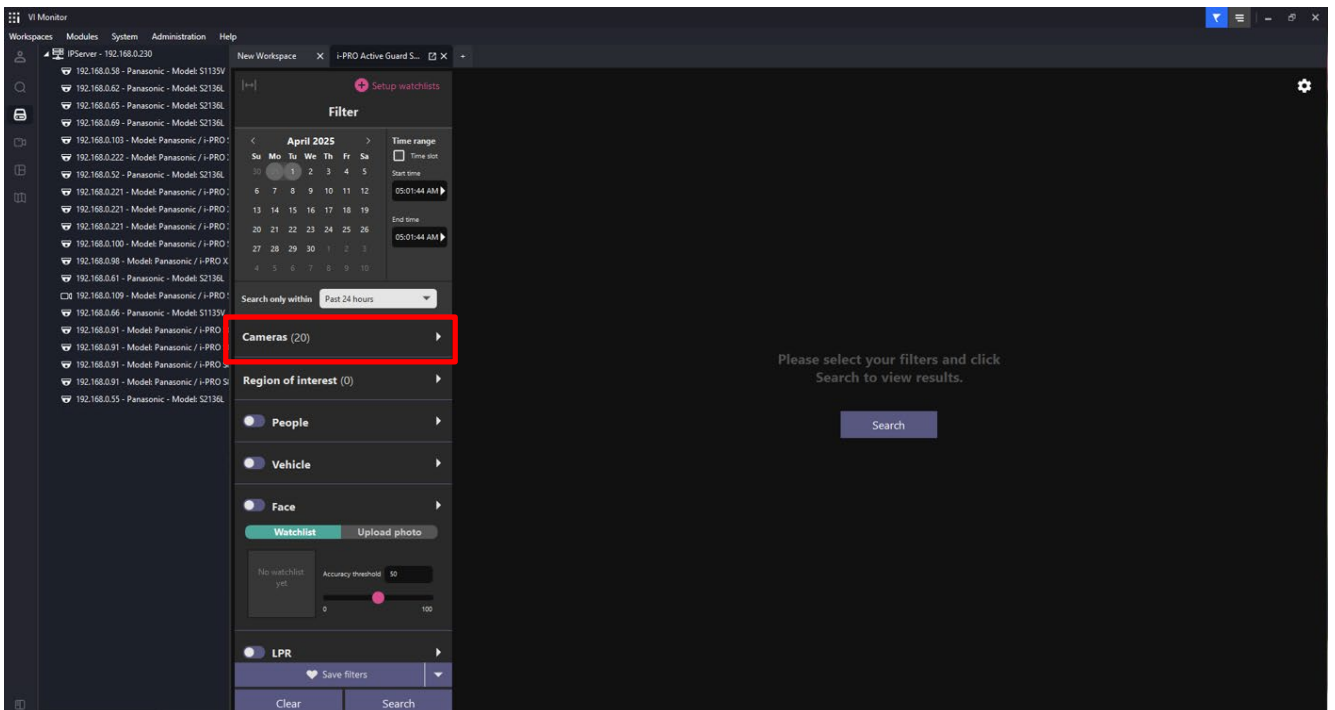
## 4.4.4. Check

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 etc. extension software is installed.



When camera has detected object, you can search Best shot images by clicking Search.

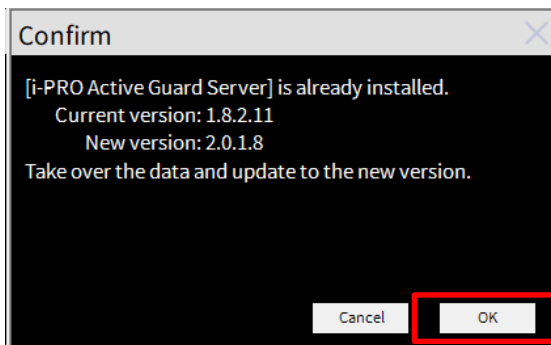
## 4.5. Upgrade i-PRO Active Guard server

Upgrade i-PRO Active Guard server by transferring settings and past data.

**Important:**

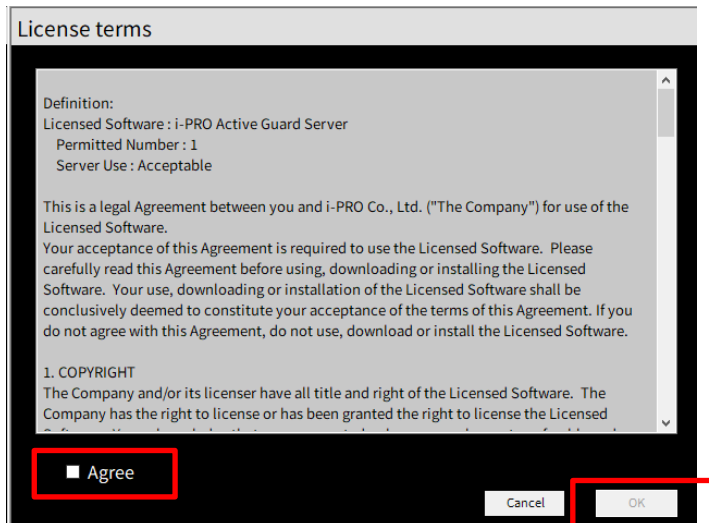
- When upgrading the version of i-PRO Active Guard server, do not uninstall the already installed version and SQL Server. If you uninstall it, you will not be able to use the past data.
- File path length of ***MultiAIStartup.exe*** must be less than 119.

Execute "**MultiAIStartup.exe**" as administrator.



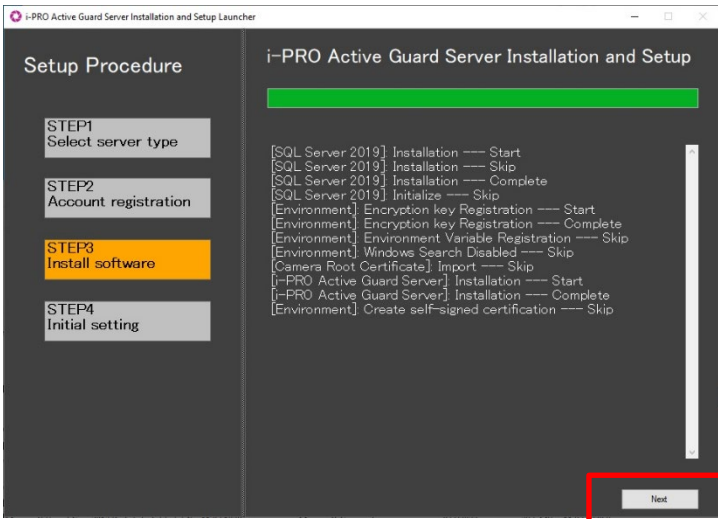
**STEP1**

Confirm the version and click [OK].



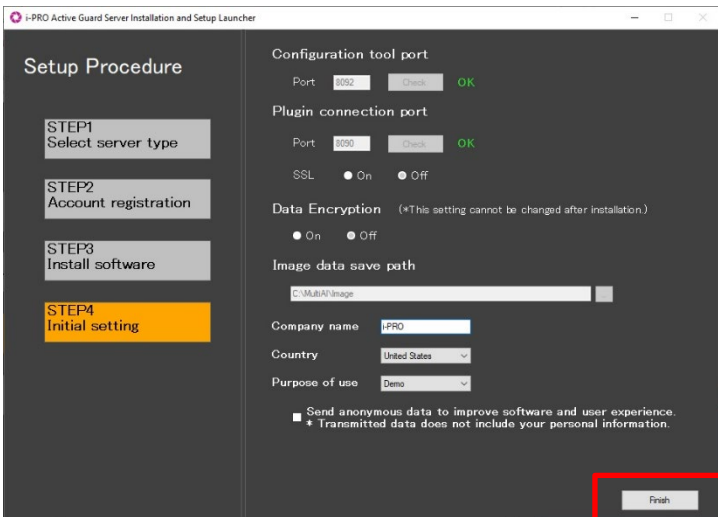
**STEP2**

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



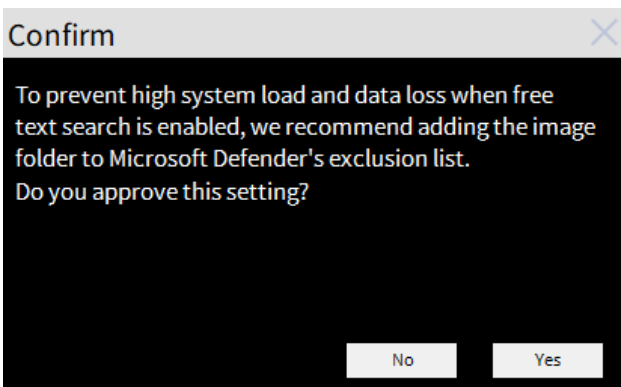
### STEP3

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



### STEP4

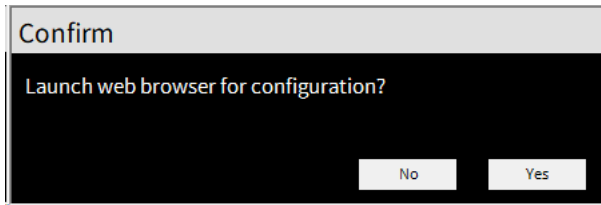
Click [Finish].



Please choose whether to add the “Image data save path” folder to the Microsoft Defender’s exclusion list.

Note)

- It is also possible to change the settings after starting operation. Refer to 4.3.9.1.
- If you are using antivirus software other than Microsoft Defender, you may be able to reduce system load by excluding folders in a similar way, especially if the software has real-time protection features.



## STEP5

A dialog box will appear asking about launch web browser.

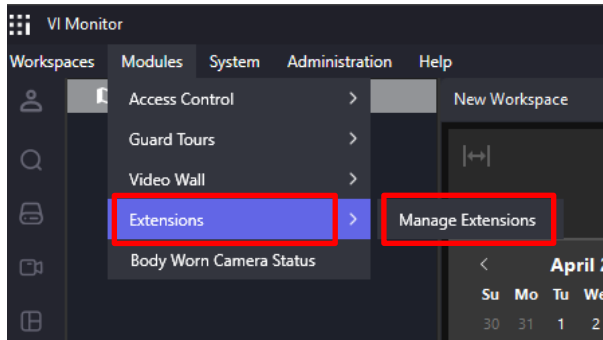
Please make your selection as necessary.

## 4.6. Upgrade Extension

Upgrade i-PRO Active Guard Extension by transferring settings.

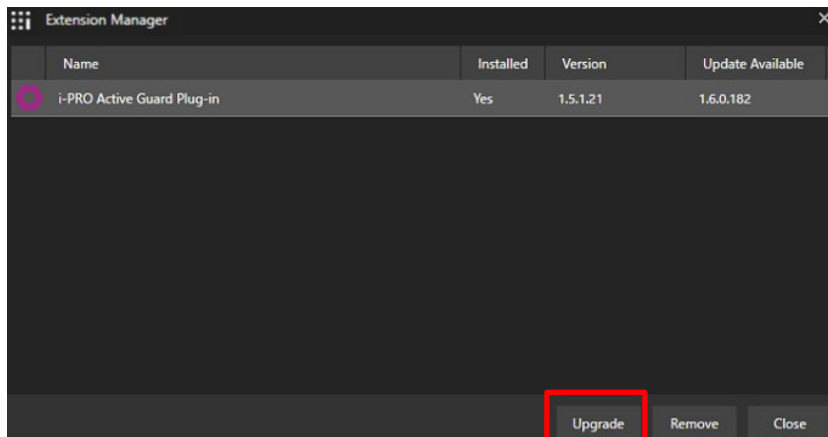
### STEP1

Click the [Modules] tab, then select [Extensions] - [Manage Extensions].  
[Extension Manager] window will be displayed.



### STEP2

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

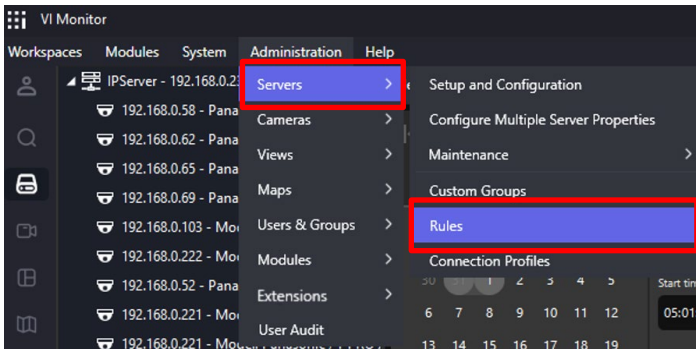


### STEP3

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

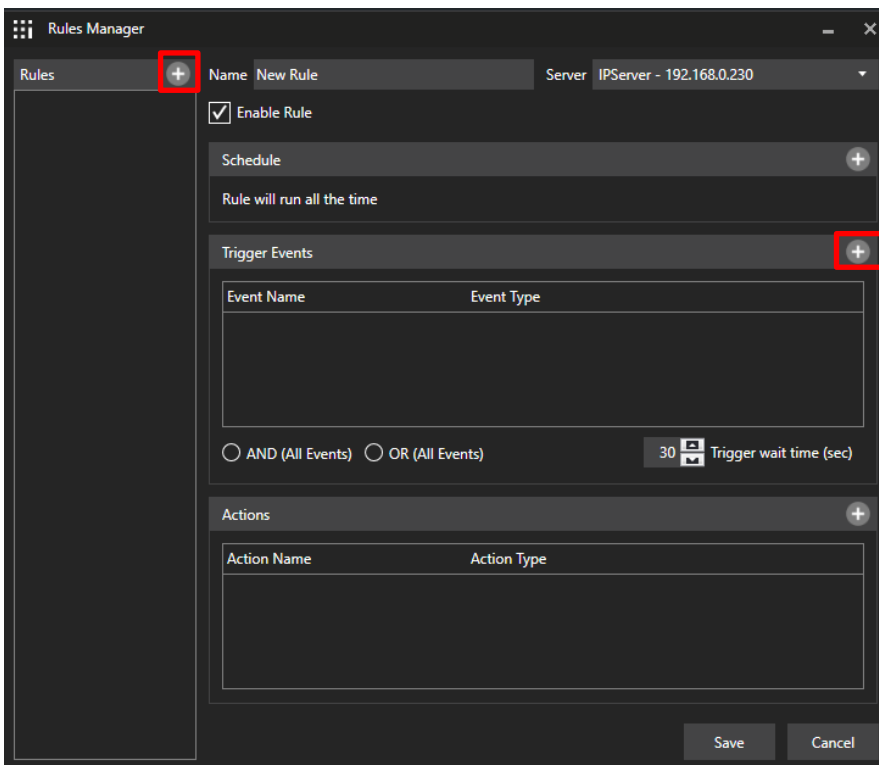
## 4.7. Rules setup for alarm notification (optional)

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

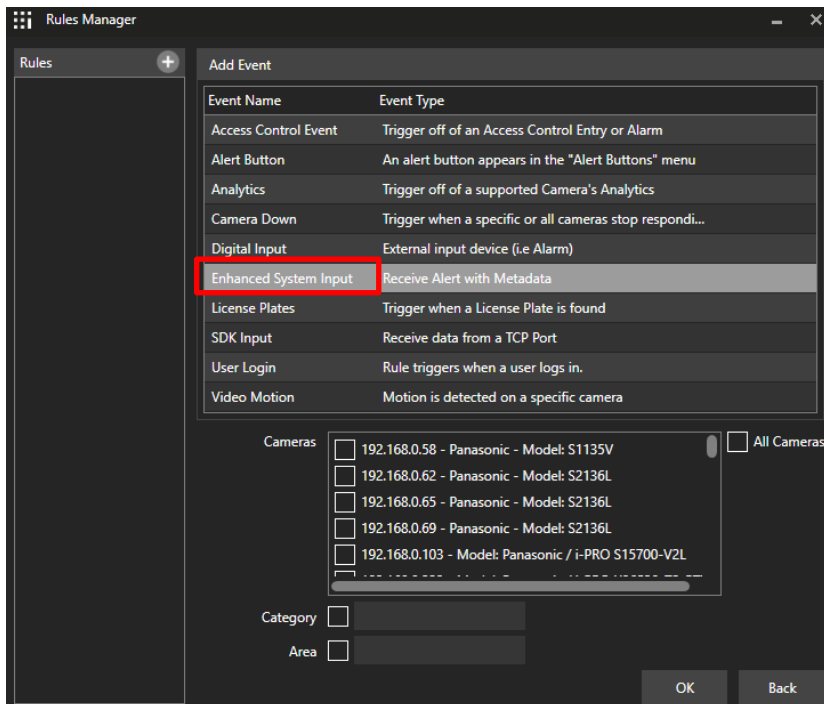


### 4.7.1. Add event

Click the **+** next to [Rules] to create a new rule, then click the **+** next to [Trigger Events].

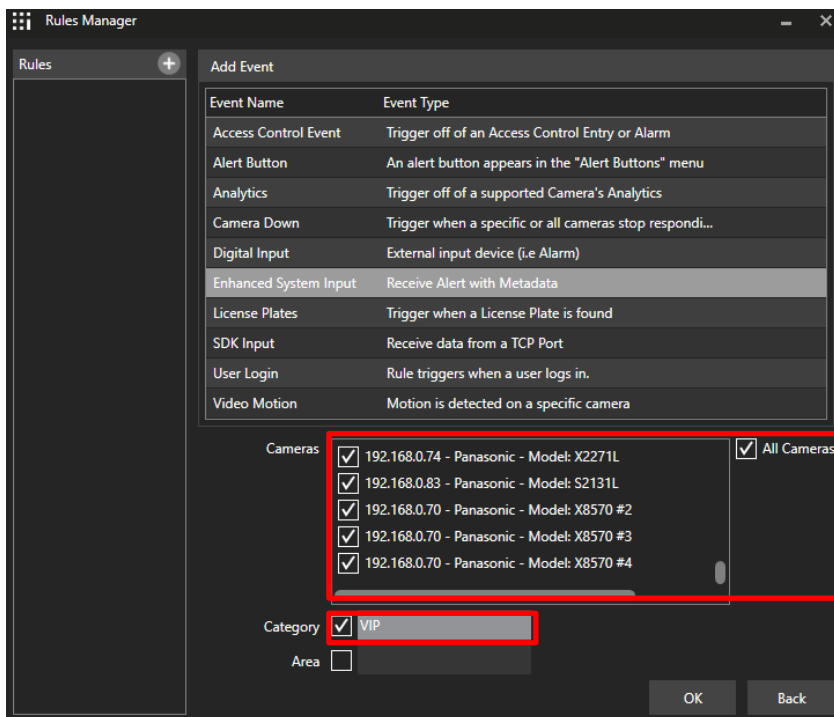


## Select [Enhanced System Input]



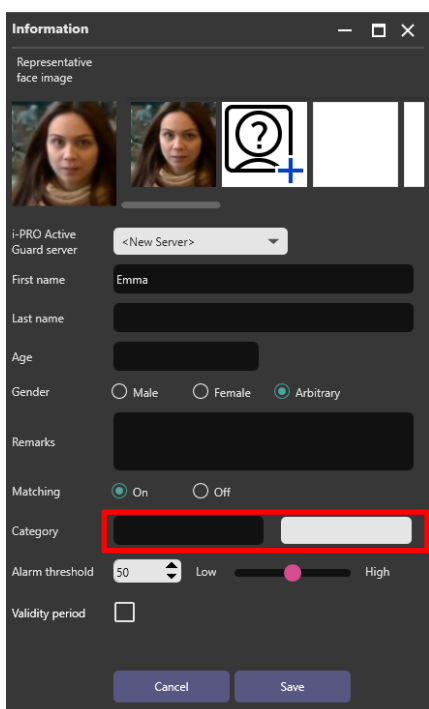
### 4.7.1.1. Registered face detection

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.



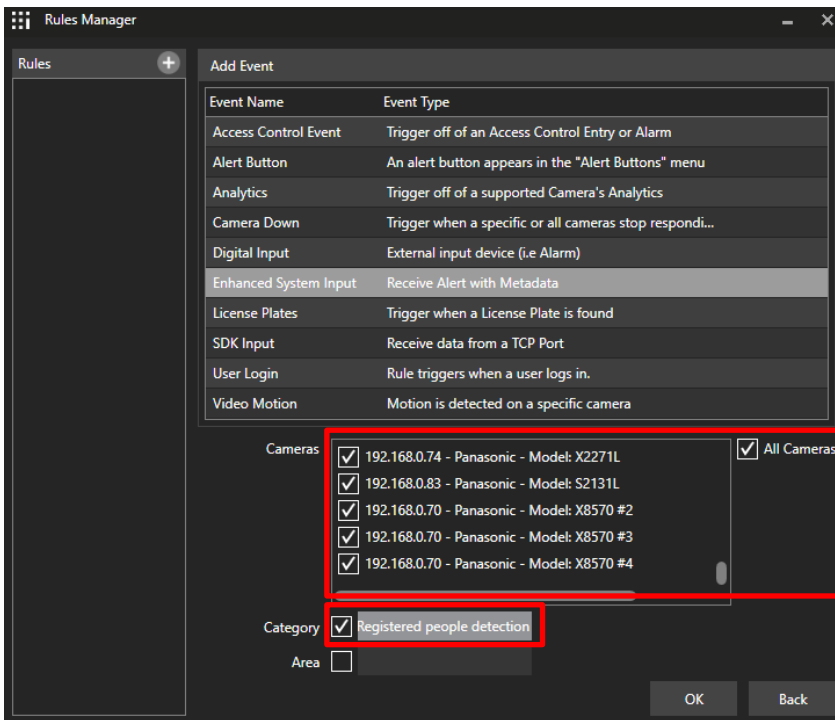
Category can be set from Face Watchlist registration window. See "i-PRO Active Guard Extension Operating Instructions for VI" in detail.

Area setting is invalid.



## 4.7.1.2. Registered people detection

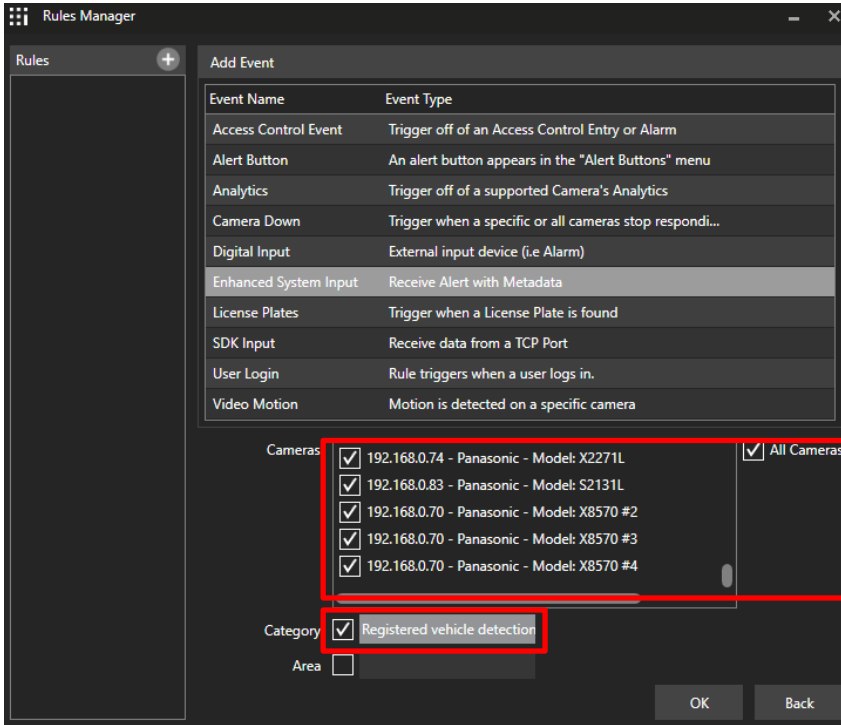
To use Registered people detection as Rules, check cameras with AI People detection and input “Registered people detection” for Category.



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.

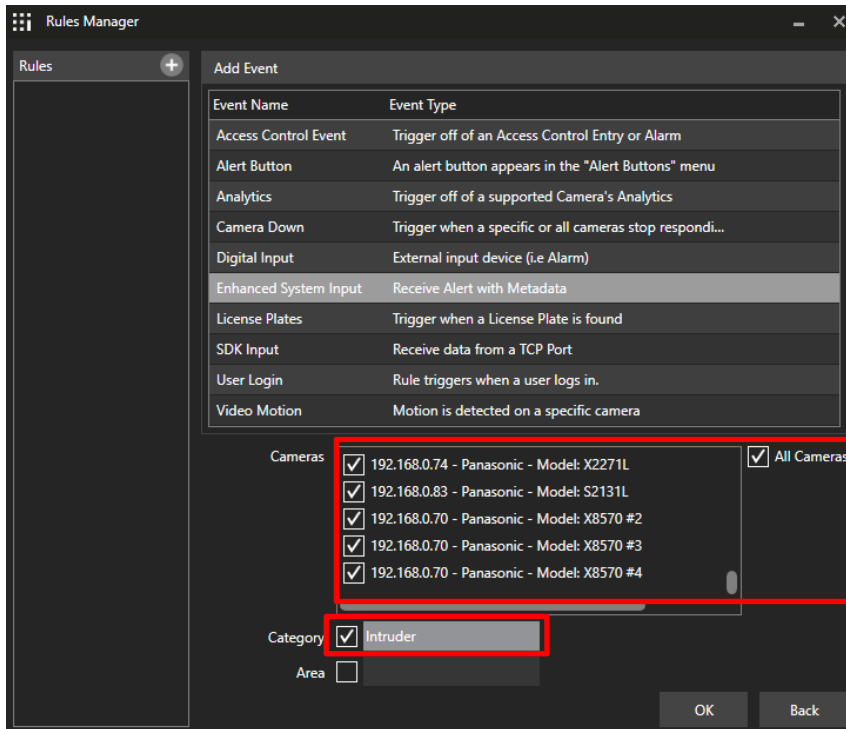


Area setting is invalid.

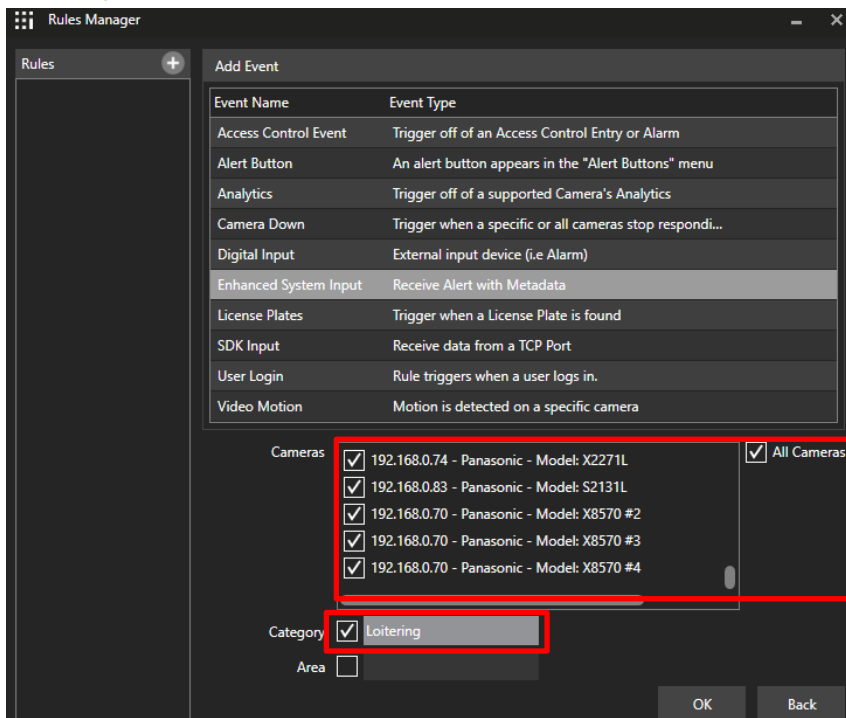
## 4.7.1.4. AI-VMD

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.

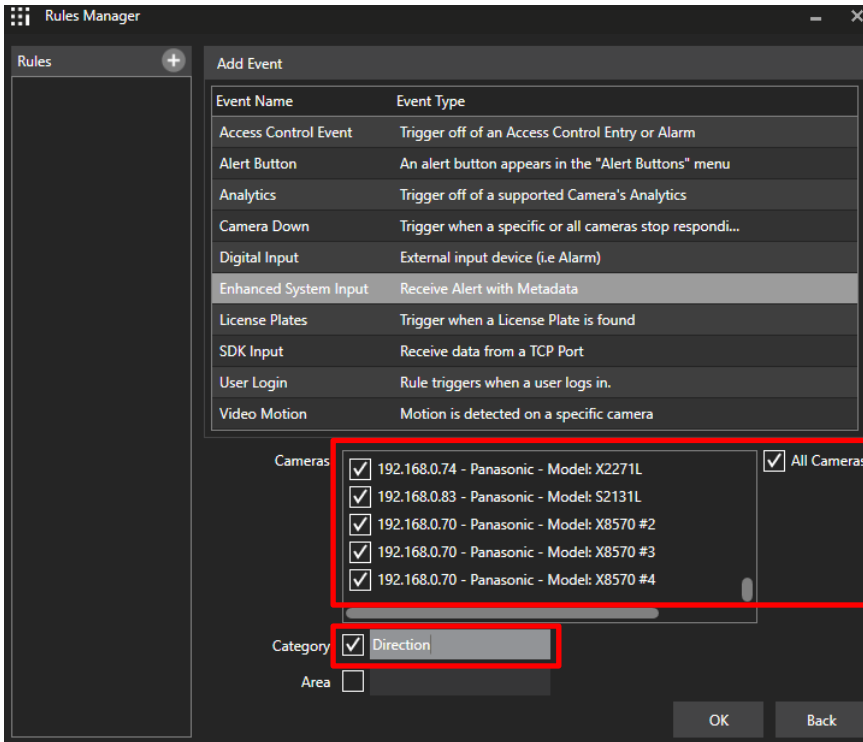
### Intruder for all areas



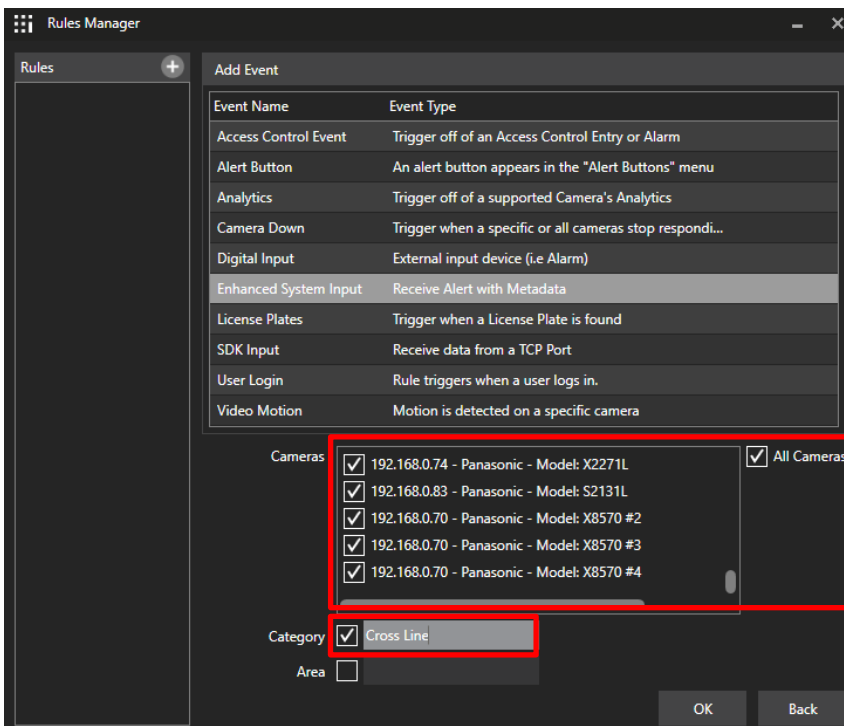
### Loitering for all areas



## Direction for all areas



## Cross Line for all areas

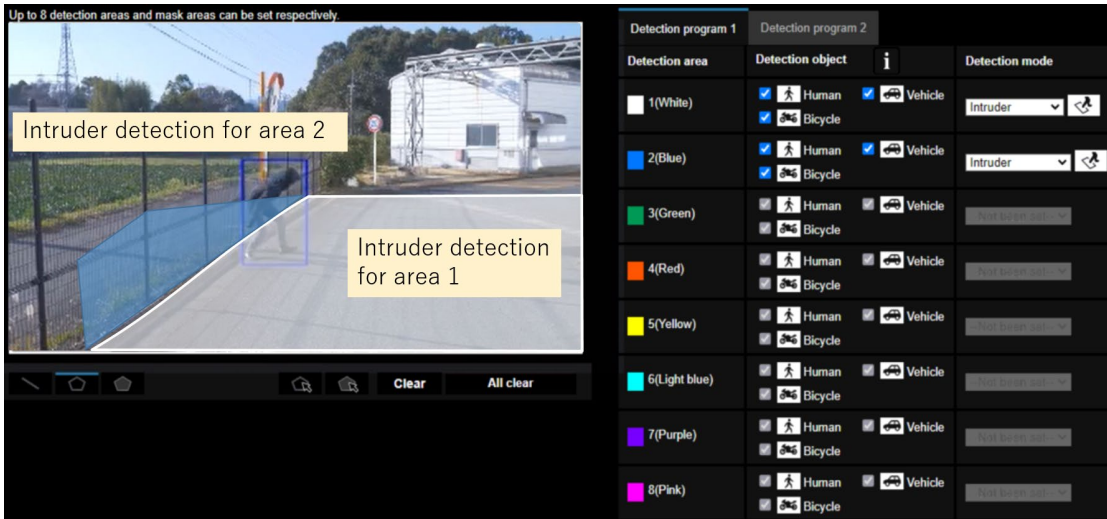


Area field enables that other actions for each area can be set.

Example of use case using Area field.

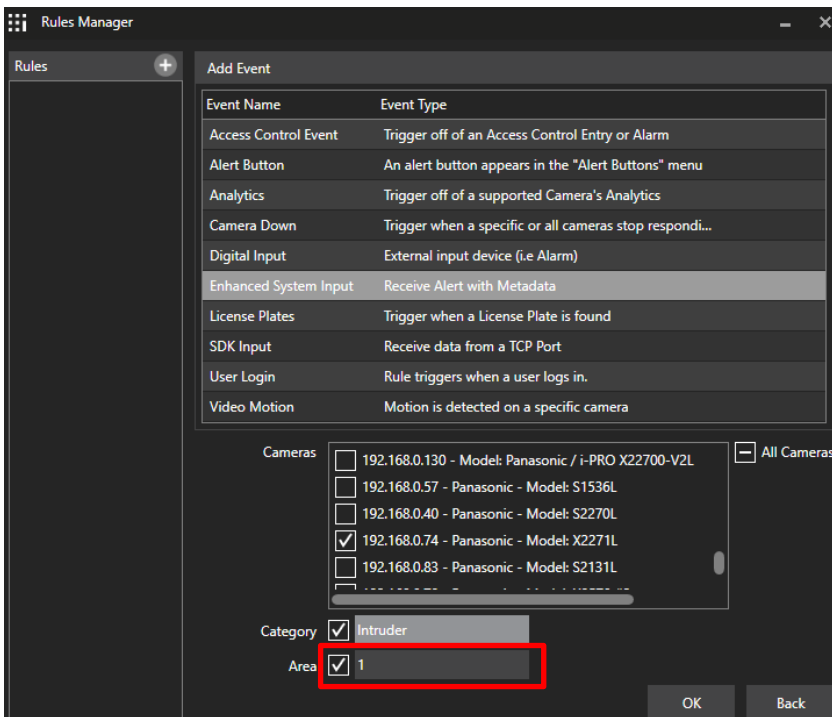
Area 1 is an exclusion zone and area 2 is around the area 1.

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.

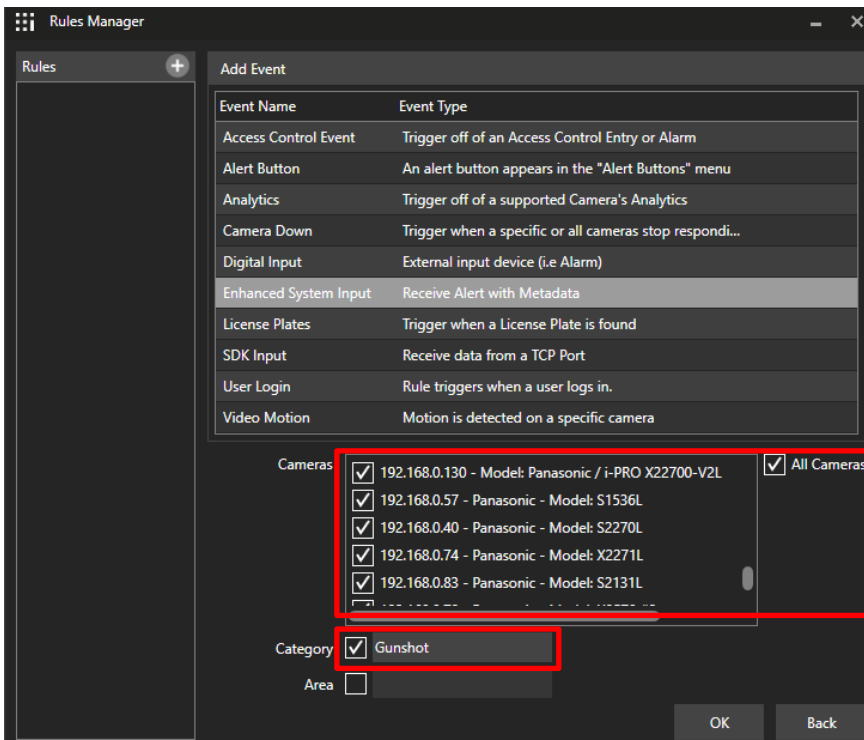


## 4.7.1.5. AI Sound classification

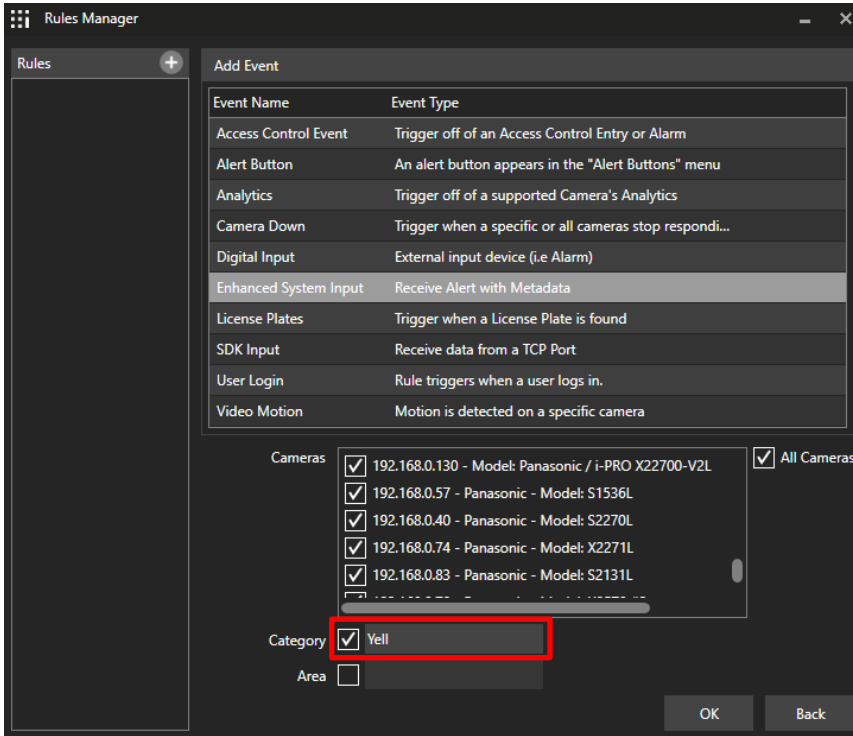
Category for AI Sound classification (Gunshot, Yell, Glass break, Vehicle horn and Audio detection) can be distinguished and Actions can be set for specific category.

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

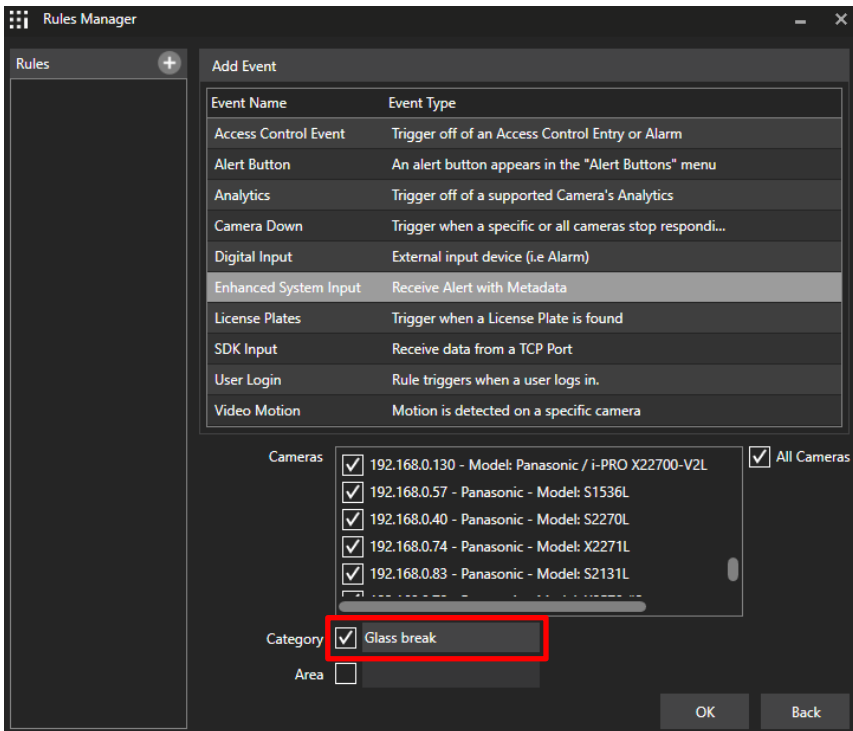
### Gunshot



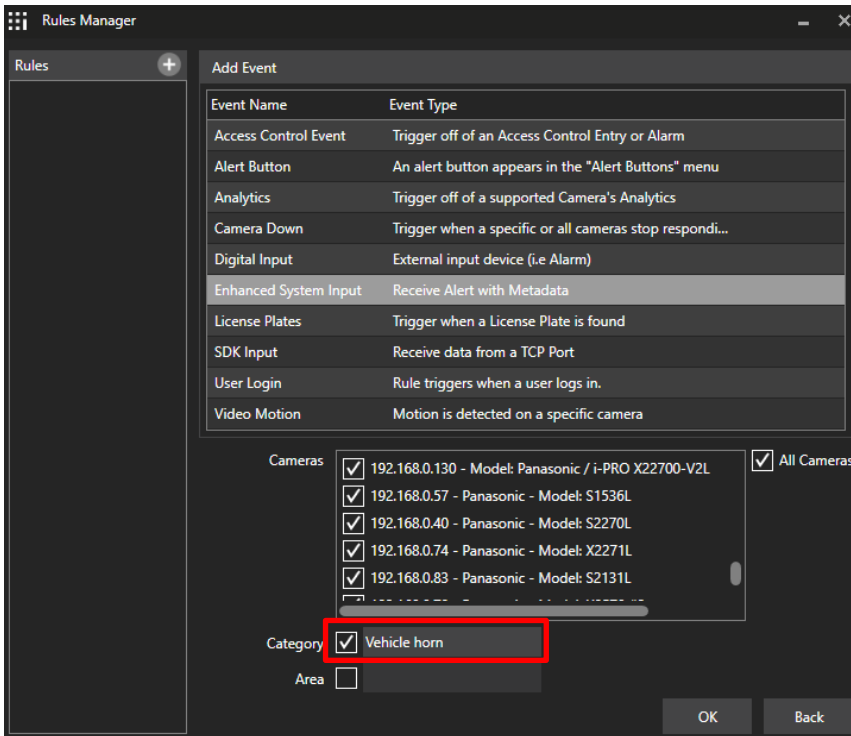
## Yell



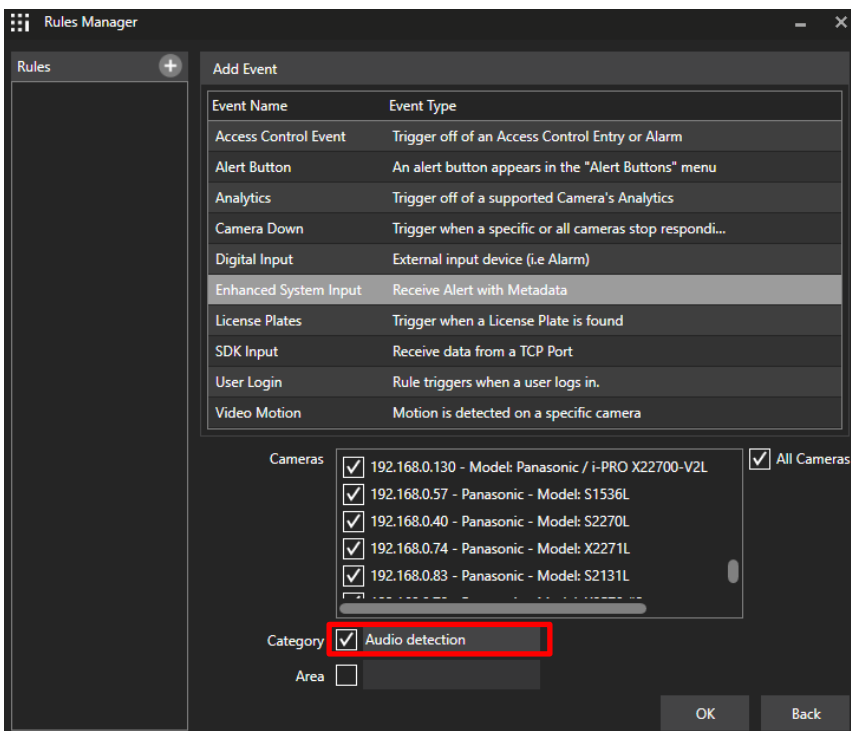
## Glass break



## Vehicle horn

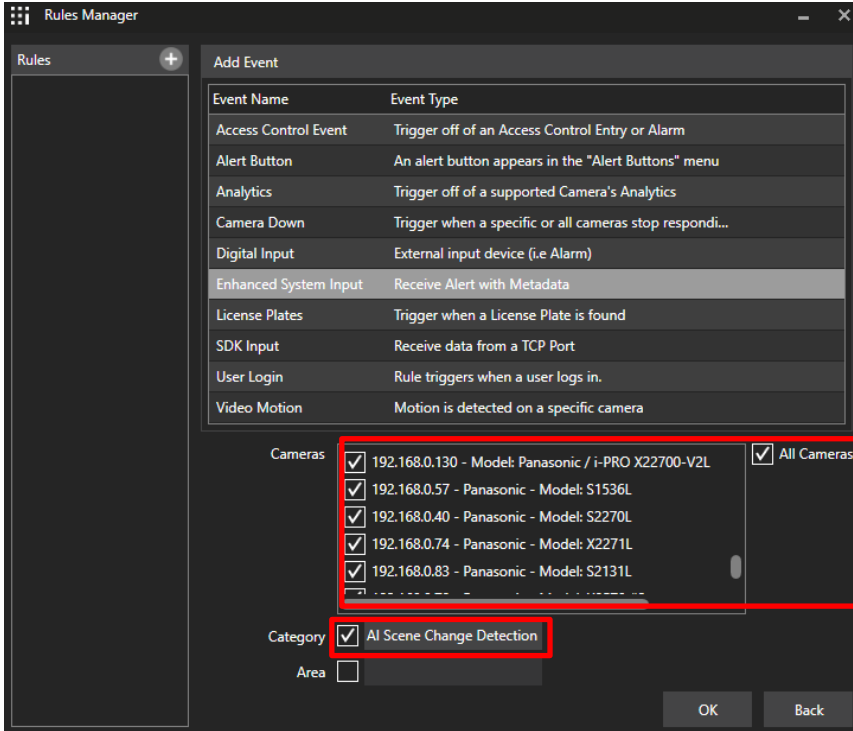


## Audio detection



## 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.

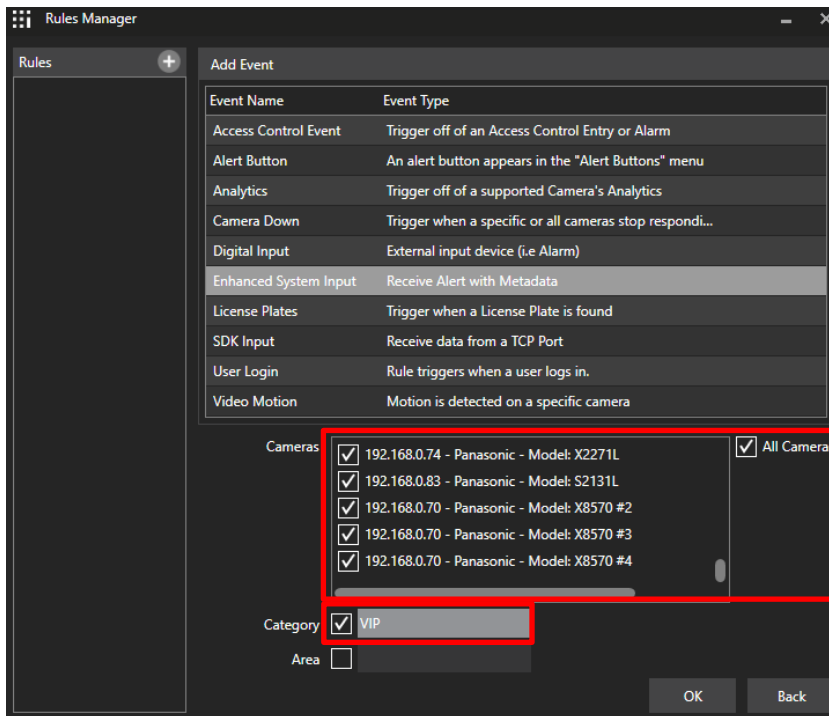


Area setting is invalid.

## 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.

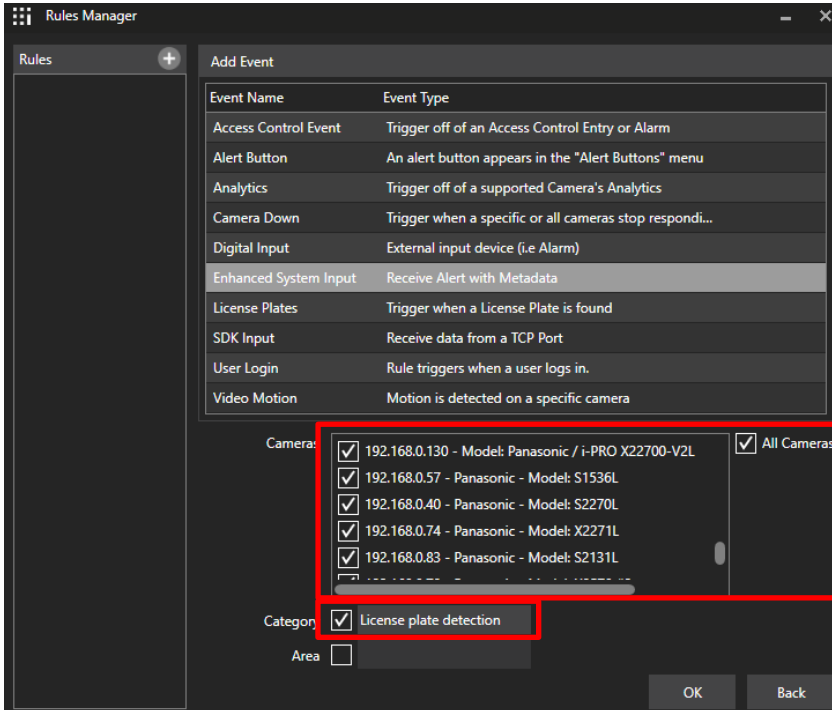
Actions can be set for specific category.



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 license plate Detection.

- License plate detection

You will be notified when you set “Notify all detected objects - License plates” on Register VMS.  
See 4.3.6.

- Registered license plate detection

You will be notified when you set watchlist to below settings on Extension.

Set “Detect by vehicle appearance only” to off,  
and set “Trigger” to “When license plates in the selected group were detected.”

- Unregistered license plate detection

You will be notified when you set watchlist to below settings on Extension.

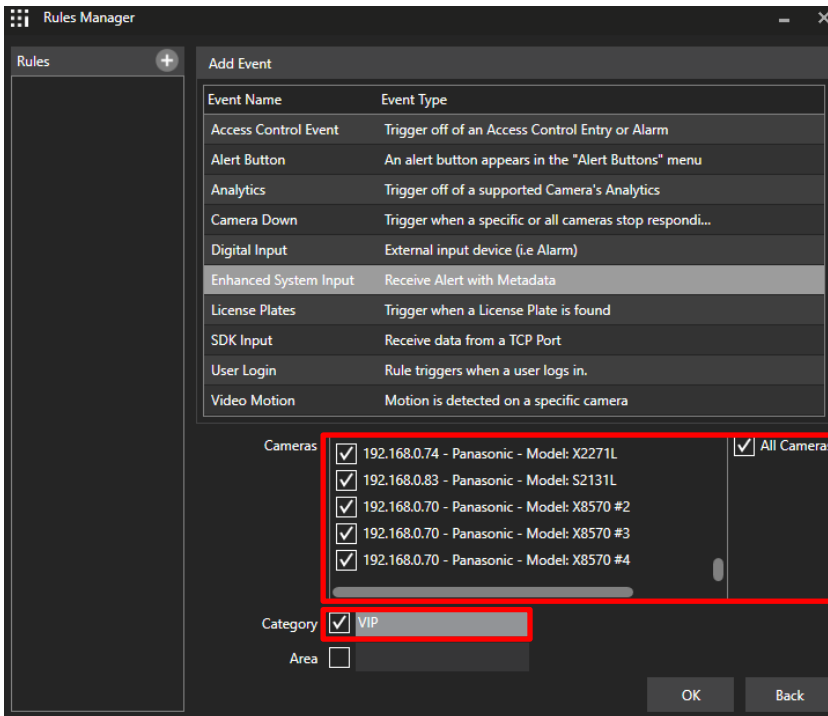
Set “Detect by vehicle appearance only” to off,  
and set “Trigger” to “When other license plate which is not in the selected group was detected.”

- Registered Advanced Vehicle Detection

Set “Detect by vehicle appearance only” to on.

## 4.7.1.8. Code detection

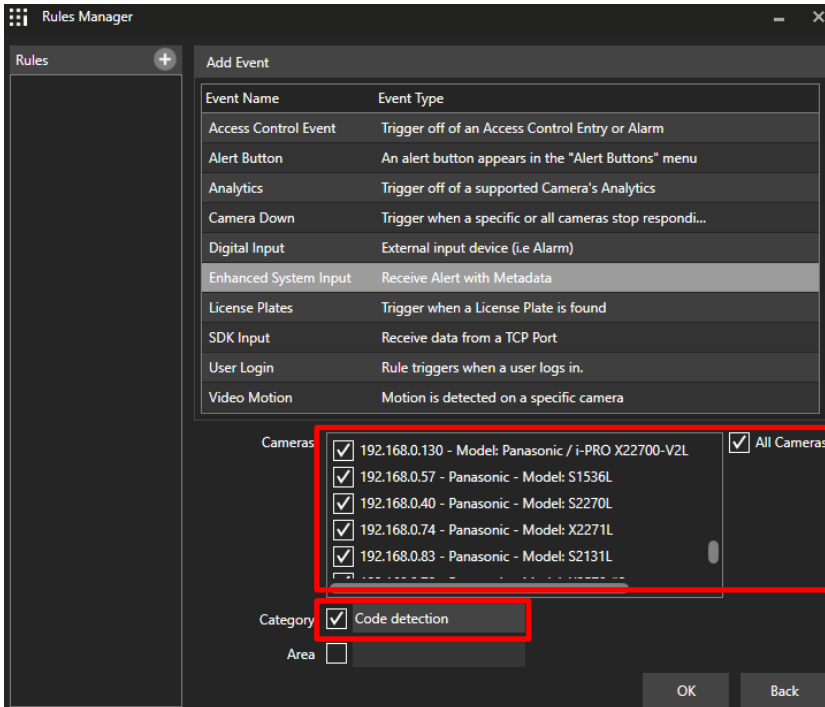
To use Registered or Unregistered code detection as Rules, check cameras with VaxOCR GENESIS, and input group strings registered as OCR watchlist (ex. VIP, Student, Employee and so on.) for Category. Actions can be set for specific category.



Area setting is invalid.

To use all code detection as Rules, check cameras with VaxOCR GENESIS and input "Code detection" for Category.

Actions can be set for specific category.



Area setting is invalid.

Note)

About notification of Code Detection.

- Code detection

You will be notified when you set "Notify all detected objects - Code" on Register VMS.

See 4.3.6.

- Registered code detection

You will be notified when you set OCR watchlist to below settings on Extension.

Set "Trigger" to "When OCR Code in the selected group was detected."

- Unregistered code detection

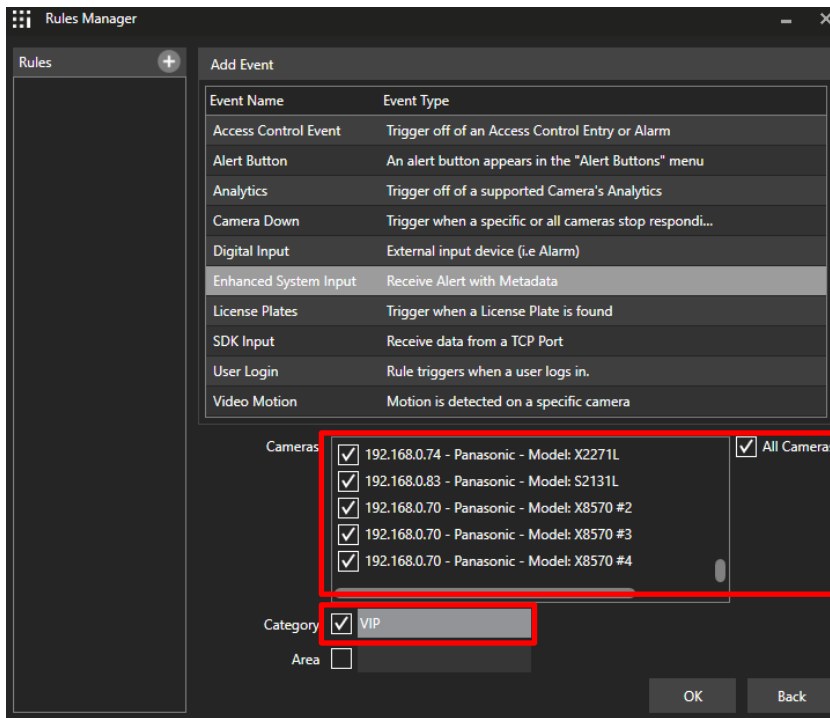
You will be notified when you set OCR watchlist to below settings on Extension.

Set "Trigger" to "When other OCR Code which is not in the selected group was detected."

## 4.7.1.9. Container detection

To use Registered or Unregistered container detection as Rules, check cameras with VaxOCR CONTAINER detection, and input group strings registered as Container watch list (ex. VIP, Student, Employee and so on.) for Category.

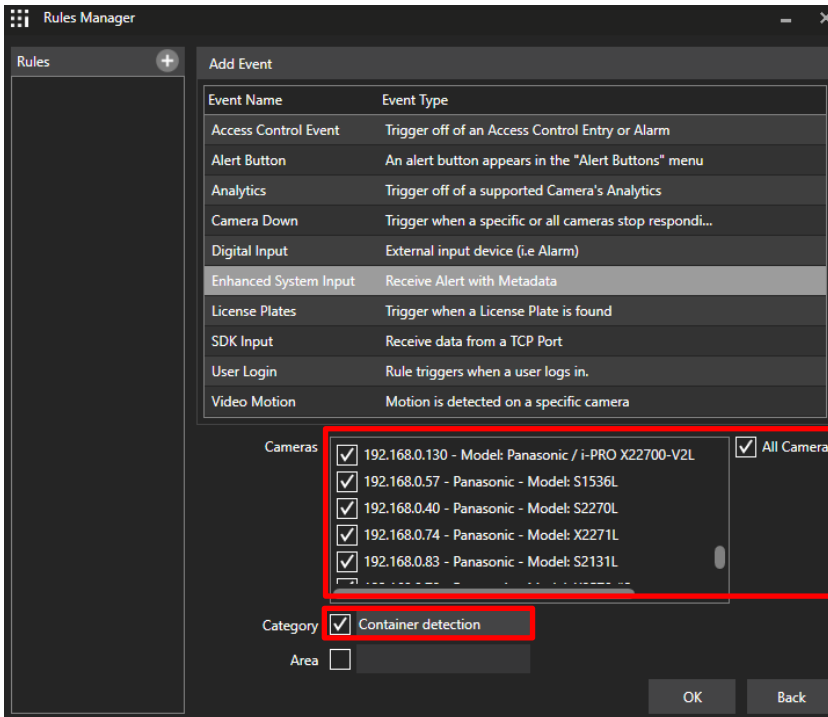
Actions can be set for specific category.



Area setting is invalid.

To use all container detection and registered advanced container detection as Rules, check cameras with VaxOCR CONTAINER and input “Container detection” or “Registered advanced container detection” for Category.

Actions can be set for specific category.



Area setting is invalid.

Note)

About notification of Container Detection.

- Container detection

You will be notified when you set “Notify all detected objects - Container” on Register VMS.  
See 4.3.6.

- Registered Container detection

You will be notified when you set Container watchlist to below settings on Extension.  
Set “Detect by container details” to off,  
and set “Trigger” to “When Container in the selected group was detected.”

- Unregistered container detection

You will be notified when you set Container watchlist to below settings on Extension.  
Set “Detect by container details” to off,  
and set “Trigger” to “When other container which is not in the selected group was detected.”

- Registered Advanced Container Detection

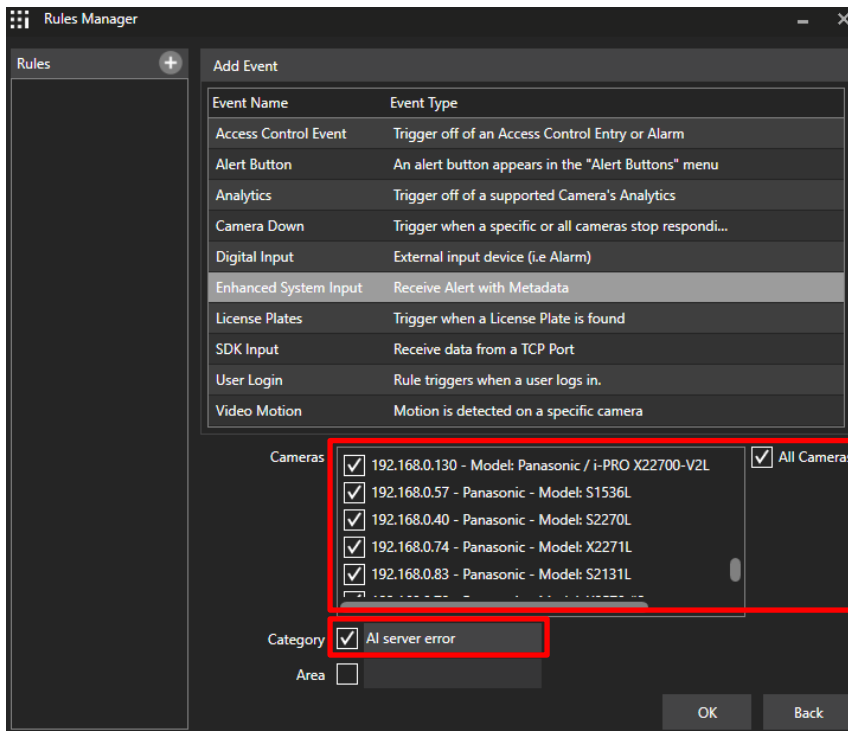
Set “Detect by container details” to on.

## 4.7.1.10. System alarm of i-PRO Active Guard server

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

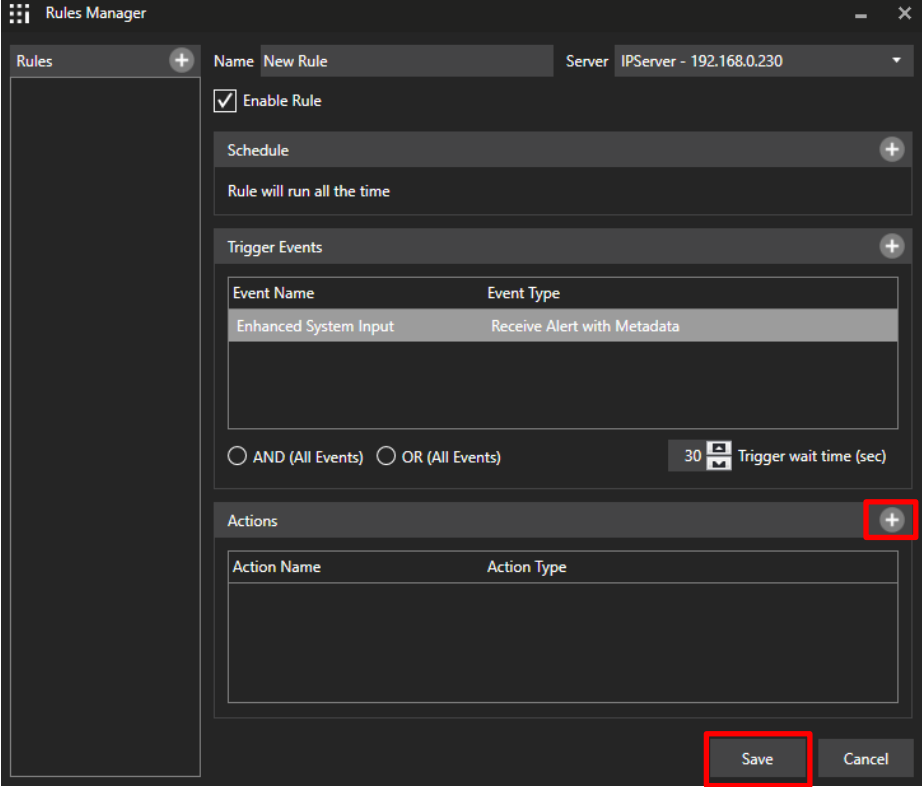
Configuration on i-PRO Active Guard server side is required in advance (Refer to 4.3.6)

Check for all cameras and input "AI server error" for Category.



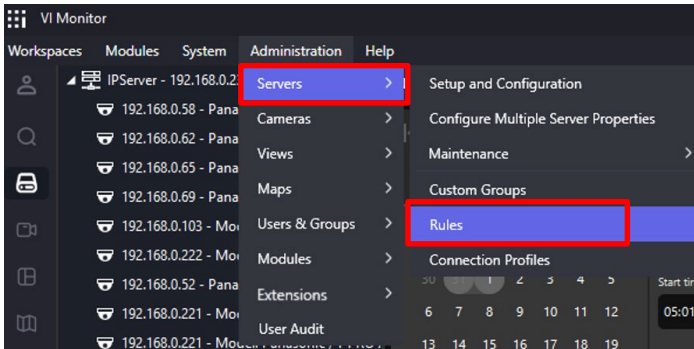
# 4.7.2. Add Actions

Click the **+** next to [Trigger Events] and select any actions, and then [Save]



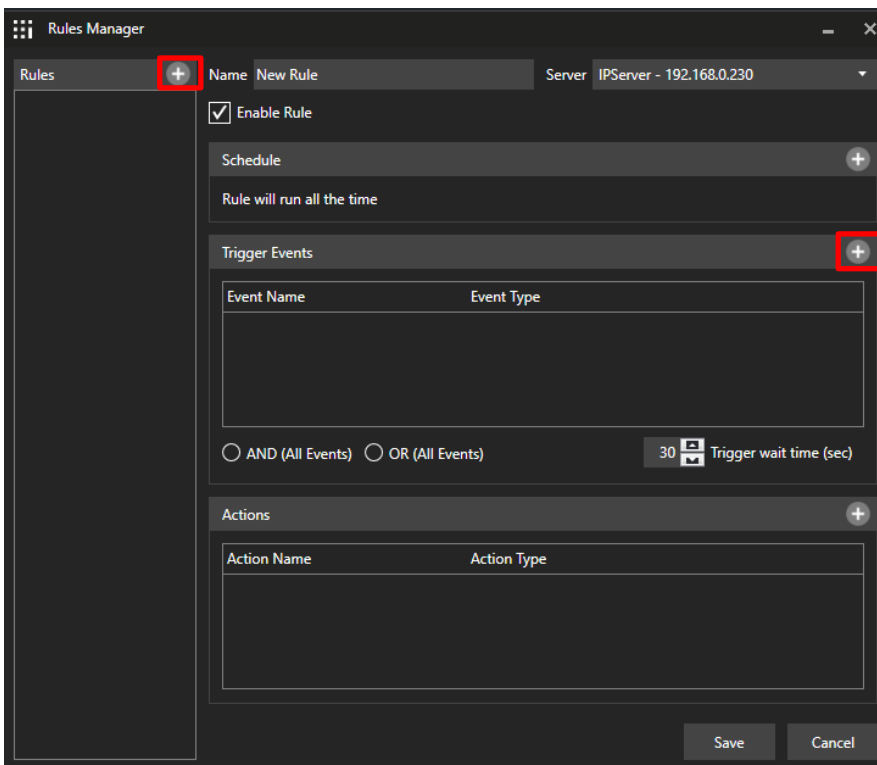
## 4.8. Setup for VCA monitoring function (optional)

Video Control Analytics (VCA) is available in Extension 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])

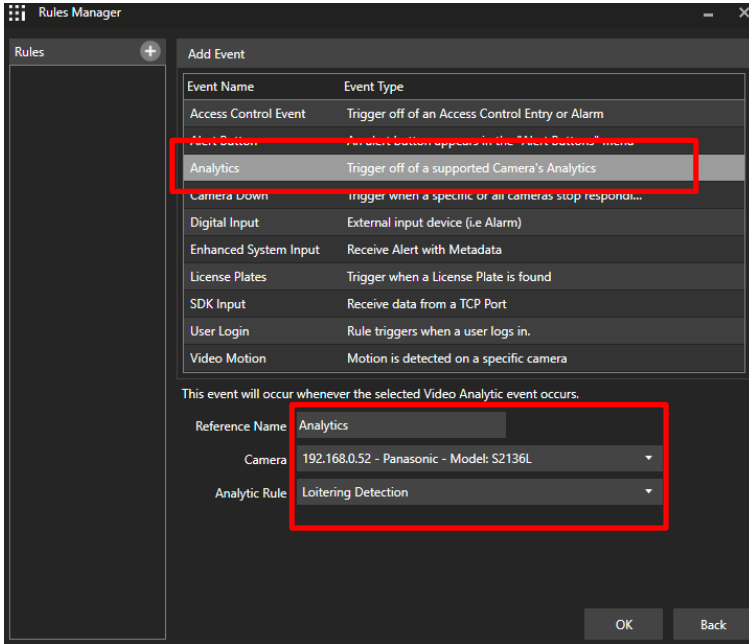


### 4.8.1. Add event

Click the **+** next to [Rules] to create a new rule, then click the **+** next to [Trigger Events].



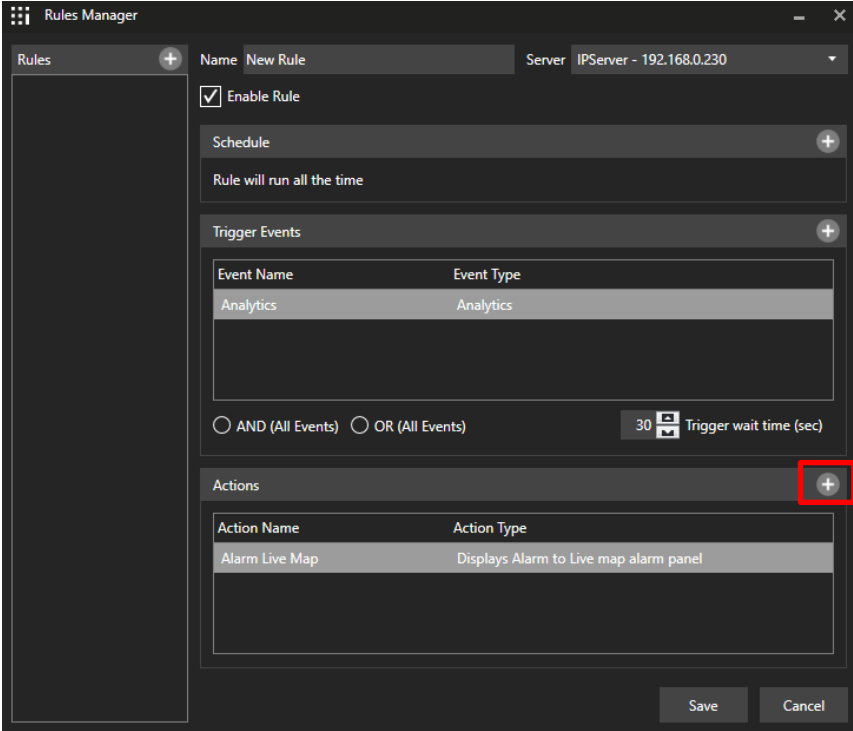
## Select [Analytics]



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 the **+** next to [Actions] and select [Live Map Alarm], and then [Save]



## **4.9. Setup for Access Control monitoring function (optional)**

Access Control monitoring is available in Extension if VI Server is integrated with an Access Control server. Access Control must be configured in VI Monitor (See *Video Insight Administrative Guide*). It is required to assign cameras to specific doors.

# 5. When changing system component

## 5.1. Add system device

### 5.1.1. Add VI server

#### STEP1

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

#### STEP2

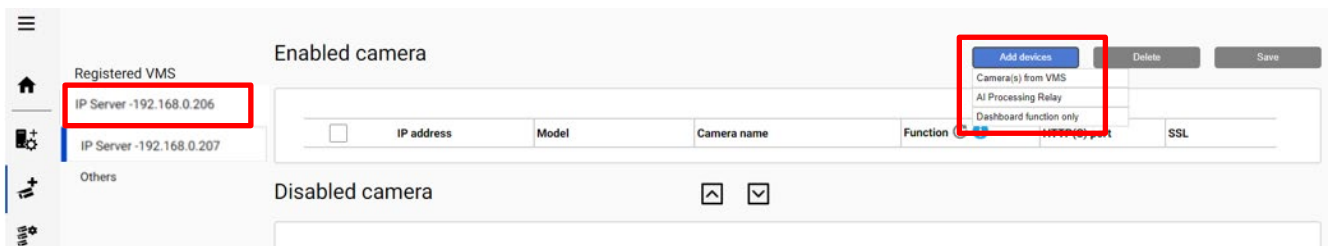
Register new VI server to i-PRO Active Guard server (Refer to 4.3.2.2)

#### STEP3

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

Select new VI server and click [Add devices] - [Camera(s) from VMS].

Following procedure is the same as 4.3.2.3



#### STEP4

Restart process (Refer to 4.3.3)

### 5.1.2. Add camera to registered VI server

#### STEP1

Register AI cameras to VI server using VI Monitor (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)

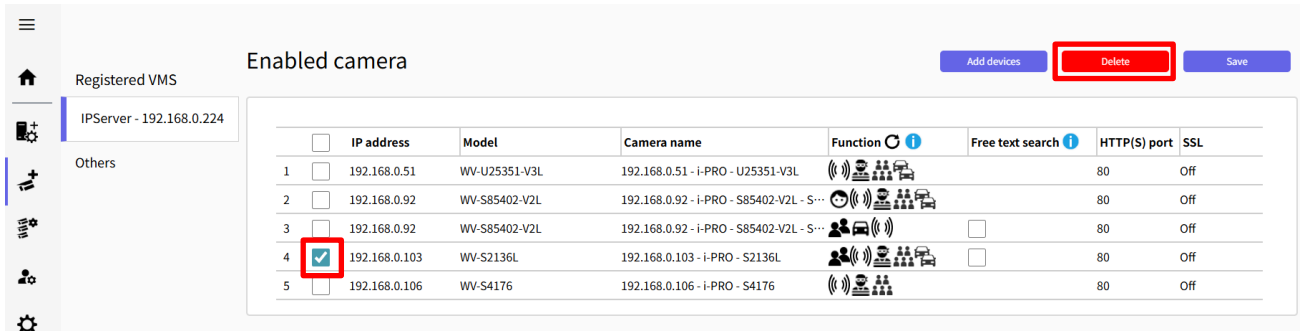
## 5.2. Delete system device

### 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 a web interface for managing cameras. On the left, there is a sidebar with navigation icons. The main area is titled 'Enabled camera' and contains a table with the following columns: IP address, Model, Camera name, Function, Free text search, HTTP(S) port, and SSL. There are five rows of camera data. The 'Delete' button in the top right corner is highlighted with a red box. The checkbox in the first column of the fourth row (IP 192.168.0.103) is checked and also highlighted with a red box.

	<input type="checkbox"/>	IP address	Model	Camera name	Function	Free text search	HTTP(S) port	SSL
1	<input type="checkbox"/>	192.168.0.51	WV-U25351-V3L	192.168.0.51 - i-PRO - U25351-V3L		<input type="checkbox"/>	80	Off
2	<input type="checkbox"/>	192.168.0.92	WV-S85402-V2L	192.168.0.92 - i-PRO - S85402-V2L - S...		<input type="checkbox"/>	80	Off
3	<input type="checkbox"/>	192.168.0.92	WV-S85402-V2L	192.168.0.92 - i-PRO - S85402-V2L - S...		<input type="checkbox"/>	80	Off
4	<input checked="" type="checkbox"/>	192.168.0.103	WV-S2136L	192.168.0.103 - i-PRO - S2136L		<input type="checkbox"/>	80	Off
5	<input type="checkbox"/>	192.168.0.106	WV-S4176	192.168.0.106 - i-PRO - S4176		<input type="checkbox"/>	80	Off

#### 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.

The screenshot shows the 'Registered VMS' interface. On the left, there is a sidebar with navigation icons. The main area is titled 'Registered VMS' and contains two sections: 'Enabled camera' and 'Disabled camera'. The 'Enabled camera' section has a table with columns: IP address, Model, Camera name, Function, Free text search, HTTP(S) port, and SSL. The table contains 5 rows. The 4th row, with IP address 192.168.0.103, has a red box around its checkbox. Below the 'Enabled camera' table is the 'Disabled camera' section, which has a red box around its dropdown arrow icon. The 'Save' button in the top right corner of the 'Enabled camera' section is also highlighted with a red box.

	<input type="checkbox"/>	IP address	Model	Camera name	Function	Free text search	HTTP(S) port	SSL
1	<input type="checkbox"/>	192.168.0.51	WV-U25351-V3L	192.168.0.51 - i-PRO - U25351-V3L		<input checked="" type="checkbox"/>	80	Off
2	<input type="checkbox"/>	192.168.0.92	WV-S85402-V2L	192.168.0.92 - i-PRO - S85402-V2L - S...		<input checked="" type="checkbox"/>	80	Off
3	<input type="checkbox"/>	192.168.0.92	WV-S85402-V2L	192.168.0.92 - i-PRO - S85402-V2L - S...		<input type="checkbox"/>	80	Off
4	<input checked="" type="checkbox"/>	192.168.0.103	WV-S2136L	192.168.0.103 - i-PRO - S2136L		<input type="checkbox"/>	80	Off
5	<input type="checkbox"/>	192.168.0.106	WV-S4176	192.168.0.106 - i-PRO - S4176		<input type="checkbox"/>	80	Off

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

### STEP2

[Save]

The screenshot shows the 'Registered VMS' interface. The 'Enabled camera' table now has 4 rows, with the 4th row (IP 192.168.0.103) missing. The 'Disabled camera' table now has 1 row with the 4th row (IP 192.168.0.103) moved there. The 'Save' button in the top right corner of the 'Enabled camera' section is highlighted with a red box.

	<input type="checkbox"/>	IP address	Model	Camera name	Function	Free text search	HTTP(S) port	SSL
1	<input type="checkbox"/>	192.168.0.51	WV-U25351-V3L	192.168.0.51 - i-PRO - U25351-V3L		<input checked="" type="checkbox"/>	80	Off
2	<input type="checkbox"/>	192.168.0.92	WV-S85402-V2L	192.168.0.92 - i-PRO - S85402-V2L - S...		<input checked="" type="checkbox"/>	80	Off
3	<input type="checkbox"/>	192.168.0.92	WV-S85402-V2L	192.168.0.92 - i-PRO - S85402-V2L - S...		<input type="checkbox"/>	80	Off
4	<input type="checkbox"/>	192.168.0.106	WV-S4176	192.168.0.106 - i-PRO - S4176		<input type="checkbox"/>	80	Off

	<input checked="" type="checkbox"/>	IP address	Model	Camera name	Function	Free text search	HTTP(S) port	SSL
1	<input checked="" type="checkbox"/>	192.168.0.103	WV-S2136L	192.168.0.103 - i-PRO - S2136L		<input type="checkbox"/>	80	Off

### 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 Extension.

## 5.2.3. Delete VI server

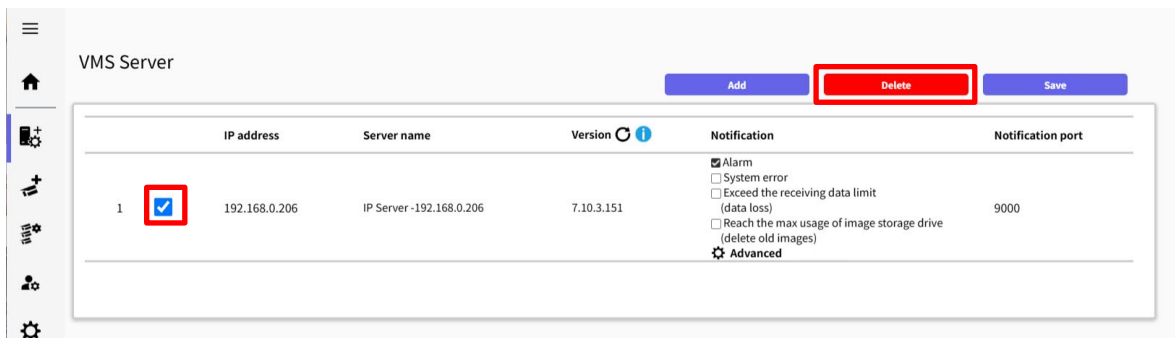
### STEP1

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 Extension.

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.



### STEP2

Restart process (Refer to 4.3.3)

## 5.3. Update registered device information

### Important:

- When updating the devices registered to the i-PRO Active Guard server (ex. changing camera settings(\*) or upgrading the VI server version), be sure to update the camera and VMS information according to the procedures in this chapter.

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 devices] - [Camera(s) from VMS] on Register Cameras screen.

The screenshot shows the 'Enabled camera' interface. On the left, there is a sidebar with a menu icon, a home icon, and a camera icon (highlighted with a red box). The main area displays a table of registered cameras. At the top right, there are buttons for 'Add devices', 'Delete', and 'Save'. The 'Add devices' button is highlighted with a red box and has a dropdown menu with 'Camera(s) from VMS' selected. Below the table, there are options for 'AI Processing Relay' and 'Dashboard function only'.

<input type="checkbox"/>	IP address	Model	Camera name	Function	AI Processing Relay	Dashboard function only	HTTP(S) port	SSL
<input type="checkbox"/>	192.168.0.51	WV-U25351-V3L	192.168.0.51 - i-PRO - U25351-V3L		<input type="checkbox"/>	<input type="checkbox"/>	80	Off
<input type="checkbox"/>	192.168.0.92	WV-S85402-V2L	192.168.0.92 - i-PRO - S85402-V2L - S...		<input type="checkbox"/>	<input type="checkbox"/>	80	Off
<input type="checkbox"/>	192.168.0.92	WV-S85402-V2L	192.168.0.92 - i-PRO - S85402-V2L - S...		<input type="checkbox"/>	<input type="checkbox"/>	80	Off
<input type="checkbox"/>	192.168.0.106	WV-S4176	192.168.0.106 - i-PRO - S4176		<input type="checkbox"/>	<input type="checkbox"/>	80	Off

#### STEP3

Select the camera and input credentials and [Check].

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

HTTPS

User Name

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

HTTPS

User Name

Password

### STEP5

Restart process. (Refer to 4.3.3)

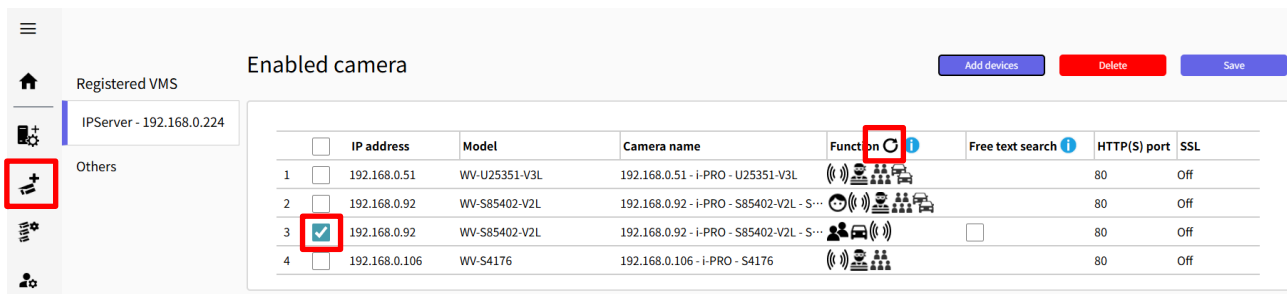
## 5.3.2. Update extension software settings

### STEP1







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

### STEP2

Check the target camera and click  on Register Cameras screen.



The screenshot shows a web interface for managing cameras. On the left, there is a sidebar with a menu icon and a 'Registered VMS' section containing 'IPServer - 192.168.0.224' and 'Others'. The main area is titled 'Enabled camera' and contains a table with columns: IP address, Model, Camera name, Function, Free text search, HTTP(S) port, and SSL. The table lists four cameras. The 'Function' column for the third camera (IP: 192.168.0.92) has a refresh icon highlighted with a red box. The 'Function' column header also has a red box around it. The 'Free text search' column has a search icon. The 'HTTP(S) port' column has a value of 80 for all cameras. The 'SSL' column has a value of 'Off' for all cameras.

	<input type="checkbox"/>	IP address	Model	Camera name	Function 	Free text search 	HTTP(S) port	SSL
1	<input type="checkbox"/>	192.168.0.51	WV-U25351-V3L	192.168.0.51 - i-PRO - U25351-V3L		<input type="checkbox"/>	80	Off
2	<input type="checkbox"/>	192.168.0.92	WV-S85402-V2L	192.168.0.92 - i-PRO - S85402-V2L - S...		<input type="checkbox"/>	80	Off
3	<input checked="" type="checkbox"/>	192.168.0.92	WV-S85402-V2L	192.168.0.92 - i-PRO - S85402-V2L - S...		<input type="checkbox"/>	80	Off
4	<input type="checkbox"/>	192.168.0.106	WV-S4176	192.168.0.106 - i-PRO - S4176		<input type="checkbox"/>	80	Off

Note)

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

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

### STEP3

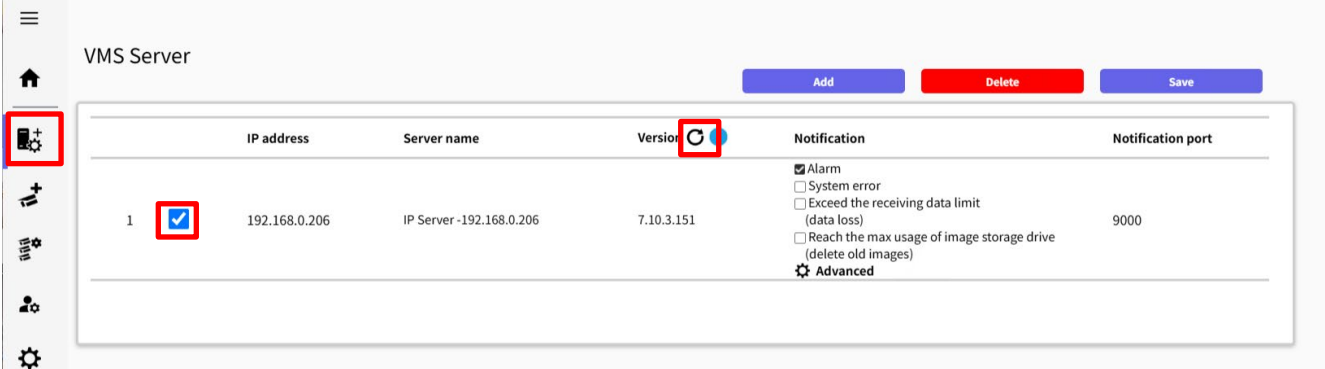
Confirm that the icon has been updated.

(See 4.3.2.3 about the meaning of icons).

### 5.3.3. Update VMS Server version information

#### STEP1

Check the VMS and click  on Register VMS screen.



The screenshot displays the 'VMS Server' management interface. At the top, there are buttons for 'Add', 'Delete', and 'Save'. Below these is a table with the following columns: IP address, Server name, Version, Notification, and Notification port. The 'Version' column has a refresh icon next to it. The first row of the table has a checkmark in the first column. The 'Notification' column contains a list of checkboxes: Alarm (checked), System error, Exceed the receiving data limit (data loss), and Reach the max usage of image storage drive (delete old images). There is also an 'Advanced' option with a gear icon. The 'Notification port' is set to 9000.

	IP address	Server name	Version	Notification	Notification port
1	192.168.0.206	IP Server-192.168.0.206	7.10.3.151	<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 usage of image storage drive (delete old images) ⚙️ Advanced	9000

#### STEP2

Confirm that the version of VMS has been updated.

## **5.4. Uninstall the system**

### **5.4.1. Uninstall Extension from client PC**

#### **STEP1**

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

#### **STEP2**

Find [i-PRO Active Guard Extension] and [Uninstall].

Note)

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

## 5.4.2. Uninstall i-PRO Active Guard server

### STEP1

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

### STEP2

Find [i-PRO Active Guard Server] and [Uninstall].

Delete “C:¥MultiAI” folder if exist.

Note)

- The MultiAI path above is the default, if you changed the path in section 4.3.1, please replace the path.

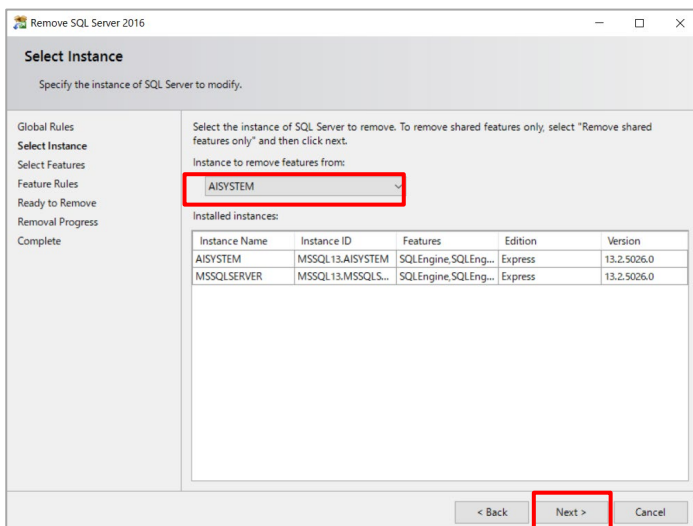
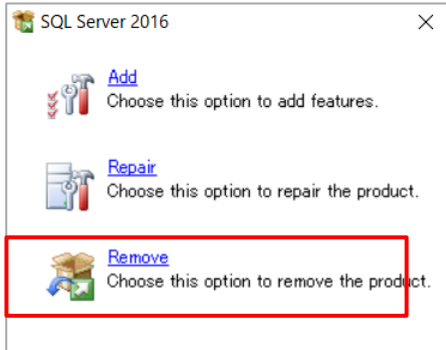
### 5.4.2.1. Uninstall SQL Server instance of i-PRO Active Guard server

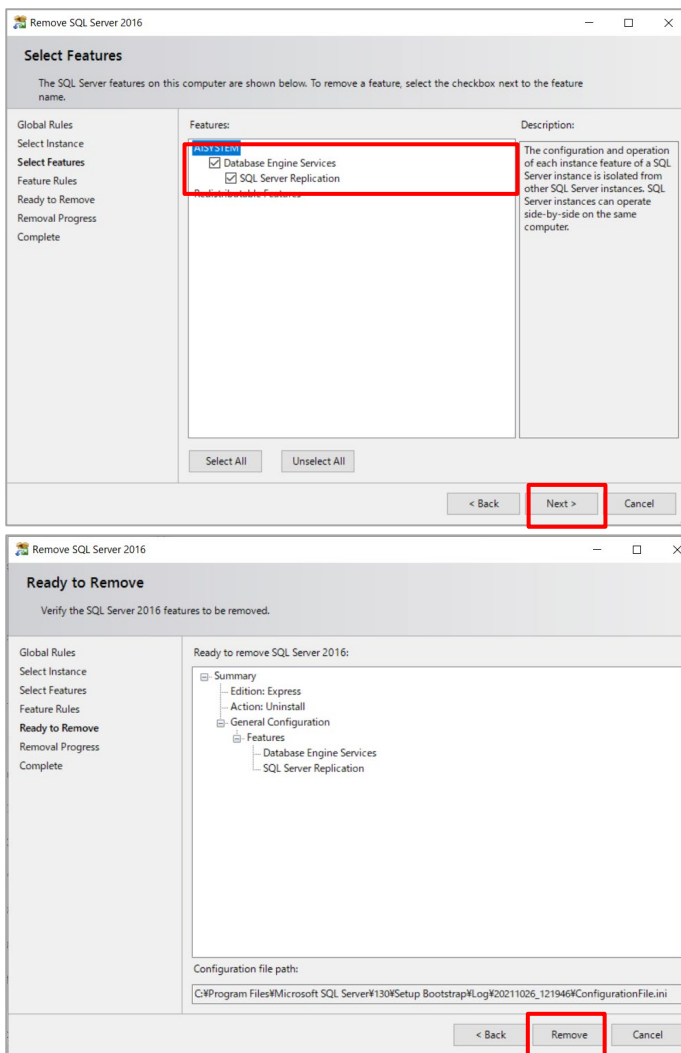
• If you select "Install a new SQL Server instance" in database selection for installation.

### STEP1

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 are 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.

## STEP2

Delete "C:\Program Files\Microsoft SQL Server\MSSQL13.AYSYSTEM" folder or "C:\Program Files\Microsoft SQL Server\MSSQL15.AYSYSTEM" folder.

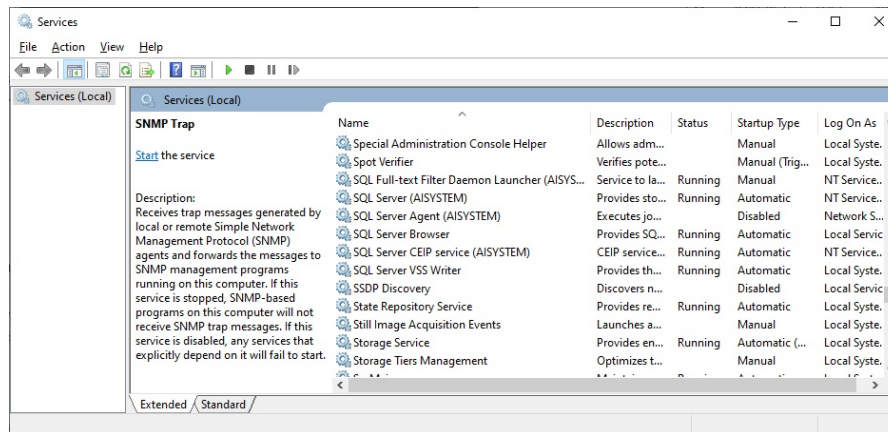
Note)

If any of the following services remain after uninstallation, please remove them manually.

- SQL Full-text Filter Daemon Launcher (AISYSTEM)
- SQL Server (AISYSTEM)
- SQL Server Agent (AISYSTEM)
- SQL Server CEIP service (AISYSTEM)

## (1) How to display services

Search for Services App in search box and run it.

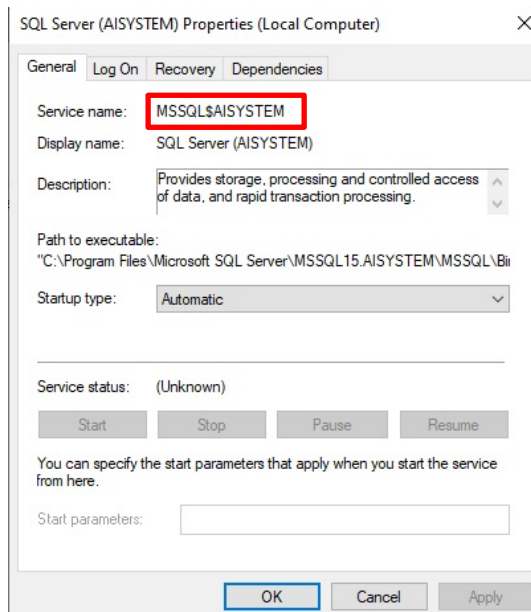


## (2) How to delete a service

Start a command prompt as an administrator user and execute the following command.

```
sc delete "xxx"
```

"xxx" is the Service name that appears when the target is double-clicked.



e.g.) SQL Server (AISYSTEM)

```
sc delete MSSQL$AISYSTEM
```

## 5.4.2.2. Delete i-PRO Active Guard server databases and users in existing SQL Server instance

- If you select "Use existing SQL Server instance" in database selection for installation.

### **Important:**

- Other applications using SQL Server may be affected.  
Please operate with caution and only when necessary.

## **STEP1**

Please use "SQL Server Management Studio (SSMS)" to delete the following data from the instance where i-PRO Active Guard server is installed.

- Databases
  - ai\_db
  - aicam
  - bi
  - support\_db
- Security - Logins
  - ai\_owner
  - aicam\_user
  - support\_user

# 5.5. Change IP address

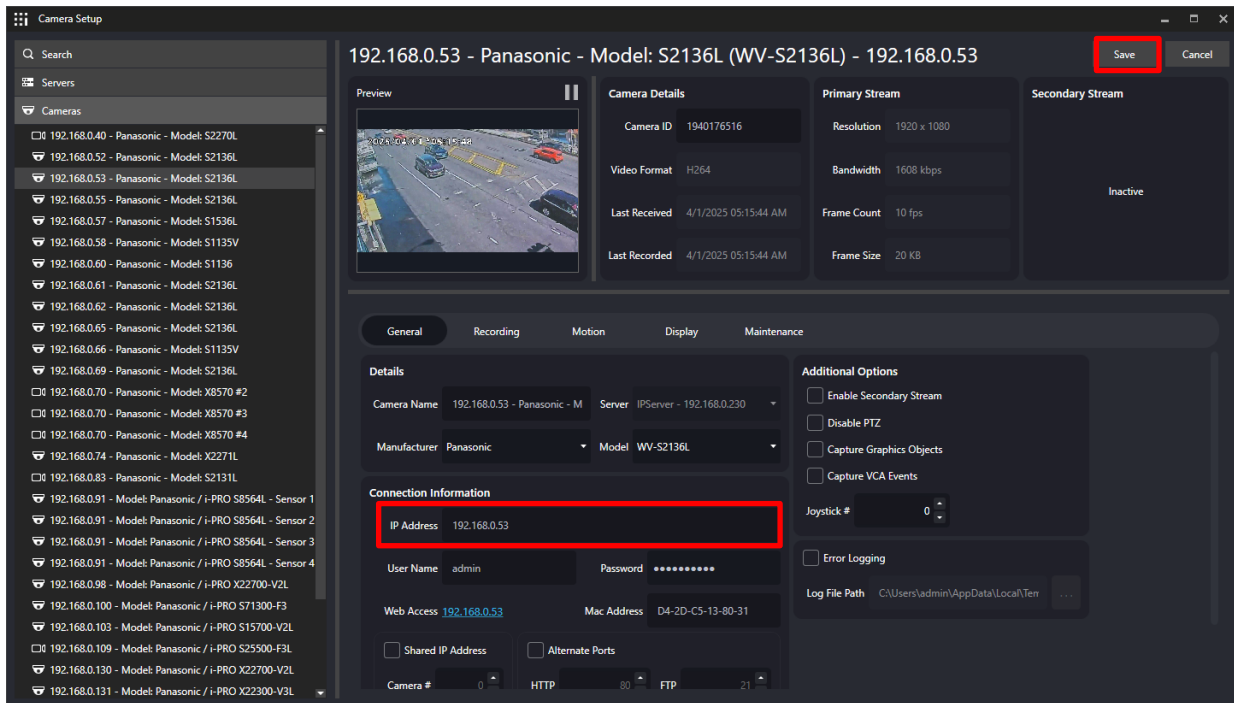
## 5.5.1. Change camera's IP address

### 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 Monitor ([Administration] – [Cameras] – [Setup and Configuration])



Once deleting cameras from VI Monitor 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 VI server's IP address

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

### STEP1

Change VI server's IP address.

### STEP2

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

### STEP3

Register the VI 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 Extension (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:

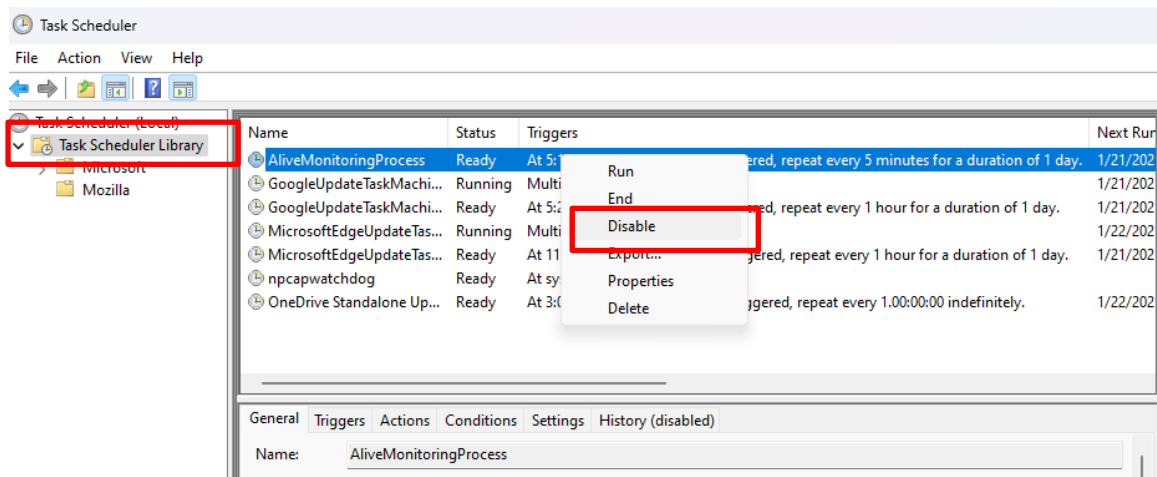
- In the restore environment, the following settings must be the same as the backup environment.
  - SQL Server instance
    - \*Switching from local server to network server is not possible.
  - Administrator username and password.
  - Install path of i-PRO Active Guard server.

If the settings are different, you need to reinstall the i-PRO Active Guard server in the restore environment.

### 5.6.1. Backup process

#### STEP1

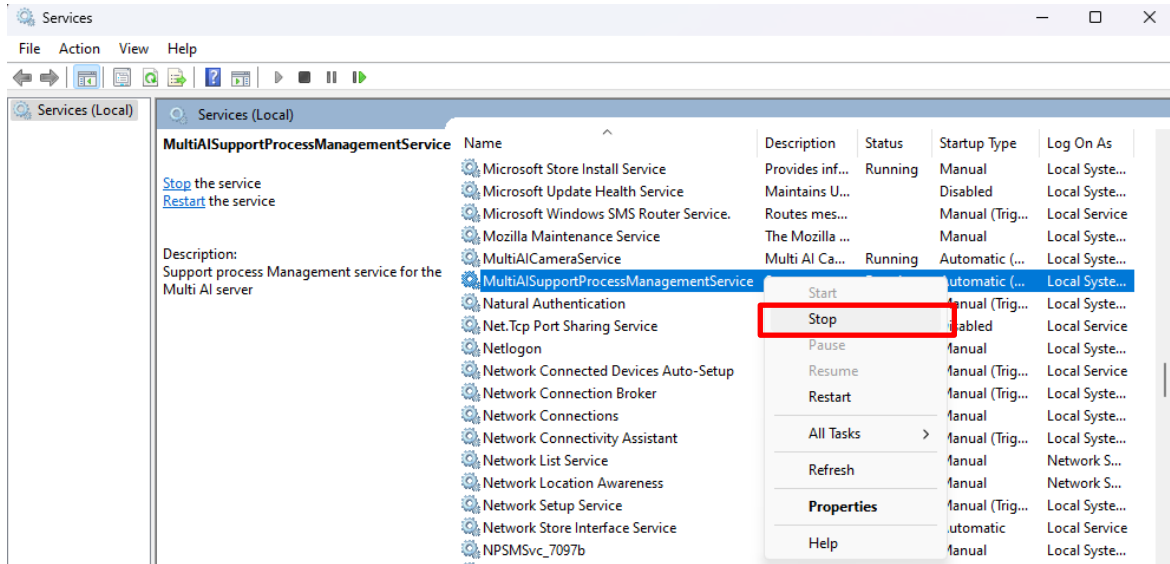
Search for Task Scheduler App in search box and run it. Right click and disable “AliveMonitoringProcess”.



## STEP2

Search for Services App in search box and run it.

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”

SQL server 2022

“C:¥Program Files¥Microsoft SQL Server¥MSSQL16.AISYSTEM¥MSSQL¥DATA”

## STEP4

Copy “C:¥MultiAI¥Image” folder to safe location.

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

Note)

- The MultiAI and Image path above are the default, if you changed the path in section 4.3.1 or 4.3.5.4, please replace the path.

## 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

In Services App, right click and run for "MultiAICameraService,"

"MultiAISupportProcessManagementService" and "SQL Server(AISYSTEM)," respectively.

## STEP7

In Task Scheduler App, right click and enable "AliveMonitoringProcess".

## 5.6.2. Restore process

### STEP1

Install i-PRO Active Guard Server in the restore environment with the same SQL instance, administrator username, and password settings and install path of i-PRO Active Guard server as in the backup environment.

Note)

- If you select "Use existing SQL Server instance" in database selection for installation, i-PRO Active Guard Server database and user must be deleted before install.  
For delete database and user, see 5.4.2.2.
- If you select "Network Server" of "Use existing SQL Server instance" in database selection for installation, Set the SQL server IP, TCP port, etc. to the same settings as the backup environment.

### STEP2

Search for Task Scheduler App in search box and run it. Right click and disable "AliveMonitoringProcess"

### STEP3

Search for Services App in search box and run it.

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

### STEP4

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"

SQL server 2022

"C:\Program Files\Microsoft SQL Server\MSSQL16.AISYSTEM\MSSQL\DATA"

## STEP5

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

Copy saved folder “Backup” to “C:¥MultiAI” and replace existing files.

Note)

- The MultiAI and Image path above are the default, if you changed the path in section 4.3.1 or 4.3.5.4, please replace the path.

## STEP6

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

## STEP7

In Services App, right click and run for “SQL Server(AISYSTEM).”

## STEP8

Execute “C:¥MultiAI¥tools¥restore\_user¥restore\_user.bat” as administrator.

\*The above path is the default. Please check the MultiAI path. See 4.3.1.

(restore\_user.bat)

```
@echo off
set SERVERNAME=localhost\AISYSTEM
sqlcmd -S %SERVERNAME% -i C:\MultiAI\tools\restore_user\restore_user.sql
IF %ERRORLEVEL% equ 0 GOTO OK
ECHO Failed|
GOTO END
:OK
ECHO Succeeded
:END
PAUSE
```

Note)

If you selected “Use an existing SQL Server instance” in the database selection during installation, open the batch file in Notepad and modify the following.

- For “Local Server”

(1) Line 2.

Change the “AISYSTEM” to the specified instance name.

If instance name is “MSSQLSERVER”, set to blank.

Ex.)

```
set SERVERNAME=localhost¥SAMPLEINSTANCE
```

- For "Network Server" and using SQL Server Browser

(1) Line 2.

Change the "localhost" to the specified SQL Server IP Address

Change the "AISYSTEM" to the specified instance name.

If instance name is "MSSQLSERVER", set to blank.

(2) Line 3.

Add "-U login id", "-P password", "-N" and "-C".

Login id and password should be set to the administrator and password of the SQL instance.

Ex.)

```
set SERVERNAME=192.168.0.100¥SAMPLEINSTANCE
```

```
sqlcmd -S %SERVERNAME% -i C:¥MultiAI¥tools¥restore_user¥restore_user.sql -U admin  
-P password -N -C
```

- For "Network Server" and not using SQL Server Browser

(1) Line 2.

Change the "localhost" to the specified SQL Server IP Address

Change "¥AISYSTEM" to a comma + the specified TCP port number.

(2) Line 3.

Add "-U login id", "-P password", "-N" and "-C".

Login id and password should be set to the administrator and password of the SQL instance.

Ex.)

```
set SERVERNAME=192.168.0.100,1435
```

```
sqlcmd -S %SERVERNAME% -i C:¥MultiAI¥tools¥restore_user¥restore_user.sql -U admin  
-P password -N -C
```

## STEP9

In Services App, right click and run for "MultiAICameraService,"  
"MultiAISupportProcessManagementService," respectively.

## STEP10

In Task Scheduler, right click and enable "AliveMonitoringProcess."

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

i-PRO Active Guard server location can be moved from VI 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.

Note)

- The MultiAI path above is the default, if you changed the path in section 4.3.1, please replace the path.

### STEP4

Search for Services App in search box and run it.

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 (4.3.8.2).

### 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.

Note)

- The MultiAI path above is the default, if you changed the path in section 4.3.1, please replace the path.

## 5.10. Change SQL Server administrator password

When you want to change password of SQL Server administrator(sa) account, you need to change on PC that i-PRO Active Guard server is installed.

### STEP1

Please use “SQL Server Management Studio (SSMS)” to change the passwords of the following account from the instance where the i-PRO Active Guard server is installed.

- Security – Logins
  - sa

### STEP2

Execute “C:¥MultiAI¥tools¥ChangeSQLServerPassword¥ChangeSQLServerPassword.exe” as administrator and set password.

Note)

- The MultiAI path above is the default, if you changed the path in section 4.3.1, please replace the path.

# 5.11. Upgrade edition of SQL Server

You can determine if you need non-Express Edition from 3.3.

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

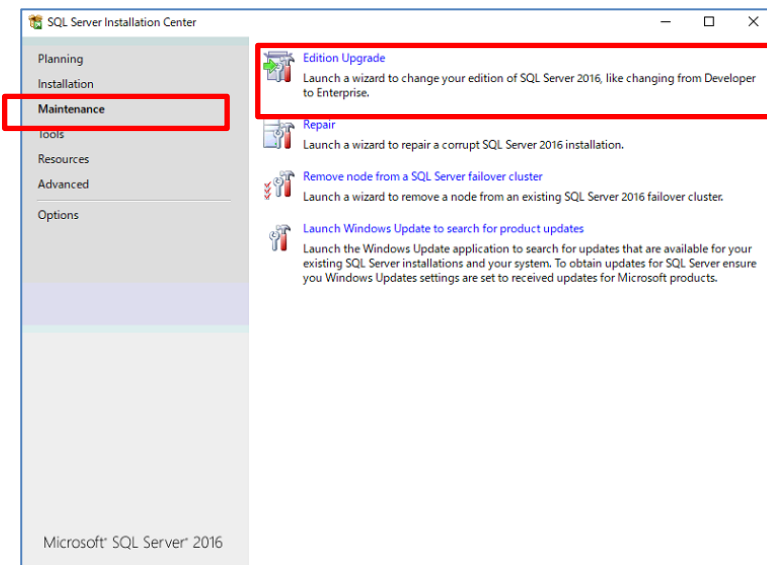
i-PRO Active Guard server software need to be installed in advance.

## STEP1

Start “setup.exe” from install media of SQL Server.

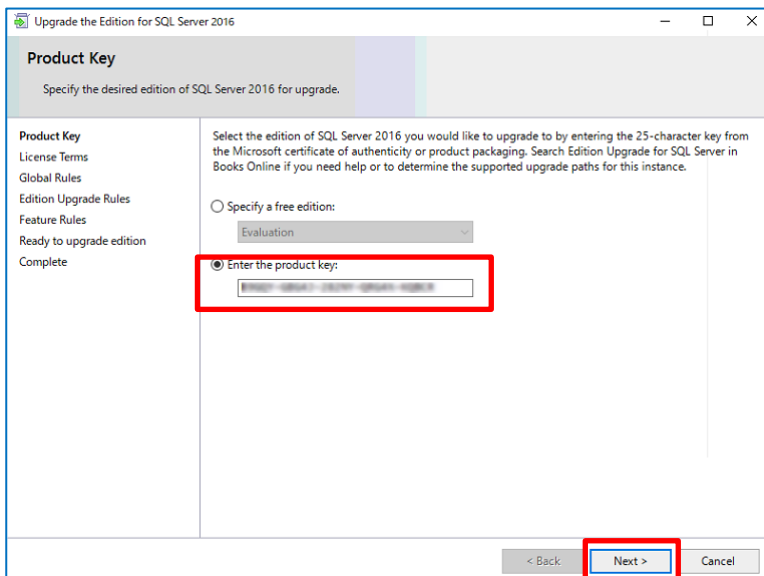
## STEP2

Select [Edition Upgrade] from Maintenance.



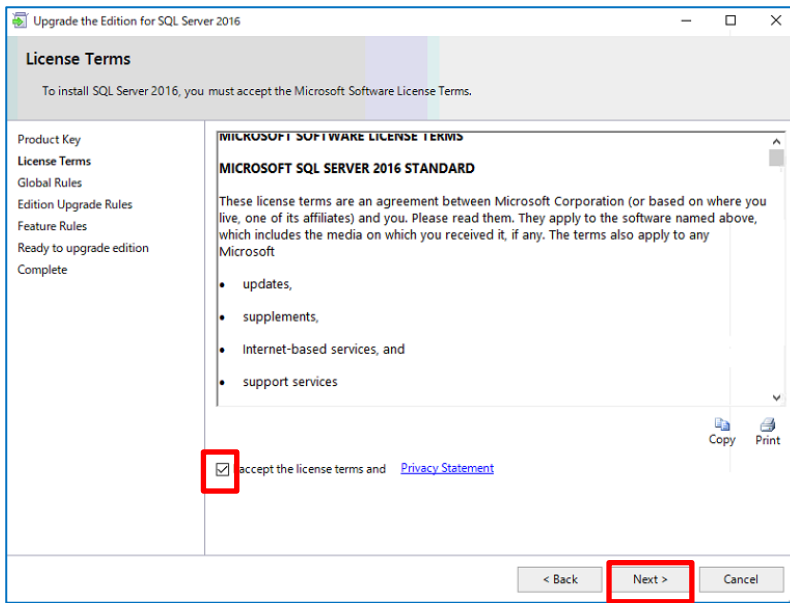
## STEP3

Confirm product key is shown and click [Next].



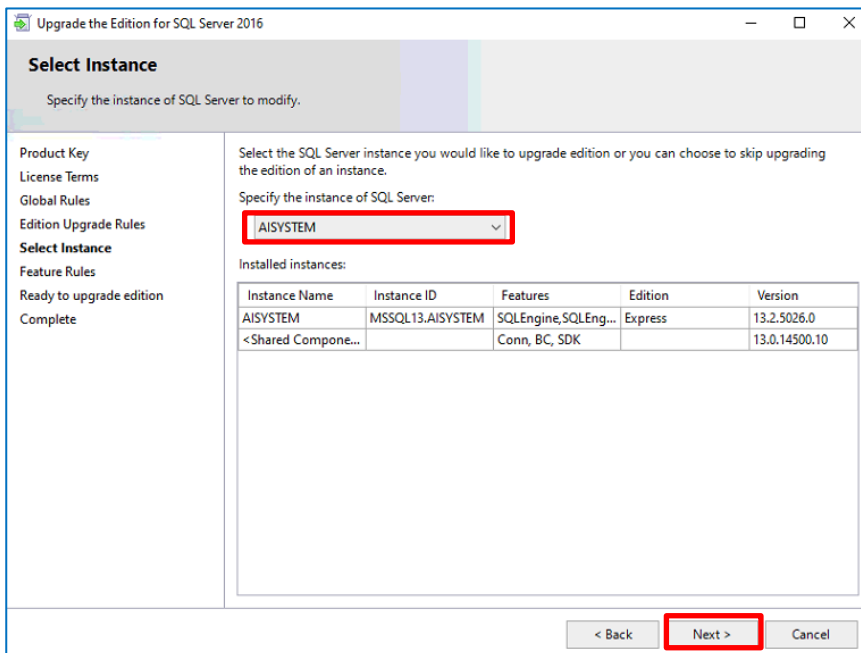
## STEP4

Check for license term and click [Next].



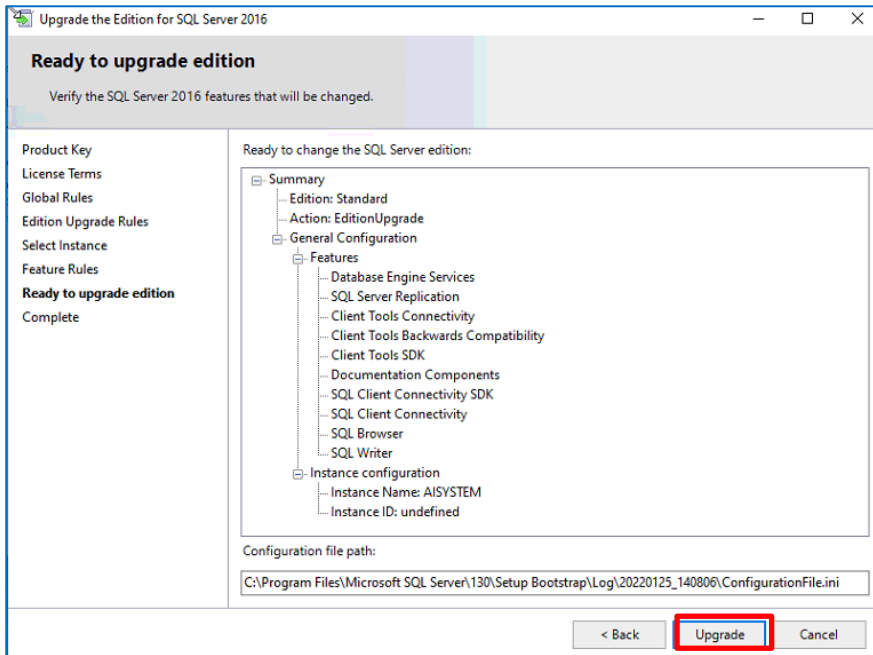
## STEP5

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



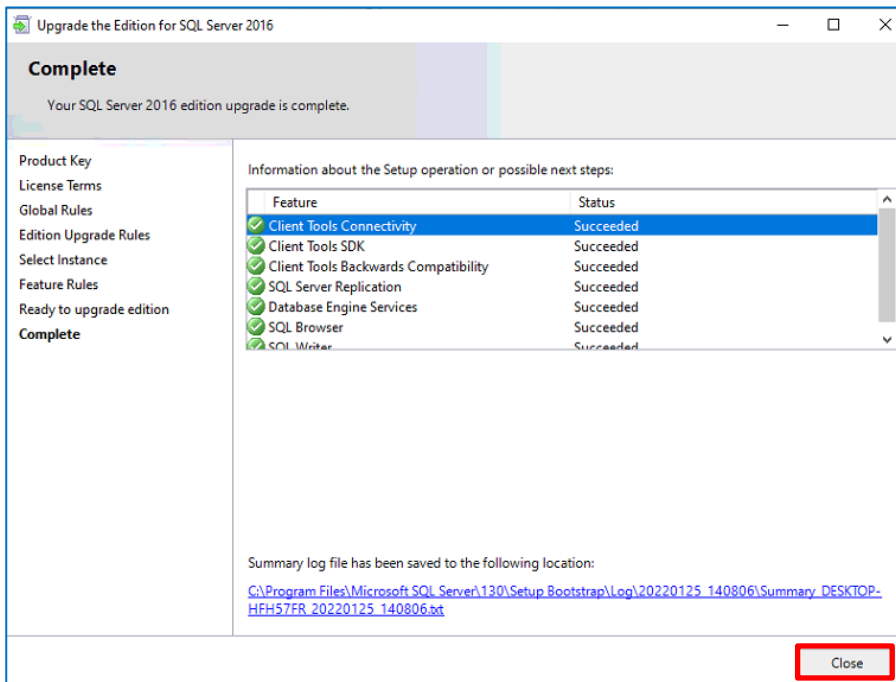
## STEP6

Click [Upgrade]



## STEP7

Click [Close]



## 5.12. Import/Export tool for Face Watchlist

This software is used when transferring Face Watchlist data to another i-PRO Active Guard server. You can obtain Face Watchlist data using the export function and register the obtained data to the server using the import function. Additionally, you can create a data file for importing.

**Important:**

- To use this tool, you need to register a camera with AI Face Detection to i-PRO Active Guard server in advance.

### STEP1

Execute “C:¥MultiAI¥tools¥ImportExport¥iAGImportExportTool.exe”.

Note)

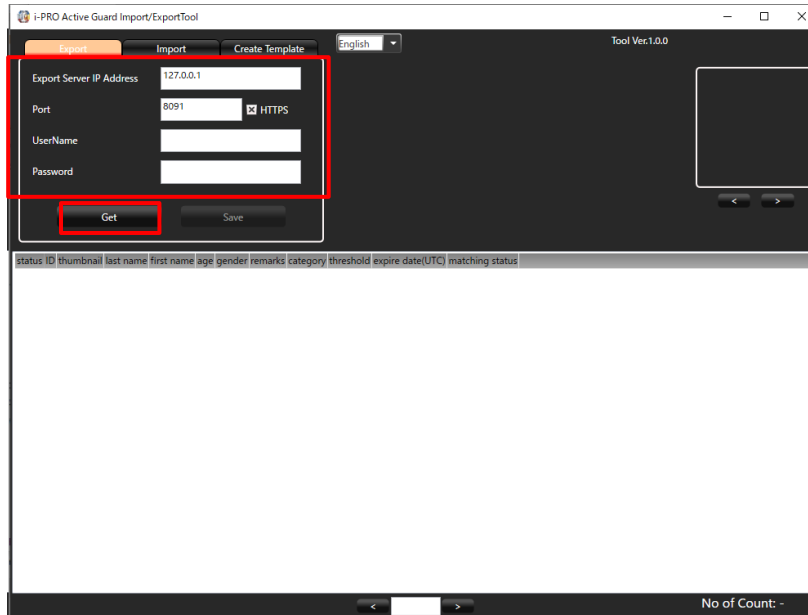
- The MultiAI path above is the default, if you changed the path in section 4.3.1, please replace the path.

Name	Date modified	Type	Size
Language	3/20/2025 5:05 PM	File folder	
A9EKM_SME_XT02.dll	3/18/2025 6:58 PM	Application exten...	58 KB
DEFAULT_PERSON.jpg	3/18/2025 6:58 PM	JPG File	2 KB
DynamicJson.dll	3/18/2025 6:58 PM	Application exten...	17 KB
faceprosdk.dll	3/18/2025 7:13 PM	Application exten...	643 KB
iAGImportExportTool.exe	3/19/2025 5:55 PM	Application	291 KB
iAGImportExportTool.exe.config	3/18/2025 7:21 PM	CONFIG File	4 KB
Mono.Security.dll	3/18/2025 6:58 PM	Application exten...	294 KB
Npgsql.dll	3/18/2025 6:58 PM	Application exten...	345 KB

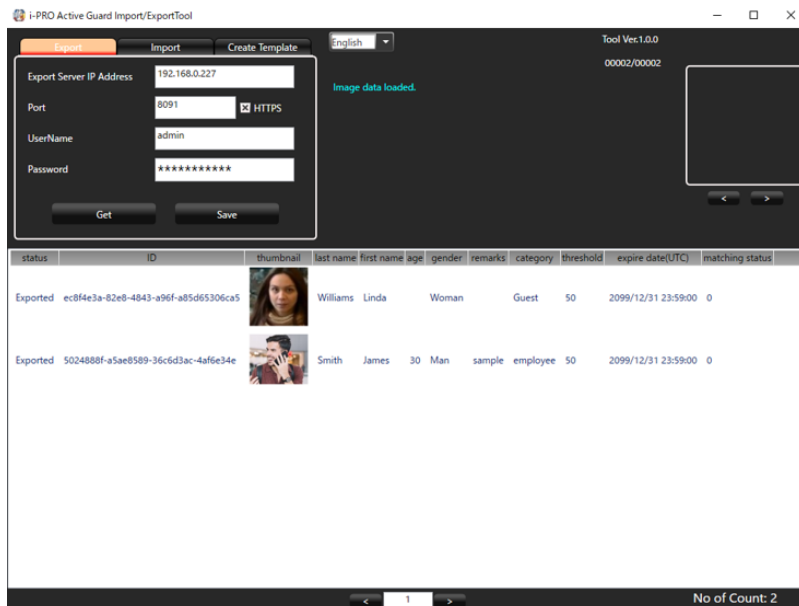
## 5.12.1. Export

### STEP1

Input i-PRO Active Guard server's information and click [Get] in Export tab.



Once the export is complete, the list of facial images will be displayed.



### STEP2

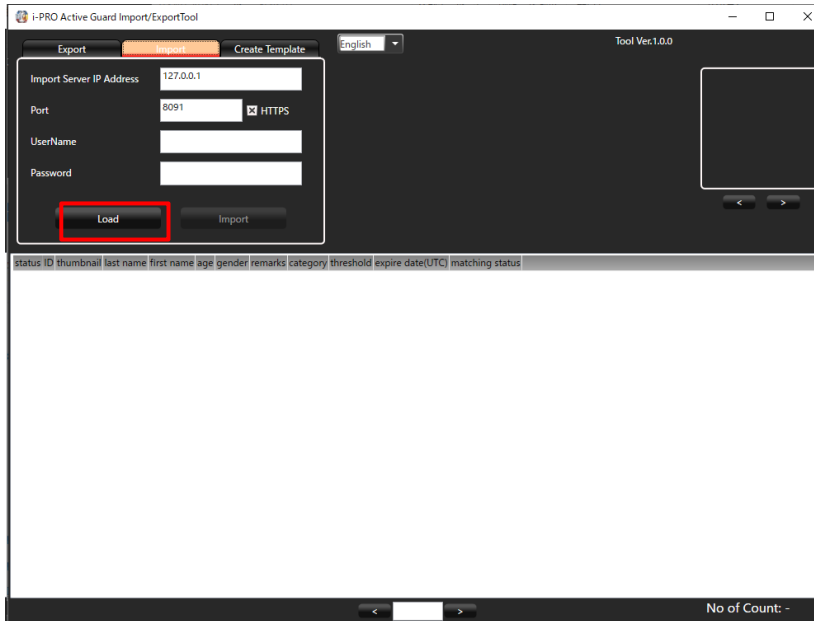
Click [Save].

Create an "MatchingData" folder in the specified folder and save the Image file and information file.

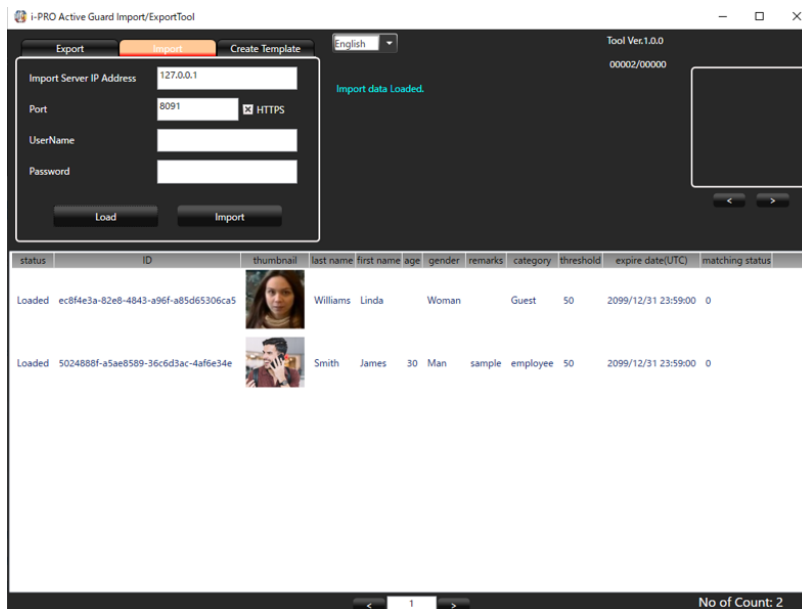
## 5.12.2. Import

### STEP 1

Click [Load] in the import tab and specify the folder “**MatchingData**” saved during export.



The saved data will be loaded.



## STEP2

Input i-PRO Active Guard server's information and click [Import].

Import Server IP Address: 192.168.0.227  
Port: 8091  HTTPS  
UserName: admin  
Password: \*\*\*\*\*

Import data Loaded.

status	ID	thumbnail	last name	first name	age	gender	remarks	category	threshold	expire date(UTC)	matching status
Loaded	ec8f4e3a-82e8-4843-a96f-a85d65306ca5		Williams	Linda		Woman		Guest	50	2099/12/31 23:59:00	0
Loaded	5024888f-a5ae8589-36c6d3ac-4af6e34e		Smith	James	30	Man	sample	employee	50	2099/12/31 23:59:00	0

No of Count: 2

During the import process, the "Importing" indicator will blink.  
Once the import is complete, the blinking will stop.

Note)

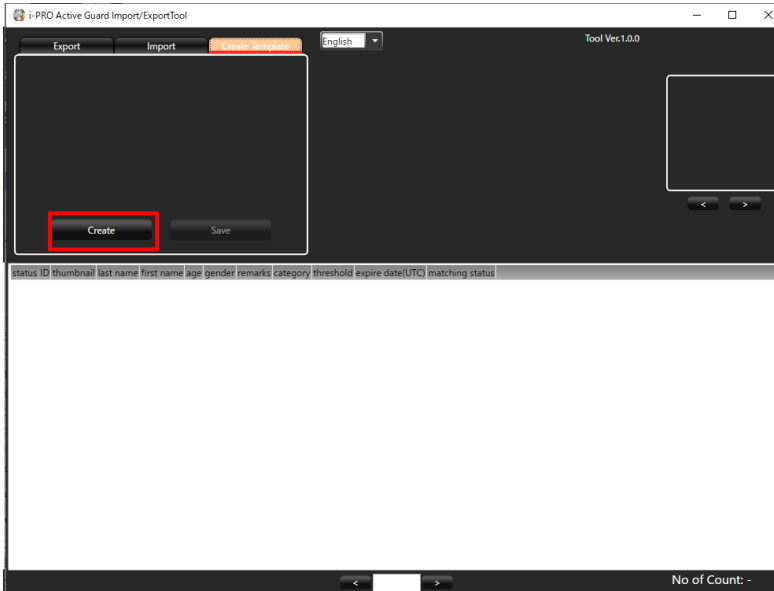
- It takes approximately 20 minutes to import 1,000 images.

## 5.12.3. Create Template

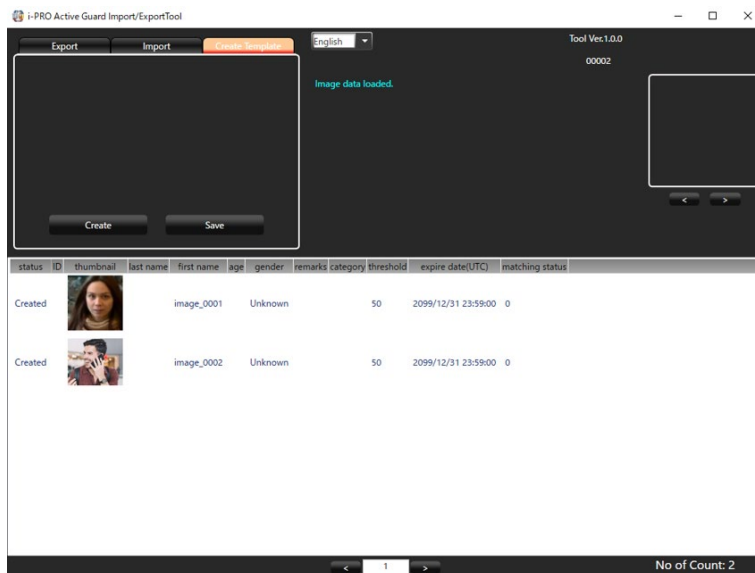
You can create a data file for importing.

### STEP1

Click [Create] in the “Create Template” tab and specify the folder where the face images are saved.



Once all the facial image data (in .jpg format) under the specified folder is retrieved, a list of face images will be displayed.



### STEP2

Click [Save].

Create an "MatchingData" folder in the specified folder and save the Image file and information file.

Created data can be registered to i-PRO Active Guard server using the import function.

## 5.12.4. CSV format

- File name: MatchingInfo.csv
- Encoding: UTF-8 with BOM
- The first line and second line don't edit.

Column name	Value
rt_alarm_matching_info_id	It must be unique value You can use empty when registering a new watchlist.
thumbnail_file_path	Image file path (*local path)
matching_status	0: Matching On 1: Matching Off
first_name	(Text)
last_name	(Text)
age	0-999
gender	0: Male 1: Female 2: Arbitrary
remarks	(Text)
threshold	1-100
matching_list_id	Set same value of "rt_alarm_matching_info_id"
img_id	0-9 When multiple face images are registered for the same watchlist. It can be unique value
category	(Text)
expire_date	YYYY-MM-DD HH:MM:SS(UTC) *If you want to set "Validity period" to unchecked, set the following value. "2099-12-31 23:59:00"
delete_type_flg	1: Delete registration 3: Disable matching

(Sample)

L1: Matching Info Import Export Data,100100

L2: "rt\_alarm\_matching\_info\_id","thumbnail\_file\_path","matching\_status","first\_name","last\_name","age","gender",  
"remarks","threshold","matching\_list\_id","img\_id","category","expire\_date","delete\_type\_flg"

L3: T0001,"C:¥img¥1.jpg",0,"John","Due",21,0,"Remarks text1",50,"T0001",0,Category1,"2099-12-31 23:59:00","3"

L4: T0002,"C:¥img¥2.jpg",0,"John","Smith",32,0,"Remarks text2",50,"T0002",0,Category2,"2099-12-31 23:59:00","3"

L5: T0002,"C:¥img¥3.jpg",0,"John","Smith",32,0,"Remarks text2",50,"T0002",1,Category2,"2099-12-31 23:59:00","3"

# 5.13. Calculation tool

This tool retrieves data from a PC that is running the i-PRO Active Guard Server and performs the following validations:

- Number of cameras and PC specifications
- SQL Server edition, datapoints per second
- Datapoints per second for free text search

Based on the current data, it is also possible to evaluate scenarios where the number of cameras, number of applications, or configuration settings are changed.

Tool path: "C:\MultiAI\tools\Calculation\iAGCalculationtool.exe".

Note)

- The MultiAI path above is the default, if you changed the path in section 4.3.1, please replace the path. Alternatively, you can search your Windows system for the tool's file name.

## STEP1 : Verify the CPU and Memory based on the number of cameras

PC Spec	CPU		Memory (GB)
	Model	Logical cores	
Current PC	Intel® Xeon® Silver 4208 CPU @2.10 GHz	16	32

Number of cameras	
Current	20
Planned Additions	0
Total (Current + Additions)	20

## STEP2 : Verify the SQL Server edition and configuration retrieved from the SQL data.

Server Information		SQL Server Edition		Settings of Estimated data points of detections (per sec)			
Current PC		Express Edition		100			

Detection Information		Face	People	Vehicle	License plate	Code	Container
Data points in a day	9/26/2025 15	583	23532	7872	0	0	0
Maximum data points in an hour		13	2510	2	0	0	0

Number of AI function and retention period		Face	People	Vehicle	License plate	Code	Container
Current	Number of AI functions	10	20	20	10	10	10
	Retention period (day)	31	31	31	31	31	31
Planned	Number of AI functions	10	20	20	10	10	10
	Retention period (day)	31	31	31	31	31	31

Estimated DB usage		Total Value [GB]
Current		2.49
Planned		2.49

Maximum data points per second		Value
Current		1
Planned		1

Note)

Calculates the database usage and Data point from the specified one-day data.

To change the target date, please select a different date from the calendar.

\*The calendar is shared between STEP 2 and STEP 3.

**STEP3 : Verify the Free Text Search configuration retrieved from the SQL data.**

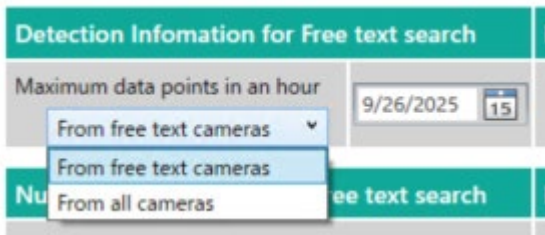
Detection Information for Free text search		People	Vehicle
Max. points in an hour per camera	10/5/2025 15	3600	3600
From free text cameras			
Number of AI function for free text search		People	Vehicle
Current		5	5
Planned		5	5
Maximum data points per second		Value	
Current		0	
Planned		10	

\*The calendar is shared between STEP 2 and STEP 3.

Note)

Calculates the datapoints for cameras used in Free Text Search.

If Free Text Search is not configured, selecting "From all cameras" in the combo box will estimate the datapoints using the average value of all cameras.



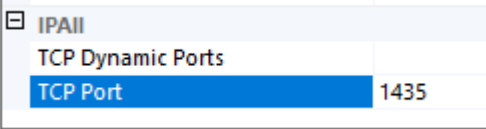
## 6. Troubleshooting

### 6.1. Trouble shooting for Installation and Setup

Symptom	Cause and solution	Refer
“New version or same version is already installed.” message is displayed but [i-PRO Active Guard Server] does not exist.	Please check if [Multi AI Server] exists in the Programs and Features window. If it exists, please uninstall it.	5.4.2
It does not proceed from the “Now setting for middleware...” screen.	Please close the installer and try installing again.	4.3.1
Failed to install SQL server	There may be some data that was used in the past. If possible, uninstall programs related to SQL Server and i-PRO Active Guard Server and delete related folders.	5.4.2 5.4.2.1 5.4.2.2
	Check if the file path length of file path of install package is less than 119 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. <a href="https://docs.microsoft.com/en-us/troubleshoot/sql/install/error-set-up-update-instances">https://docs.microsoft.com/en-us/troubleshoot/sql/install/error-set-up-update-instances</a>	
	If the installation fails even after restarting the PC, please execute “¥03_SQL¥SQLEXPRADV_x64_ENU ¥1033_ENU_LP¥x64¥Setup¥SQLSUPPORT.MSI”. And then, execute “MultiAIStartup.exe” again.	-

Symptom	Cause and solution	Refer
Screen transitions in the installer may take some time.	Any SQL Server service may not be running on the destination PC. If possible, please start SQL Server from Services or wait for a while until the screen transition.	
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 "http://<ip>:8092"? "https://<ip>:8092" is correct. When you set another port number when installation or you changed after installation, enter the port number.	4.3.2.2
	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 existing on PC that i-PRO Active Guard server is installed.</p> <p>Search for Services App in search box and run it.</p> <ul style="list-style-type: none"> <li>- MultiAICameraService</li> <li>- MultiAISupportProcessManagementService</li> </ul> <p>If these services do not exist, please perform the following steps.</p> <ol style="list-style-type: none"> <li>1. Uninstall i-PRO Active Guard server.</li> <li>2. Delete SQL instances or database related to i-PRO Active Guard server.</li> <li>3. Confirm related services does not exist.</li> </ol> <p>If related services remain, start command prompt with administrator privileges and delete services with following command.</p> <pre>sc delete MultiAICameraService</pre> <pre>sc delete SupportProcessManagementService</pre> <ol style="list-style-type: none"> <li>4. Reinstall i-PRO Active Guard server.</li> </ol>	<p>5.4.2</p> <p>5.4.2.1</p> <p>5.4.2.2</p> <p>4.3.1</p>
	<p>Please confirm related service is running on PC that i-PRO Active Guard server is installed.</p> <p>Search for Services App in search box and run it.</p> <ul style="list-style-type: none"> <li>- MultiAICameraService</li> <li>- MultiAISupportProcessManagementService</li> <li>- SQL Server (instance name)</li> </ul> <p>If stopped, right click and run.</p>	<p>5.6.1</p>
Cannot log in to i-PRO Active Guard configuration	<p>If you forget the administrator account, reset account from PC that i-PRO Active Guard server is installed.</p>	<p>5.9</p>
	<p>Please try restarting the PC that i-PRO Active Guard server is installed.</p>	

Symptom	Cause and solution	Refer
	<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"</p> <p>2.SQL Server Network Configuration – Protocols for (instance name) - TCP/IP – IP Addresses tab – IPAll – TCP Port=1435.</p> <p>If 1435 is already used, set another empty port and uninstall i-PRO Active Guard server and install again.</p> 	<p>4.3.1</p> <p>5.4.2</p>
Cannot register VMS.	<p>Check if IP address, port, protocol, and credentials are correct.</p>	<p>4.3.2.2</p> <p>4.2.2.2</p>
	<p>Supported version of VI server is 7.8.3 or later.</p> <p>If you use VI 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>	<p>2.2</p>
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 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 is larger than about 1hour, camera list cannot be retrieved from [Camera(s) from VMS]</p>	-
	<p>Check if "Digest" is used for authentication on camera side. ([Settings] – [User mng.] - [User auth.])</p>	-
	<p>Please try updating the camera's firmware and AI application firmware</p>	-

Symptom	Cause and solution	Refer
	<p>When the camera is registered to VI 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.</p> <ol style="list-style-type: none"> <li>1.Register camera to VI server as unicast</li> <li>2.Register camera to i-PRO Active Guard server</li> <li>3.Change to "Multicast RTP" on VI.</li> </ol>	
Cannot register cameras due to communication error	<p>Check the connection with the target camera.</p> <p>Errors may occur if the camera or the network path is experiencing high load.</p> <p>After confirming the connection status, re-register the camera as needed.</p>	
Cannot connect from Extension to i-PRO Active Guard server.	<p>Check if IP address, port, protocol, and credentials are correct. Port and credentials can be changed from i-PRO Active Guard configuration.</p>	4.3.5.2 4.4.2
	<p>Please confirm related service exists on PC that i-PRO Active Guard server is installed.</p> <p>Search for Services App in search box and run it.</p> <ul style="list-style-type: none"> <li>- MultiAICameraService</li> <li>- MultiAISupportProcessManagementService</li> </ul> <p>If these services do not exist, please perform the following steps.</p> <ol style="list-style-type: none"> <li>1. Uninstall i-PRO Active Guard server.</li> <li>2. Delete SQL instances or database related to i-PRO Active Guard server.</li> <li>3. Confirm related services do not exist. <ul style="list-style-type: none"> <li>If related services remain, start command prompt with administrator privileges and delete services with following command.</li> <li>sc delete MultiAICameraService</li> <li>sc delete SupportProcessManagementService</li> </ul> </li> <li>4. Reinstall i-PRO Active Guard server.</li> </ol>	5.4.2 5.4.2.1 5.4.2.2 4.3.1

Symptom	Cause and solution	Refer
Face, People, Vehicle, or License plate, Code, Container images cannot be searched from Extension (camera is not shown for camera list).	<p>Camera registration to i-PRO Active Guard server should be done after registering camera to VI server.</p> <p>When you re-register the camera to VI 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.)</p>	5.2.1 5.1.2
Face, People, Vehicle or License plate, Code, Container images cannot be searched from Extension (the number of search results is 0).	<p>Receiving status from each camera can be confirmed from i-PRO Active Guard configuration.</p> <p>Check network connection between camera and i-PRO Active Guard server, last received time, last diagnosis time.</p> <p>If the result is not expected, check if schedule setting on camera side for extension software is on.</p> <p>note) License plate detection, Code detection and Container detection is not support “last diagnosis time”.</p>	4.3.8.1
	<p>Check process status of i-PRO Active Guard server.</p> <p>If some process is stopped, restart the process.</p>	4.3.8.2
	<p>Check if schedule setting on camera side for extension software is on.</p>	-
	<p>Configuration issues in a multiple network environment</p> <p>Check if the camera is connected to a network that is not local to the server.</p>	-
	<p>Firewall configuration issues.</p> <p>Check if i-PRO Active Guard server’s program are listed on “Allowed apps and features” for firewall settings.</p>	-
Camera name, app name, etc. Cannot displayed correctly in Extension	<p>Check if camera or app settings have been changed.</p> <p>If there are any changes, please update i-PRO Active Guard server</p>	5.3
Playback time is incorrect.	<p>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.</p>	-

Symptom	Cause and solution	Refer
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 an alarm from VI 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 4.3.8.4)

Symptom	Error code	Cause and solution
Server process is stopped on i-PRO Active Guard configuration	514 - 517	Services related to i-PRO Active Guard server does not exist. Please install i-PRO Active Guard server again
	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 the process stops again, download logs (Refer to 4.3.8.5) and contact the system administrator.
Camera disconnects	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 problems, 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, License plate, Code or Container Images cannot be searched from Extension (the number of search results 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 etc. 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.</p> <p>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 have 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 detections.</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

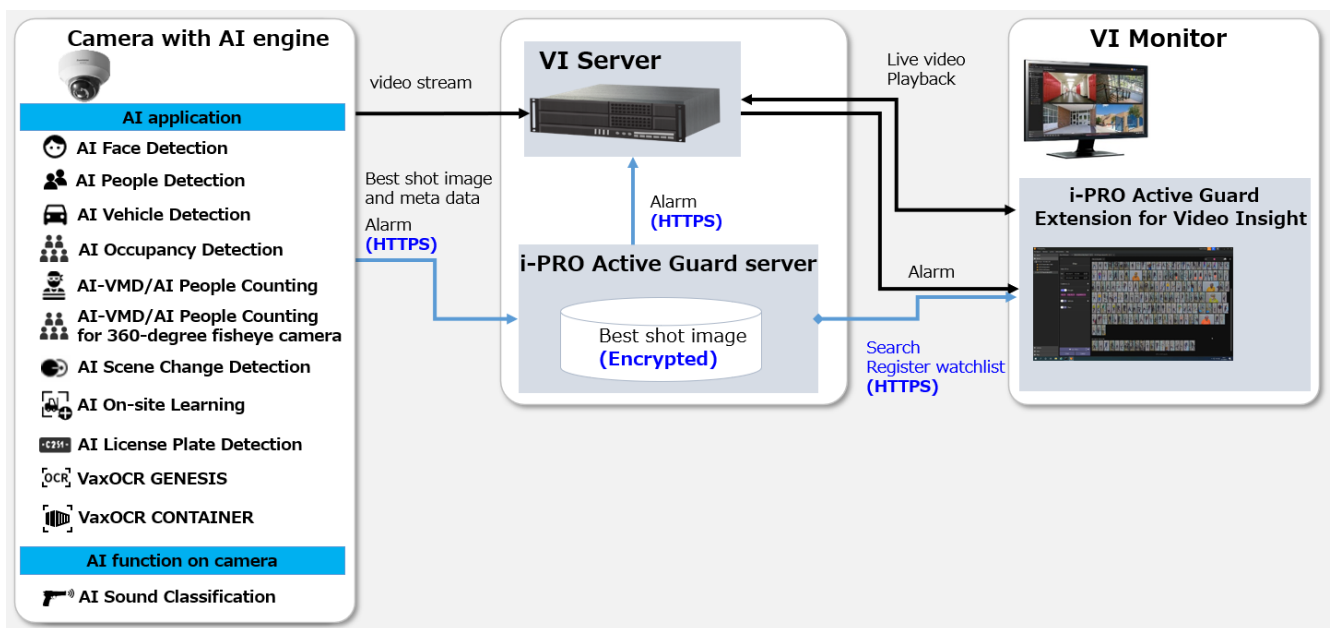
To ensure encrypted communications within critical environments, the secure system has been created as an additional security layer for the application. This document describes how to enable and configure secure system.

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

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

The communication between i-PRO Active Guard server and Extension 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 Extension

### 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 Extension'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 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 Extension. 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 3<sup>rd</sup> 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 3<sup>rd</sup> 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 3<sup>rd</sup> 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 (Extension) 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.

#### STEP 1

To register the extension software, edit the configuration file using one of the following two methods:





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

Note)

- The MultiAI path above is the default, if you changed the path in section 4.3.1, please replace the path.

- (2) Web browser access

Click the Information (i) button located in the Function section on either Home or Register Cameras screen.

<input type="checkbox"/>	IP address	Model	Camera name	Function 	Free text search 	HTTP(S) port	SSL
1 <input type="checkbox"/>	192.168.0.51	WV-U25351-V3L	192.168.0.51 - i-PRO - U25351-V3L			80	Off
2 <input type="checkbox"/>	192.168.0.92	WV-S85402-V2L	192.168.0.92 - i-PRO - S85402-V2L - S...			80	Off

Click "Edit the file to use 3rd party app event".

**Refresh**  
Select the cameras which is added/deleted/updated AI applications, and update AI application information with refresh button.

If update is successful, the selected checkbox will be cleared.  
If update fails, error message will be displayed. Check the error details and try again.  
(For example, network errors, version compatibility, etc.)

\*Only AI application information can be updated using the refresh button.  
If you need to update camera name and etc., use "Add devices" button in the upper right

**AI function icon**

- :AI Face detection
- :AI People detection
- :AI Vehicle detection
- :AI Video motion detection
- :AI Sound detection
- :AI Scene change detection
- :People counting/Occupancy(\*1)
- :Vehicle counting
- :On-site learning object counting
- :Extension app(\*2)
- :License plate detection
- :Code detection
- :Container detection

\*1:The available functions differ depending on the installed application.

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

\*2:Please set the name of the app and event in advance. [Edit the file to use 3rd party app event](#)

OK

## STEP2

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.

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.)

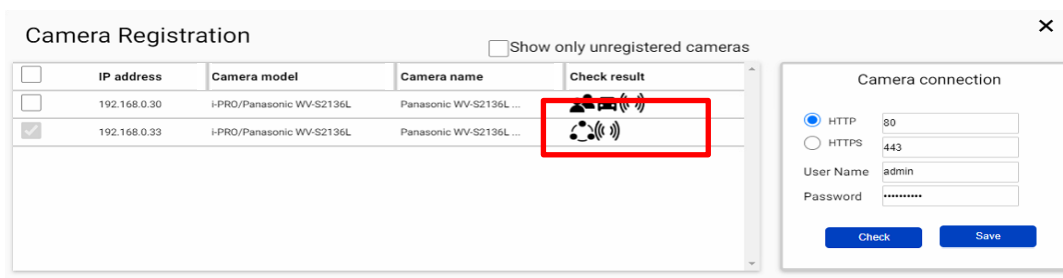
lpr\_application\_name = " SampleApplication "


\* 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".


### STEP3

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



When the 3<sup>rd</sup> 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.

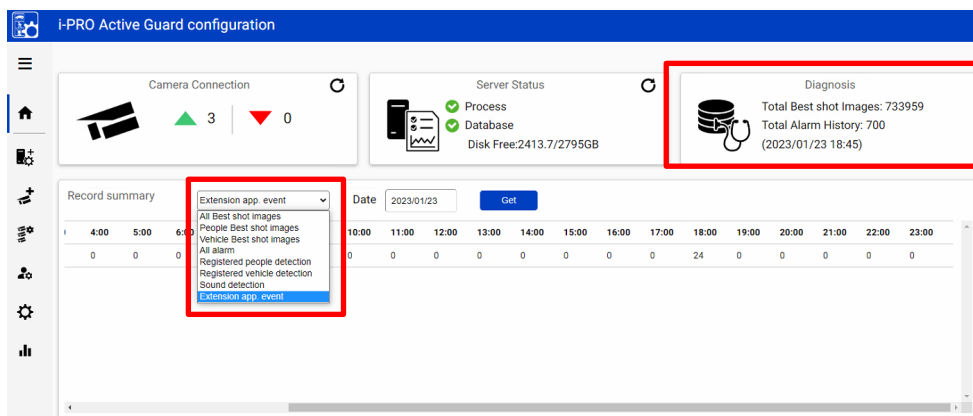
Note)

For LPR app is checked, icon  will be shown.

### STEP4

Check if an event has occurred (Optional).

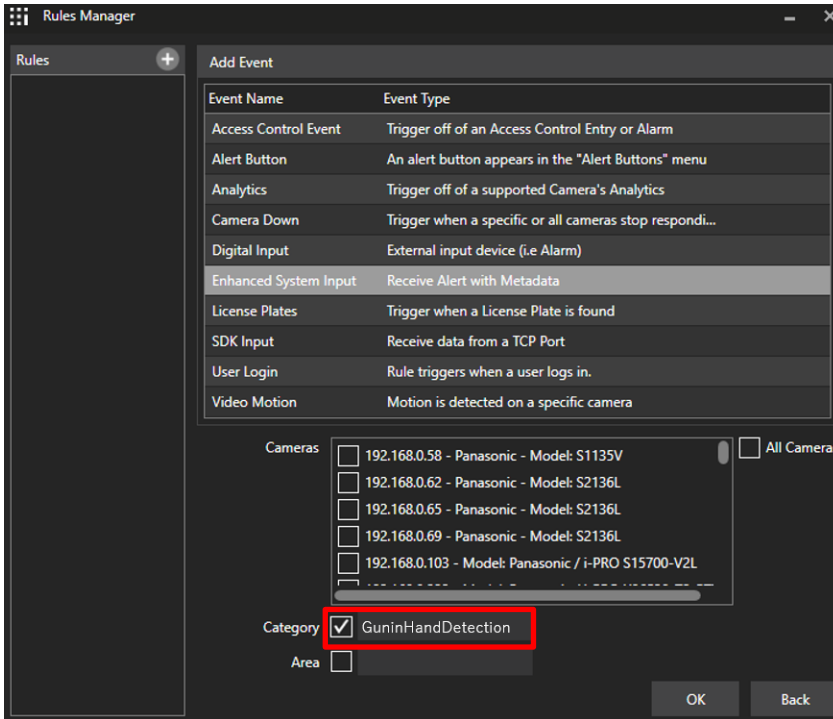
[Extension app. event] can be selected to confirm the number of detections. (Refer to 4.3.8.3)



\* 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)

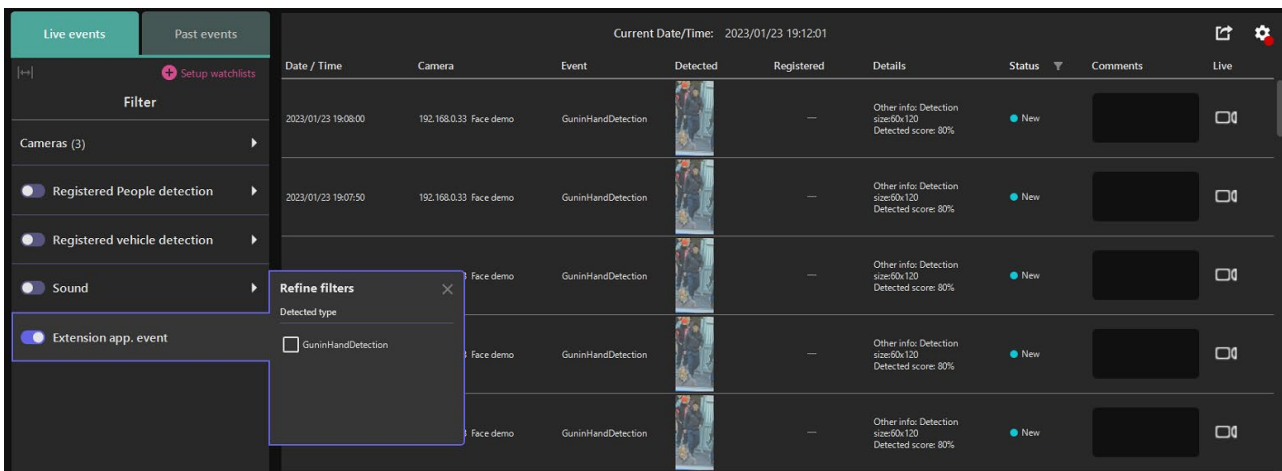
Similar to the procedure described in 4.7, 3<sup>rd</sup> party extension software event can be used as [Event] By enabling [Category] with the event name.



### 7.3.4. Check

[i-PRO Active Guard Event] screen on VI Monitor 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 cameras	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 100)
	Number of clients	No limitation (depending on limitation of VMS)
	Number of Recording server	12 VI servers
	Number of i-PRO Active Guard server per a client	No limitation (Depending on the capability of whole system)
Supported AI applications	For Extension	AI-VMD / AI Sound Classification /AI Face Detection / AI People Detection / AI Vehicle Detection /AI Scene change detection / AI License Plate Detection / VaxOCR GENESIS / VaxOCR CONTAINER
	For dashboard	AI Face Detection, AI People Detection, AI Vehicle Detection, AI-VMD/AI People Counting for 360-degree fisheye camera, AI-VMD, On-site Learning, AI Occupancy detection, AI License Plate Detection.
Store	Retention period	Max. 31 days limitation for face, people, vehicle, license plate, code or container data (92 days for count/heatmap/statistics). * Max. 397 days (732 days for count/heatmap/statistics) by upgrading SQL Server edition or higher.
Post Search	Filter	People, Vehicle, LPR (attribute, date & time, camera, moving direction) OCR, Container (attribute, date & time, camera) 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 date, Ascending date, Similarity (Face), Only high Relevance (People and Vehicle)

Alarm	Watch list alarm	<p>Up to 30,000 faces, up to 12 people attributes, up to 12 vehicle attributes.</p> <p>Up to 12 LPR attributes or license plates group.</p> <p>Up to 12 OCR group.</p> <p>Up to 12 Container attributes or Container group.</p> <p>There is no limitation to the number of license plates, OCR code, container code and license plate group, OCR group, container group (*depending on the system design).</p>
	Detection alarm	<p>AI Sound Classification (Gunshot / Yell / Vehicle horn / Glass break)</p> <p>AI-VMD (Intruder / Loitering / Direction / Line cross)</p> <p>All License plate, all OCR code, all Container code, VCA, Access Control / AI Scene change detection</p>
	Related function	<p>Show alarm on real-time, Alarm search, VMS's Rules configuration, Map overlay, Notification to mobile app, Manage alarm status</p>
Playback/ Export	Playback	Playback video around the time of the bestshot 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	<p>People counting, occupancy statistics and heatmap when using AI-VMD/AI People Counting for 360-degree fisheye camera.</p> <p>People counting and vehicle counting when using AI-VMD.</p> <p>People counting and occupancy statistics when using AI Occupancy Detection.</p> <p>On-site learning object counting when using AI-VMD with On-site Learning application.</p> <p>Data update interval is minimum 5 seconds for people/ vehicle/ On-site learning object counting and 1 min for heat map/ LPR Counting.</p> <p>Age and gender statistics when using AI Face Detection. Data update interval is minimum 1 min.</p> <p>People attribute statistics when using AI People Detection. Data update interval is minimum 1 min.</p>

		<p>Vehicle attribute statistics when using AI Vehicle Detection. Data update interval is minimum 1 min.</p>
	<p>Customize</p>	<p>Contents, display size, location for each chart. 3 Layouts per user can be saved and 24 users can be registered. (Up to 4 users 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</p>

# 7.5. Camera Selection

Please select a camera for use with this software by checking the "AI function - Active Guard" in the Product Selector, and then choosing a camera according to the desired features.

■ product selector

<https://i-pro.com/selector/product>

The screenshot shows the i-PRO Product Selector interface. On the left, a sidebar contains a 'Filter' section with a 'Reset' button. Under 'Basic Features', there are several categories: 'Camera Functions' (with a plus icon), 'AI functions' (highlighted with a red box), 'AI Camera Extension Software', and 'Server Application'. The 'AI functions' section lists various features, with 'AI Face Detection' checked. The 'Server Application' section has 'Active Guard' checked (also highlighted with a red box). The main content area shows a 'Selected' filter with 'Active Guard' and 'AI Face Detection' selected. Below this, there are buttons for 'CSV Download', 'Copy to clipboard', and 'Shared link'. A 'Sort by' dropdown menu is visible, with a tooltip that says 'Download the currently displayed product list as a CSV format file.' The main area displays a grid of camera models, each with a checkbox, a product image, a description, and 'Web' and 'Accessory' buttons. The models shown are: WV-X86531-Z2, WV-X86531-Z2-1, WV-X86530-Z2, WV-X86530-Z2-1, WV-X67711-Z3L3, WV-X67710-Z3L3, WV-X67710-Z3L1, WV-X67710-Z3-3, WV-X67710-Z3-1, and WV-X67311-Z4L3.

## **7.6. Cautions when disposing of or transferring PCs**

When disposing of or transferring a PC used with the i-PRO Active Guard system, be sure to follow the uninstallation procedure, see 5.4.