Setup Instructions

i-PRO Active Guard for XProtect

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1. Preface

1.1. Limitation of liability

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- Intel, Intel Core and Xeon are trademarks of Intel Corporation or its subsidiaries in the U.S. and/or other countries.
- Other names of companies and products contained in these operating instructions may be trademarks or registered trademarks of their respective owners.

1.4. Abbreviations

These are descriptions of the basic terms used in these operating instructions.
Microsoft® Windows® are described as Windows.

1.5. Disclaimer of warranty

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

(1) ANY DAMAGE AND LOSS, INCLUDING WITHOUT LIMITATION, DIRECT OR INDIRECT, SPECIAL,CONSEQUENTIAL OR EXEMPLARY, ARISING OUT OF OR RELATING TO THE PRODUCT.
(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 user name and password set by using user authentication.

- After the product is accessed by the administrator, make sure to close the web browser.

- Change the administrator password periodically. Keep the authentication information (your username and password) in a safe place free from public view.

- Apply measures such as user authentication to protect your network against leakage or theft of information, including image data, authentication information (user names and passwords), alarm mail information and FTP server information.

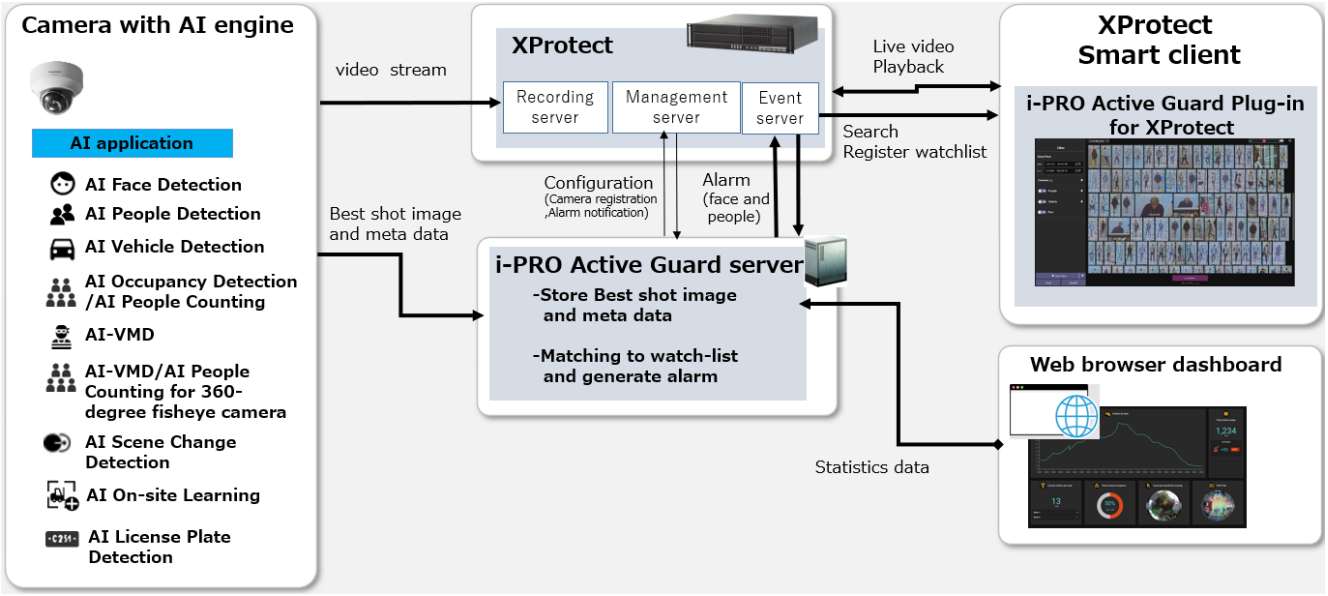
- Use a password that has never been used to protect your network from information leakage or theft.

1.8. Precaution for use

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

2. Introduction to i-PRO Active Guard

2.1. System overview



AI application or AI function on cameras transmit video stream to XProtect 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 or LPR is matched to watchlist. XProtect Management server and XProtect Event server should be installed in the same PC.

i-PRO Active Guard Plug-in for XProtect (hereinafter referred to as “Plug-in”) which is the plug-in software for XProtect Smart Client can search Best shot images, register watchlist, show live video, recorded video.

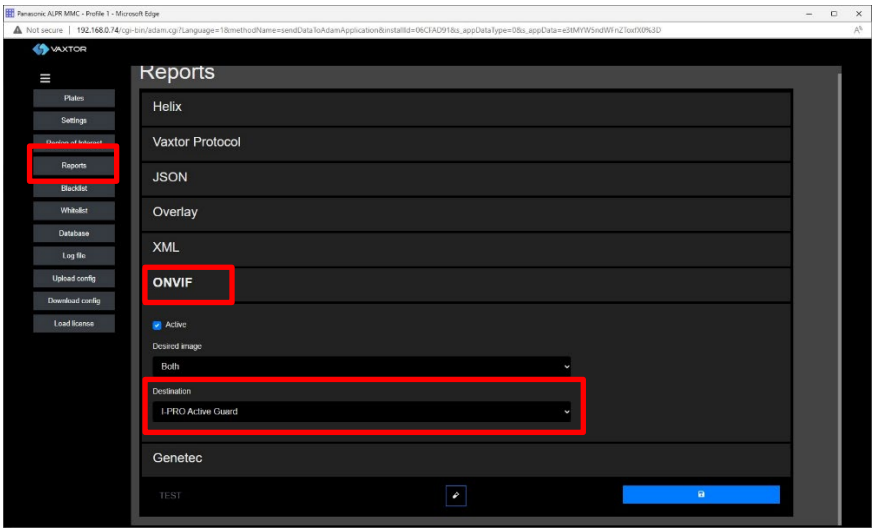
i-PRO Active Guard Plug-in for XProtect is developed by ORBNET SYSTEM LTD. Please refer to their manual about plugin installation and how to use.
https://www.milestonesys.com/technology-partner-finder/i-pro--co.-ltd/i-pro-active-guard-plug-in-for-xprotect/
By visualizing statistics data from AI application on the web browser, it can also be used for business intelligence.

2.2. Software components and supported version

Camera's AI function

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

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



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

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

For integration with 3rd party extension software, refer to 7.2.

Camera's firmware

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

Please also check supported camera models on VMS.

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

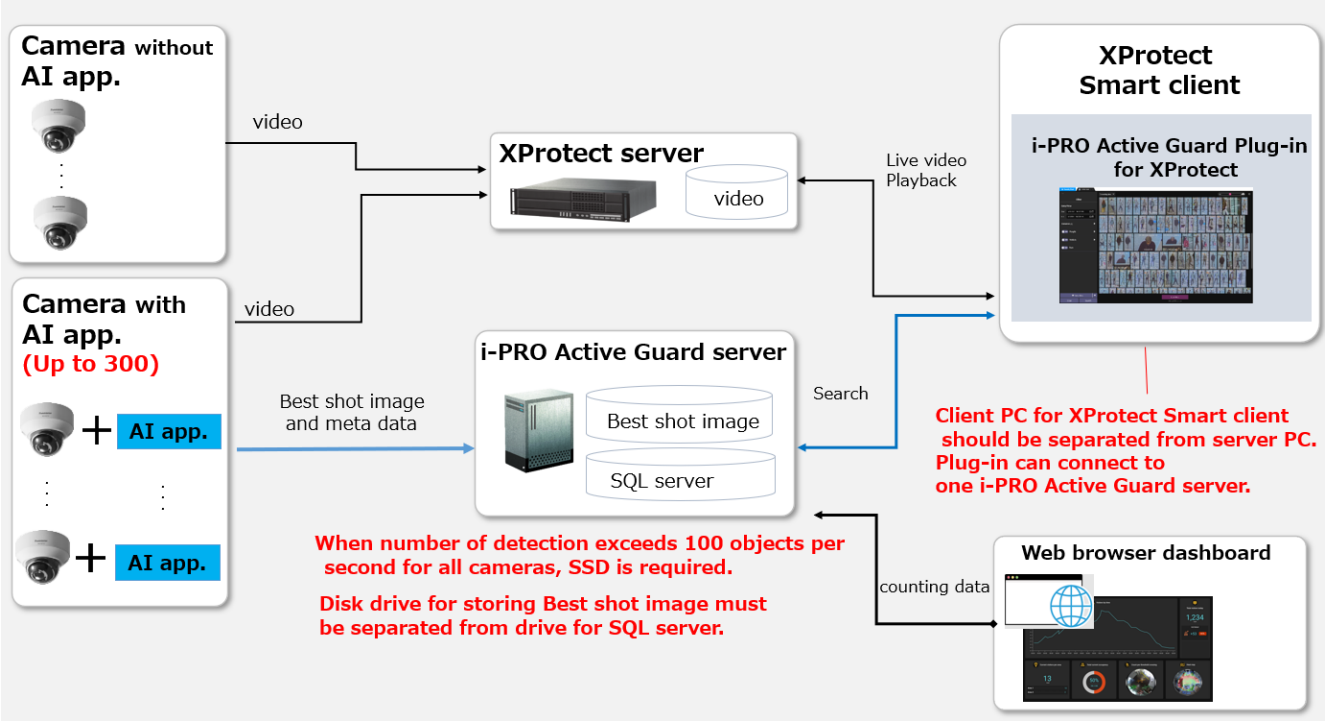
Please see https://i-pro.com/global/en/surveillance/training-support/support/technical-information<Control No:C0103> for more information.

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

Software	Version
Milestone XProtect	2022R1 or later
i-PRO Active Guard server	V1.5.0 or later *V1.3.2 and V1.4.0 can be used with limited function.
i-PRO Active Guard Plug-in for XProtect *Developed by ORBNET SYSTEM LTD.	V1.0.0 or later

3. System design

3.1. System architecture



(1) The number of cameras with AI engine is up to 300.
Camera with AI Face Detection is up to 60.

(2) 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.

(3) Client PC should be separated from server PC. Plug-in can connect to one i-PRO Active Guard server.

3.2. System requirement

3.2.1 System requirement for i-PRO Active Guard server

Hardware requirement

	Requirement
Up to 100 cameras	• Intel® Core™ i7-9700 (4.9 GHz, 8 core 8 thread) or better • 32 GB of RAM or more • 64 bit operating system Microsoft® Windows 10 Pro Microsoft® Windows 10 Enterprise Microsoft® Windows 10 Education Microsoft® Windows 10 Pro Education Microsoft® Windows 10 IoT Enterprise * Version 2004 or later Microsoft® Windows 11 Pro Microsoft® Windows 11 Enterprise Microsoft® Windows 11 Education Microsoft® Windows 11 Pro Education Microsoft® Windows 11 IoT Enterprise Microsoft® Windows Server 2016 Standard Microsoft® Windows Server 2019 Standard Microsoft® Windows Server 2022 Standard Microsoft® Windows Server 2016 Datacenter Microsoft® Windows Server 2019 Datacenter Microsoft® Windows Server 2022 Datacenter • GbE network interface card
Up to 300 cameras	• Intel® Xeon® Silver 4208 (2.1 GHz, 8 core 16 thread) or better • 32 GB of RAM or more • 64 bit operating system Microsoft® Windows Server 2016 Standard Microsoft® Windows Server 2019 Standard Microsoft® Windows Server 2022 Standard Microsoft® Windows Server 2016 Datacenter Microsoft® Windows Server 2019 Datacenter Microsoft® Windows Server 2022 Datacenter • GbE network interface card

Common software requirement

Category	Supported software
Database Engines	• SQL server 2014/2016/2019/2022 Express/Standard Edition The following SQL server is installed when new installing. - i-PRO Active Guard server version 1.0.0 to 1.6.2 SQL server 2016 Express Edition. - i-PRO Active Guard server version 1.7.0 or later SQL server 2019 Express Edition. For update i-PRO Active Guard server, SQL Server carries over the existing version. Upgrade procedure is shown in 5.10.
Web browser for Configuration Tool	•Microsoft Edge 85 or later •Chrome 83 or later •Firefox 95 or later

Disk drive considerations

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

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

Database considerations

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

3.3. Bitrate and storage calculator

STEP1: The number of extension software

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

		Face	People	Vehicle	License plate	People counting for 360-degree fisheye camera
The number of extension software						
# of people/vehicle	Max.	1,000	1,000	1,000	1,000	
[per camera, per hour]	Average.	1,000	1,000	1,000	1,000	

[Bitrate]

Maximum bitrate of best shot image [Mbps]	0.00
Maximum bitrate of People counting data [Mbps]	0.00
Total bitrate that server PC receives [Mbps]	0.00

[Disk access]

Maximum number of detections in total [per sec]	0

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

STEP2: Retention period and storage

	Face	People	Vehicle	License plate	People counting for 360-degree fisheye camera
Retention period (day) *Face, People, Vehicle, License Plate Images (1-31), People count, heatmap, statistics (1-92) * Up to 366 days when using SQL Server Standard Edition	31	31	31	31	92
Operating time (hours per day)	8	8	8	8	8

Note)
License Plate Images is not supported.

Estimated used disk size for best shot images [GB]	0.00
Estimated used disk size for count [GB]	0.00
Estimated used disk size for database [GB]	0.00

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

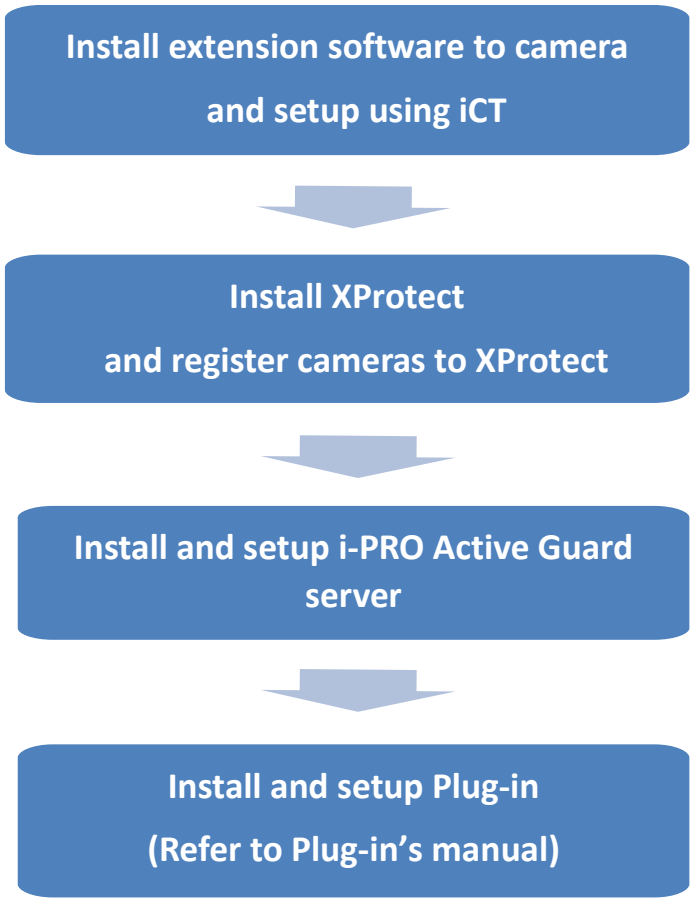
3.4. Ports used in i-PRO Active Guard server

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

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

4. Installation and setup

Procedure overview



4.1. Install extension software to camera and setup using iCT

Extension software is installed and configured using i-PRO Configuration Tool (iCT).
Please refer to below URL for downloading extension software and i-PRO Configuration Tool (iCT).

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

4.2. Install and setup XProtect

4.2.1. Install and register cameras to XProtect

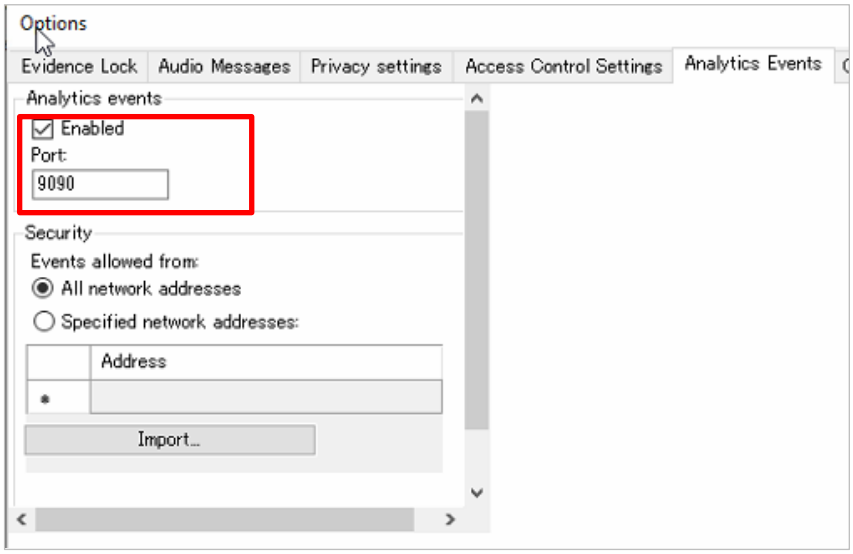
Install the VMS server software and register the AI camera.

Note)
API Gateway should be installed on XProtect Management server for i-PRO Active Guard system.

4.2.2. Enable Analytics event

Start XProtect Management Client and check for “Enabled” in [Options]-[Analytics Events].

Port number will be used for VMS registration to i-PRO Active Guard server (4.3.2.2).

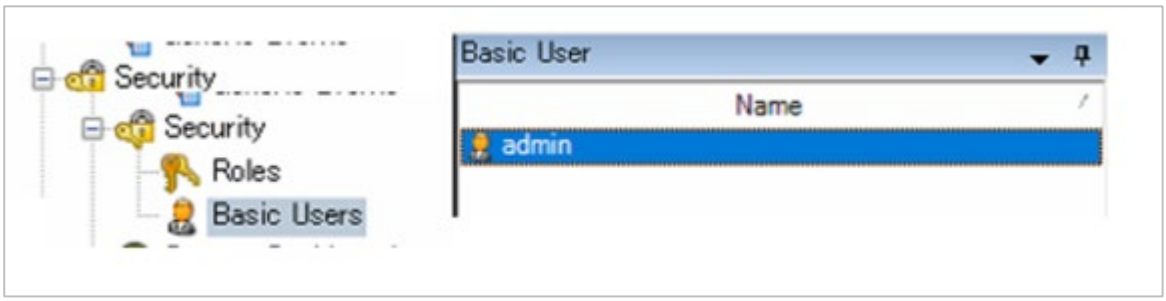


4.2.3. Register basic user

Registration of basic user on XProtect is required for cooperation with i-PRO Active Guard.
User information will be used for VMS registration to i-PRO Active Guard server (4.3.2.2).

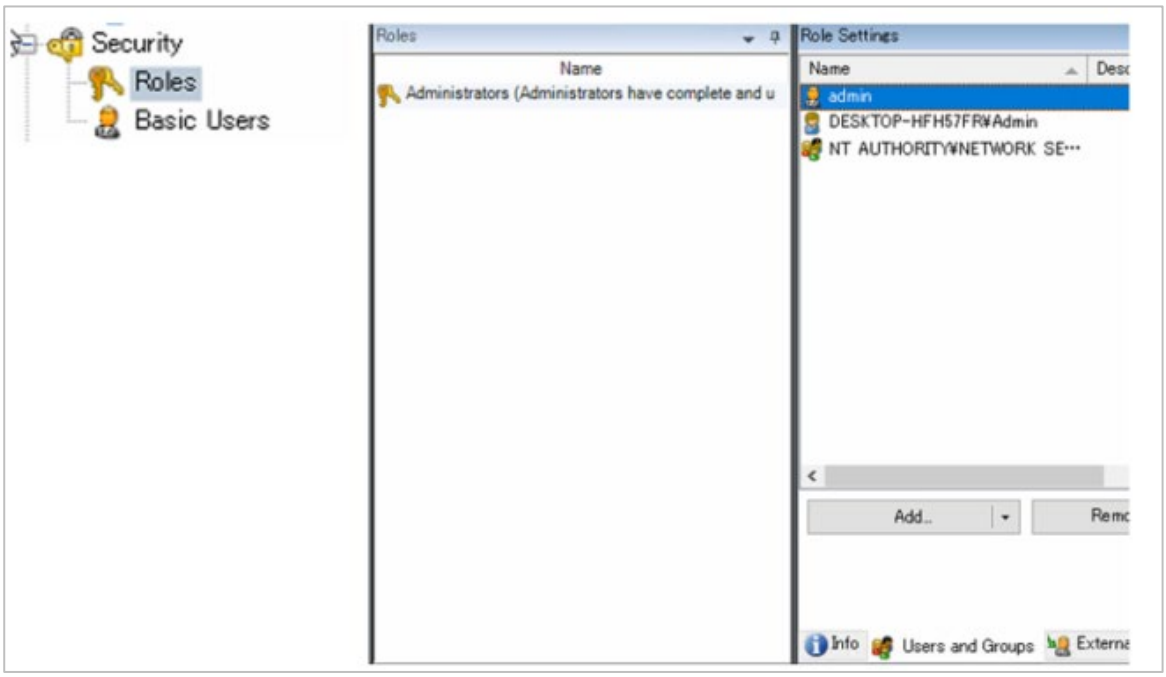
STEP1

Start XProtect Management Client and register [Basic Users].
Set the password with 32 characters or less.



STEP2

Set the administrators role for the user.



4.3. Install and setup i-PRO Active Guard server

Download the installer from

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

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

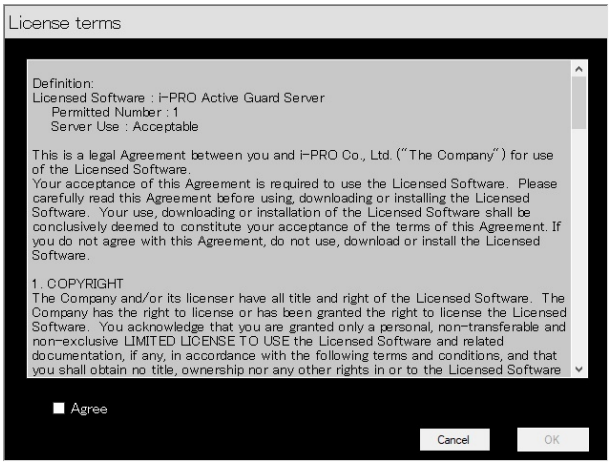
4.3.1. Install

[Important]

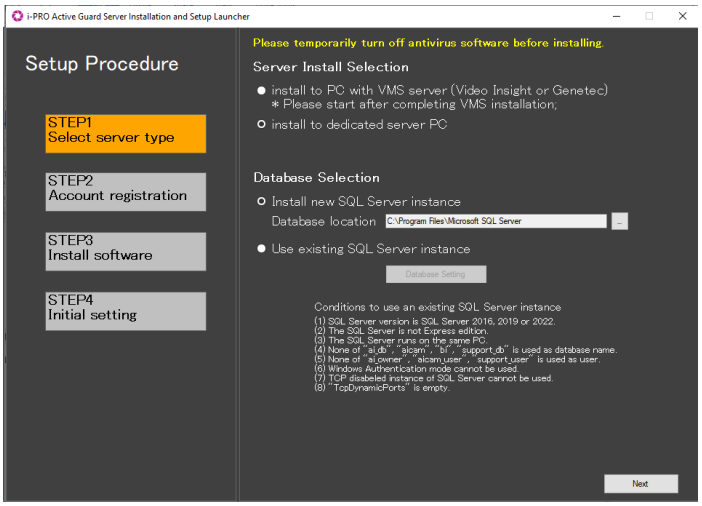
Please temporarily turn off antivirus software before installing.

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

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].



・Server Install Selection

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

Note)

[Install to dedicated server PC] should be used for Milestone XProtect system.

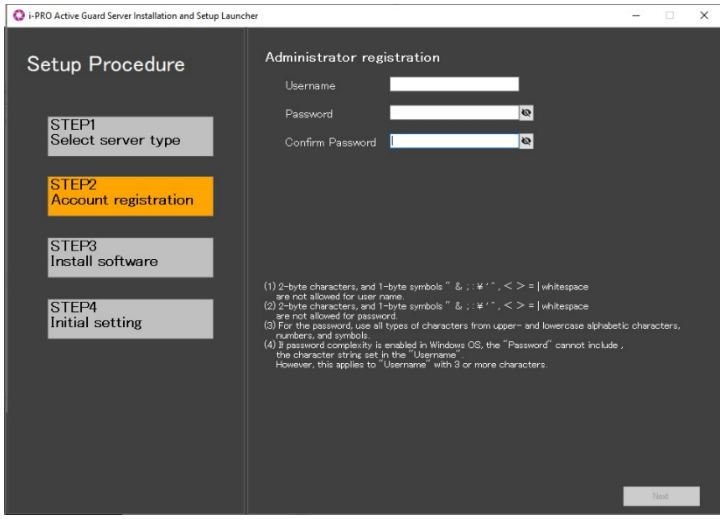
・Database Selection

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.
Select existing SQL Server instance and set administrator credentials.

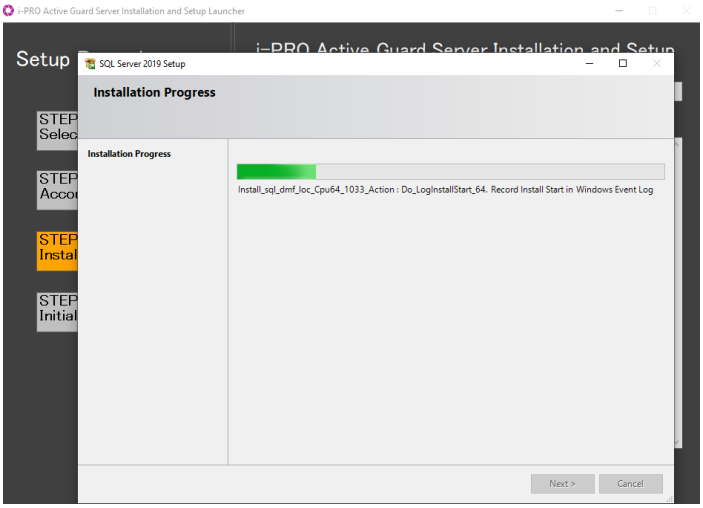
Click [Next].



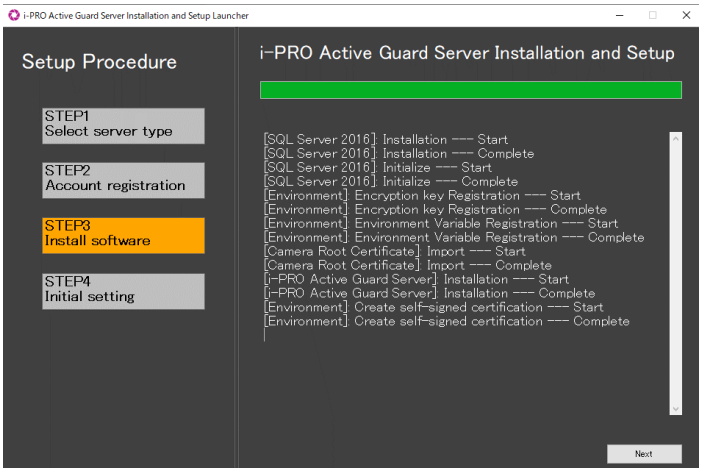
Register credentials and click [Next].

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

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

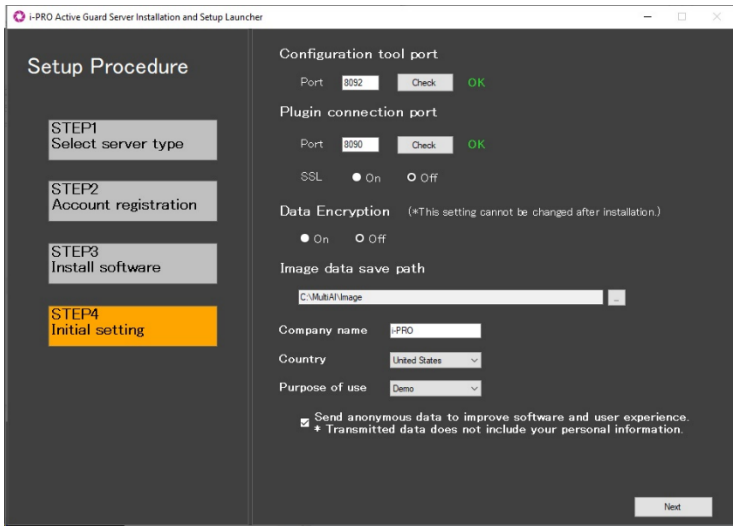


Installation starts.



[Next] button will be appeared when finished.

Click [Next].

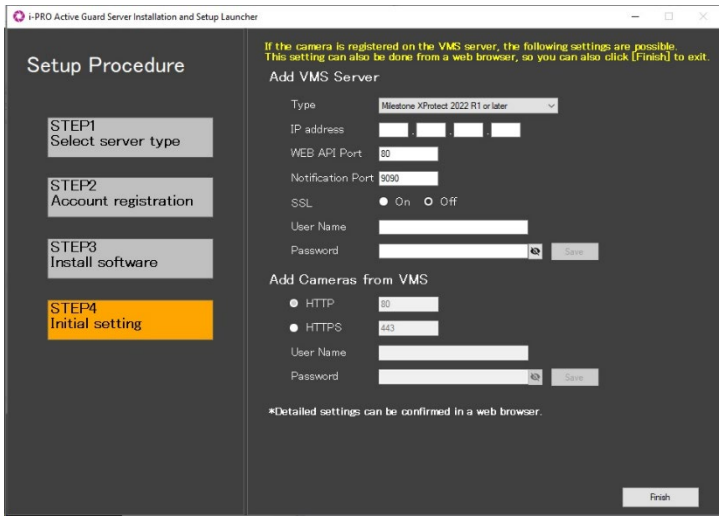


Configure port number, SSL and Data Encryption, Image data save path, Company name, Country and Purpose of use.

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.



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 “Milestone XProtect”, and set IP address, WEB API Port, Notification Port, SSL, User Name, Password.
Click [Save] to check the connection to VMS Server and save the settings if the connection is successful.

・Add Cameras from VMS

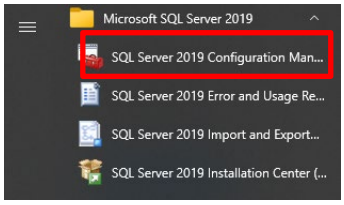
Set HTTP or HTTPS, HTTP port, HTTPS port, User Name, Password of the cameras registered on VMS Server.
Click [Save] to check the connection to the cameras and save settings if one or more connections are successful.
*Camera with AI Processing Relay will not be registered. register from web browser.

Note)

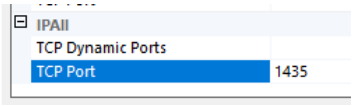
If you select [Use existing SQL Server instance] and install SQL, make sure TCP Port is configured. If the setting is blank, please set "1435".

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.

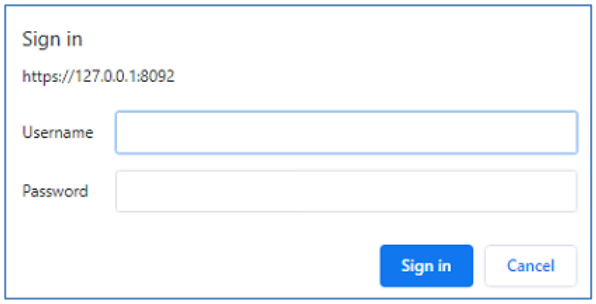


If 1435 is already used, set other empty port and uninstall i-PRO Active Guard server and install again.

4.3.2. Setup i-PRO Active Guard server

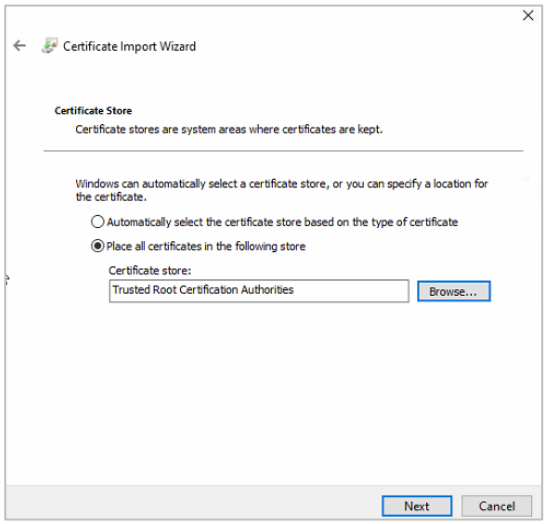
4.3.2.1. Login

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

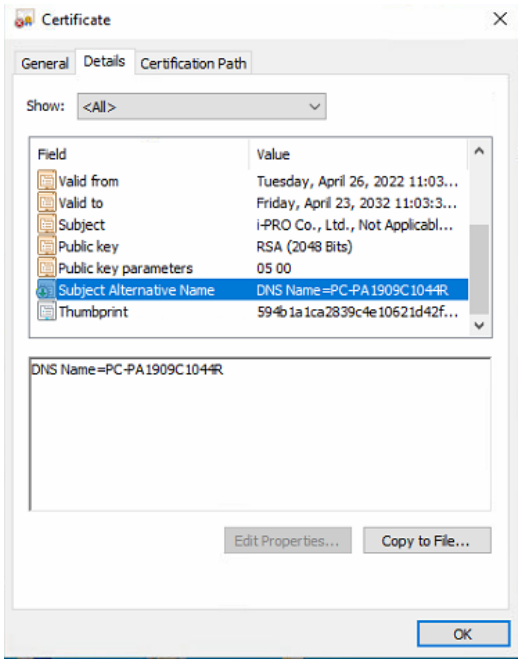


Note)
Credentials and port number configured by install tool 4.3.1 are used.
i-PRO Active Guard server uses self-signed certificate for web access.
When the security alert window is displayed, click [advanced] and [Proceed to <ip> (unsafe)].

It is possible to prevent the warning display by performing the following procedure for each client PC to be accessed.
1) Copy “C:¥MultiAI¥apache24¥conf¥server.crt” in i-PRO Active Guard server PC to client PC.
2) Double click the file and click “Install Certificate.”
3) Select “Local Machine” for Store Location
4) Select “Place all certificates in the following store and “Trusted Root Certification Authorities.”



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

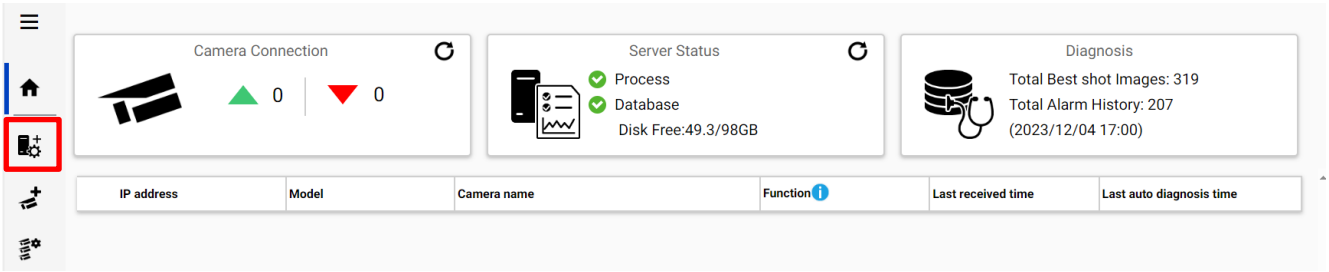


6) Open “C:¥Windows¥System32¥drivers¥etc¥hosts” and add IP address of i-PRO Active Guard server and xxxx (DNS Name).
ex. 192.168.0.125 PC-PA1909C1044R

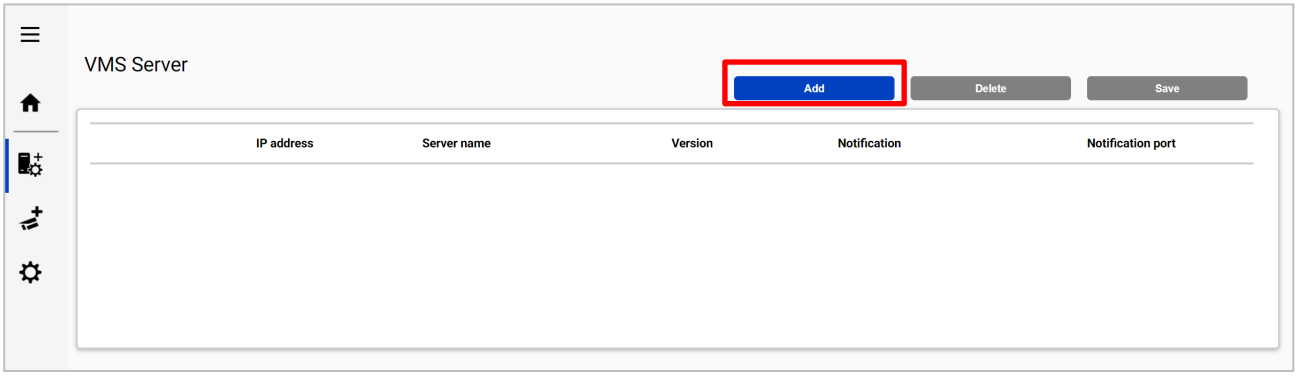
7) Access https://xxxx:8092 using web browser.

4.3.2.2. Register VMS

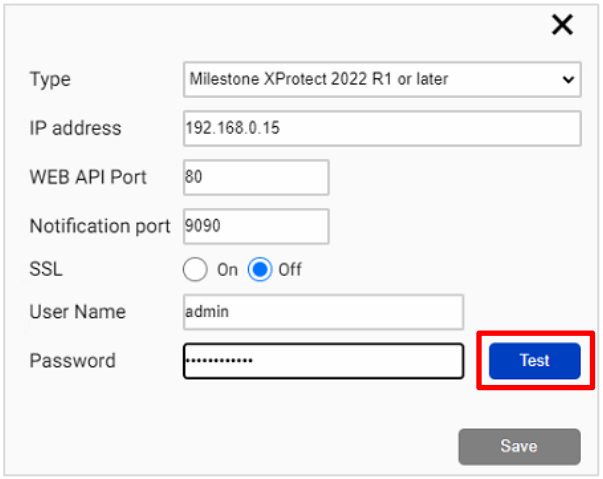
Click (Register VMS)



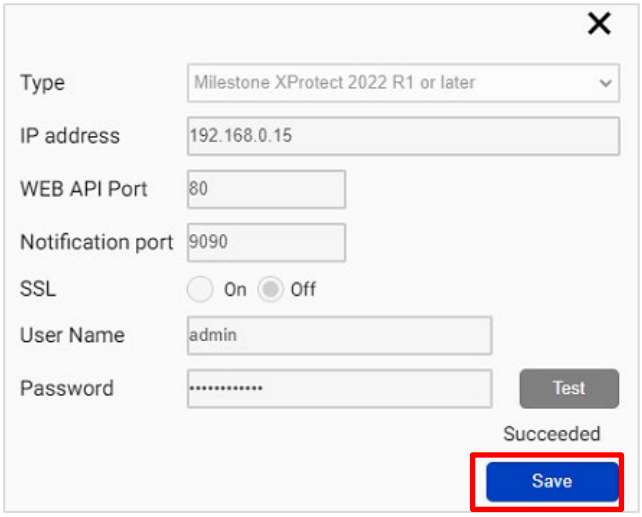
Click [Add]



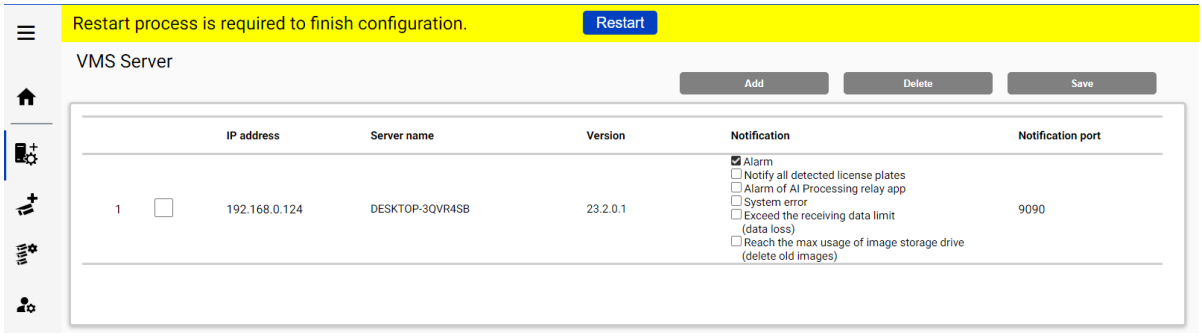
Input XProtect server's information and click Test



When Succeeded is shown, click Save



Confirm VMS server is registered.

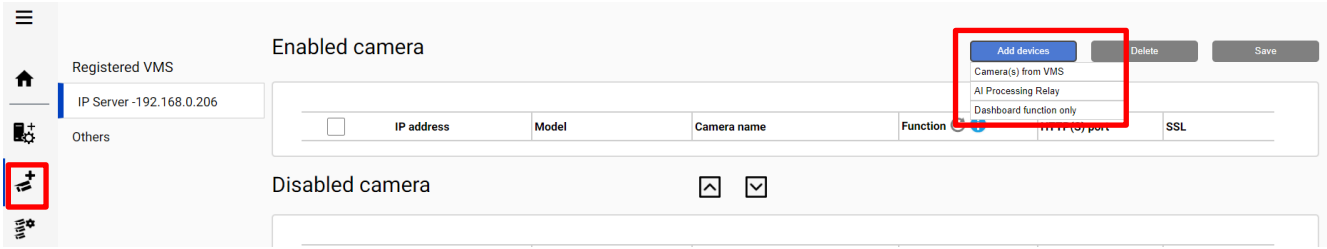


Note) Restart button will be appeared on the top of screen, but you do not need click now.
You need to click Restart after completing all other configuration.

4.3.2.3. Register Cameras

Click (Register Cameras)

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



Note)

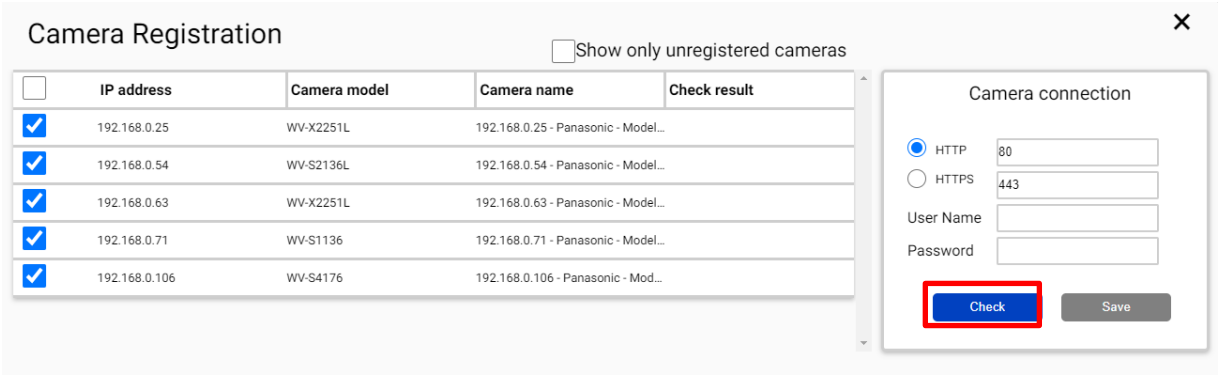
- When camera is selected from [AI Processing Relay], only cameras to which have added AI Processing Relay App can be registered. Set up the cameras you want to relay in the Camera setting browser and register it to VMS in advance. Enter IP address of the camera, credentials, [Check] and [Register].
  After registration is complete, the model in the camera list will be displayed as below.
  "Non-AI camera model (relay AI camera model)"

  ex) WV-U2542LA(WV-S71300)
  ↑ ↑
  Non-AI model Relay AI model

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

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

Input camera's credentials and click [Check].



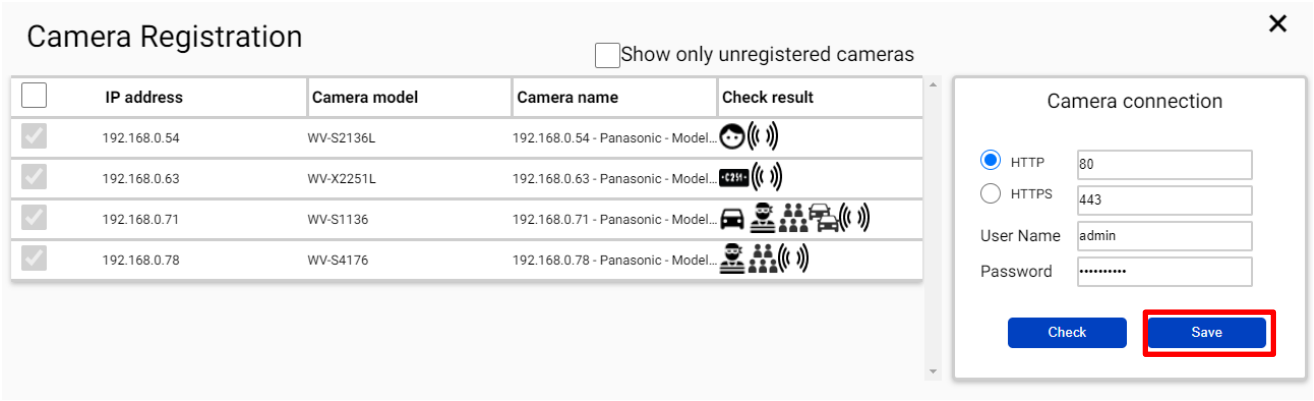
Note)

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

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

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

Click [Save].



AI Face detection

AI People detection

AI Vehicle detection

AI Video motion detection

AI Sound detection

AI Scene Change detection

People Counting/Occupancy (*)

Vehicle Counting

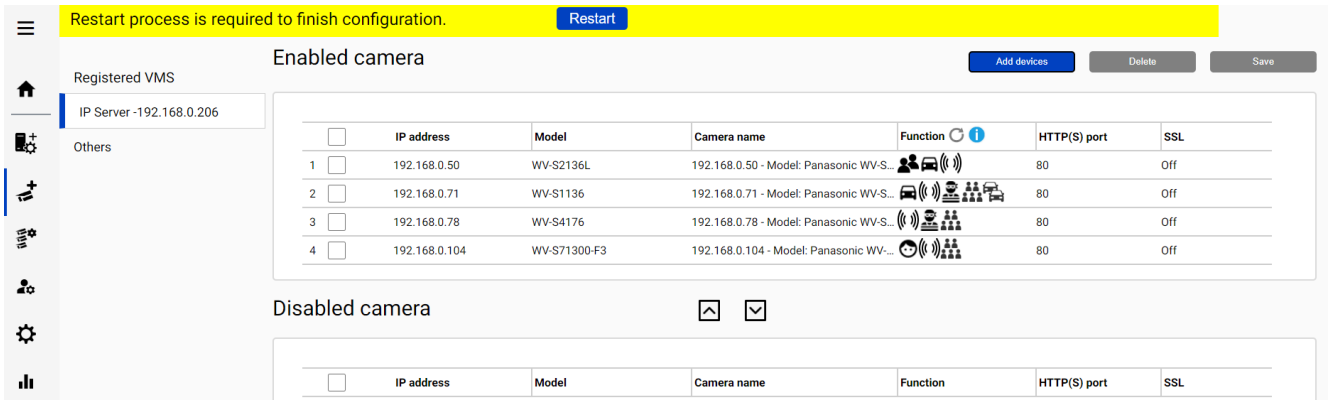
On-site Learning Object Counting

License plate detection

* The available functions differ depending on the installed application.

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

Confirm cameras are registered.



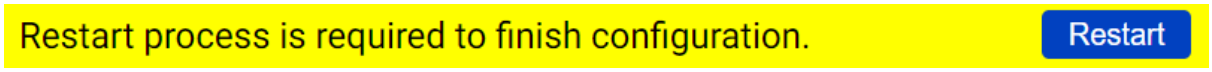
Note)

If you registered the camera from [Dashboard function only], select [Others] in [Registered VMS] and check the registration status.

4.3.3. Restart process to apply changes

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

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

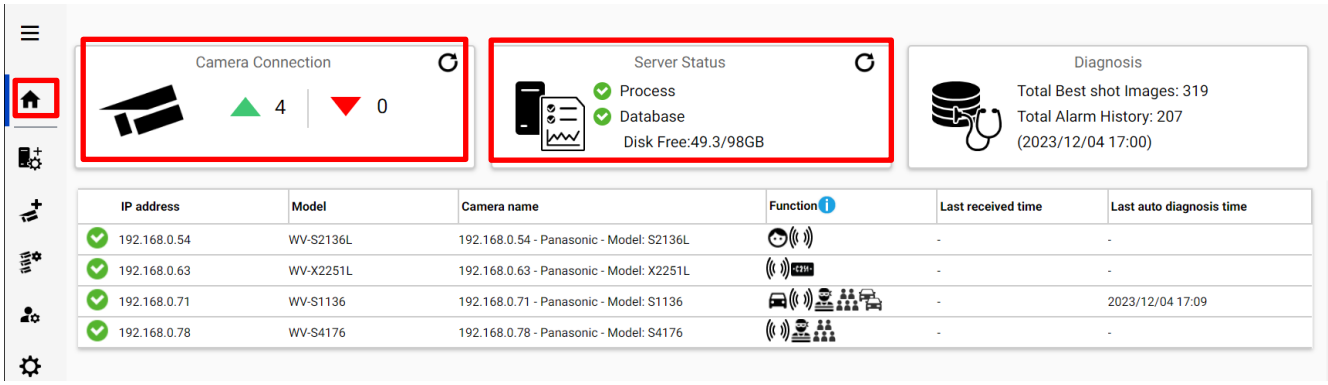


4.3.4. Check

Click (Home)

- Check camera connection

Check all registered cameras are connected.



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

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

- Check Server status

Check Process and Database shows status green.

4.3.5. System configuration (optional)

Click (Configure system) and change settings if needed.

4.3.5.1. General

Select [Auto], [English] or [Japanese] for [Language]. (Default: Auto).
Check or uncheck for [Send anonymous data to improve software and user experience].

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

4.3.5.2. Client Plug-in connection

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

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)

Note) When you change and restart software at 4.3.2, you need to access https://<ip>:<port> using new port number. Make a note not to forget.

4.3.5.4. Database

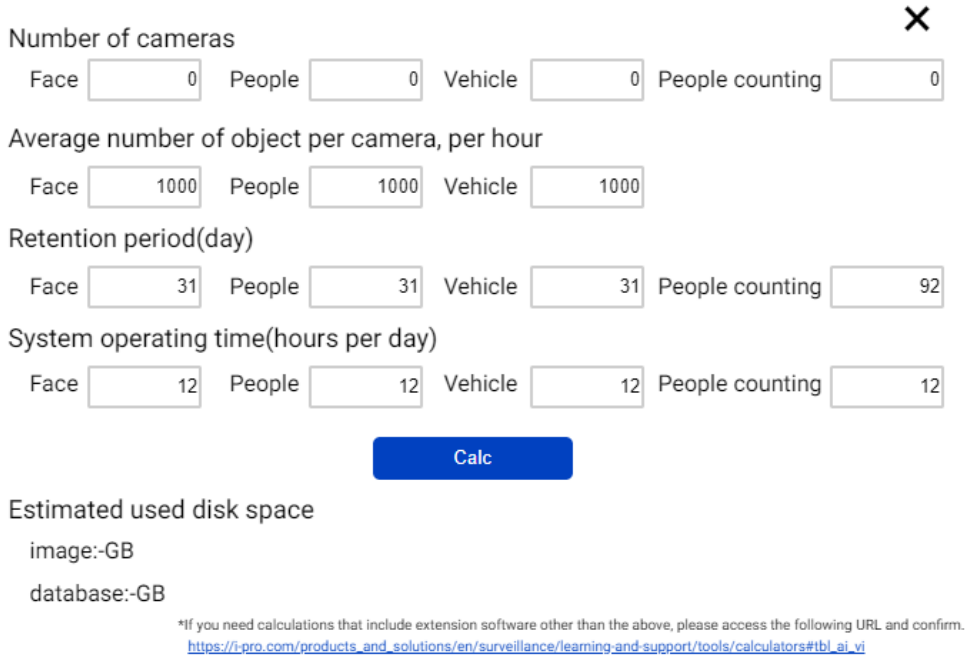
Configuration item	Comment
Storing images in database	All data(default): Store all data including images. Only alarm and statistics data: Store only alarm and statistics data Only statistics data: Store only statistics data
License plate number	Enable/Disable can be configured. (Default: Enable) Sets whether to store the license plate number in SQL Server.
Retention period	[For face image, people image, vehicle image, license plate image and alarm history] Using SQL Server Express Edition:1 – 31 days (Default: 31) can be set. Using SQL Server Standard Edition:1 – 366 days (Default: 366) can be set. [For Count, heat map statistics] Using SQL Server Express Edition:1 – 92 days (Default: 92) can be set. Using SQL Server Standard Edition:1 – 366 days (Default: 366) can be set. Note) 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.
CSV backup	Enable/Disable can be configured. (Default: Disable) 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. Note) When enable, [Max usage of image storage drive] will be also enabled automatically. **Important:** ・ 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.
Max usage of image storage drive (*)	Enable/Disable and data size 10- 2000 (GB) can be configured. (Default: Disable) Note) When enabled, the used disk space of drive for storing best shot images exceed the setting value, old image will be deleted automatically. This works every hour. You can manage data size using this configuration that i-PRO Active Guard server stores. Used disk space equals total volume minus free space.

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

* Simple calculator can be used by clicking

Input parameters of your system and click Calc.

Estimated used disk space is shown.



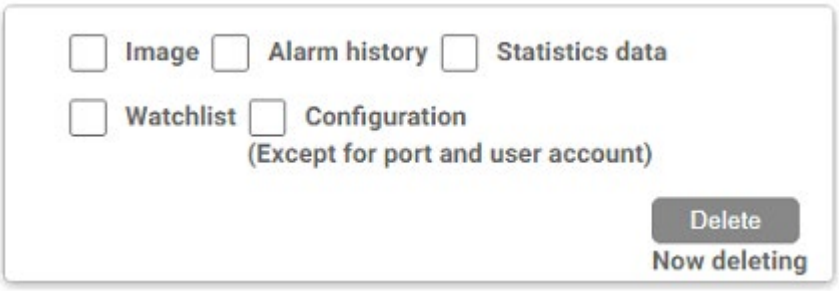
Note)

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 including heat map data.
Watchlist: delete all face watchlist, people watchlist, vehicle watchlist and lpr watchlist (also lpr group and registered license plate). See operation manual about watchlist.
Configuration: delete all registration data (VMS, Camera, and logs) except for port and user account.

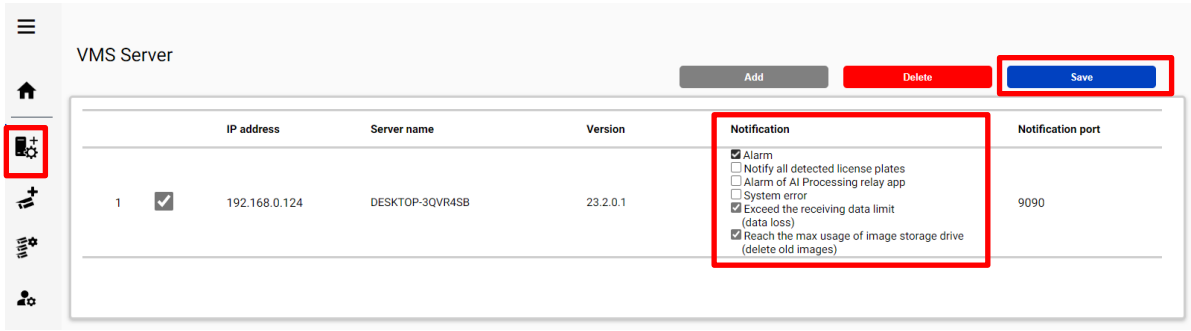
Note)
It may take time to delete image depending on the number of images. When deleting, button will be as follows. Please update page to confirm the latest status.



4.3.6. Notification to VMS Server (optional)

Some alarms related to i-PRO Active Guard server failure can be enabled.
Actions on VMS side also can be configured (4.5 Custom alarm setup (optional))

Click (Register VMS)



Check following items that you want and [Save].

Notify all detected license plates

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

Alarm of AI Processing relay app

Notifies alarm of AI Processing relay app received by i-PRO Active Guard server.

System error

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

Exceed the receiving data limit (data loss)

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

Reach the max disk space of image (delete old images)

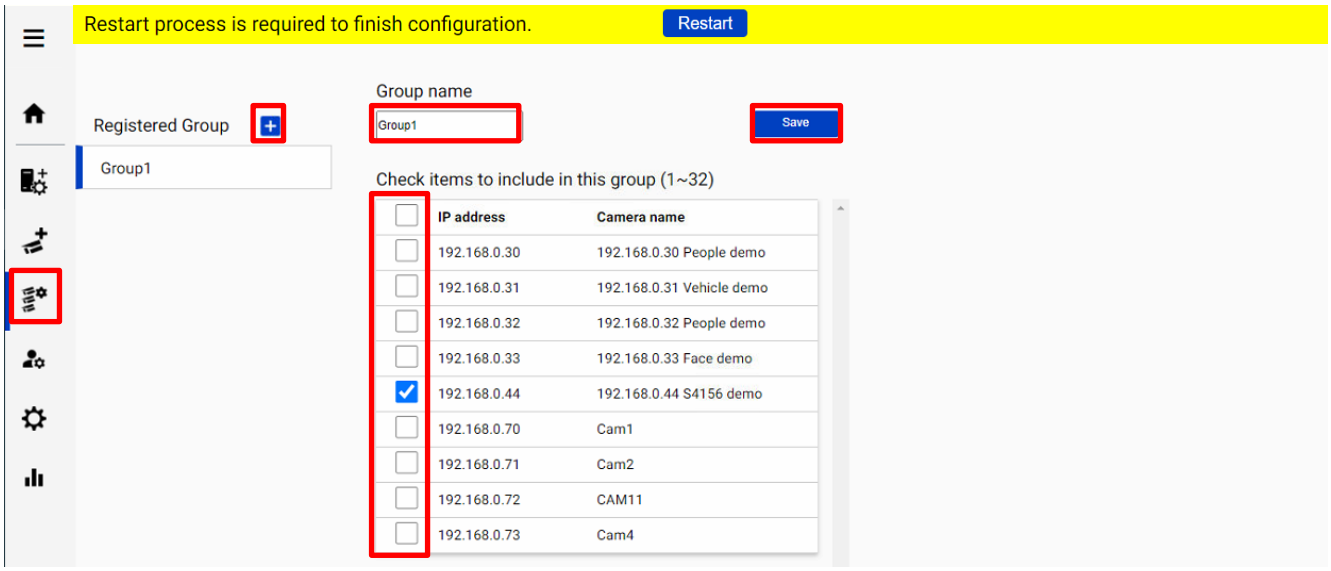
When the usage of image storage drive exceeds the setting value for “Max usage of image storage drive (GB)” configured at 4.3.5.4.

4.3.7. Dashboard configuration (optional)

4.3.7.1. Camera group configuration

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

Click (Camera Group).



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

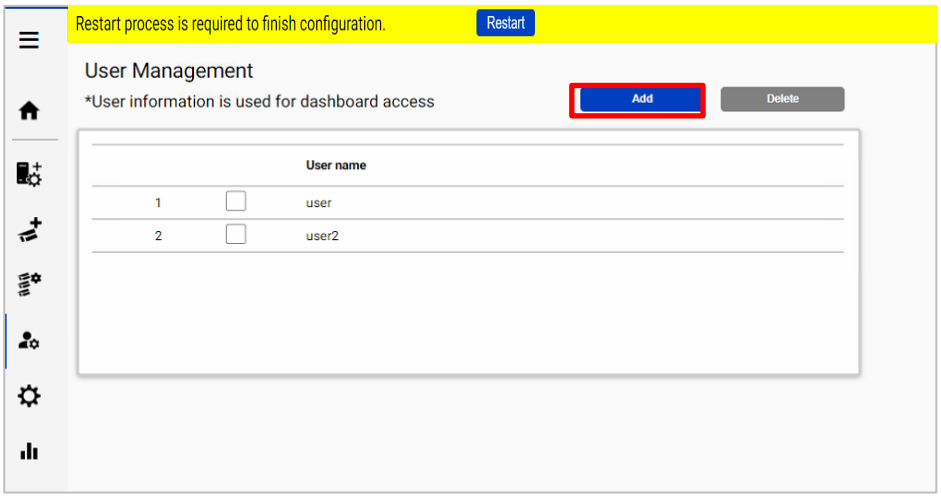
Note) Up to 16 groups can be configured.

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

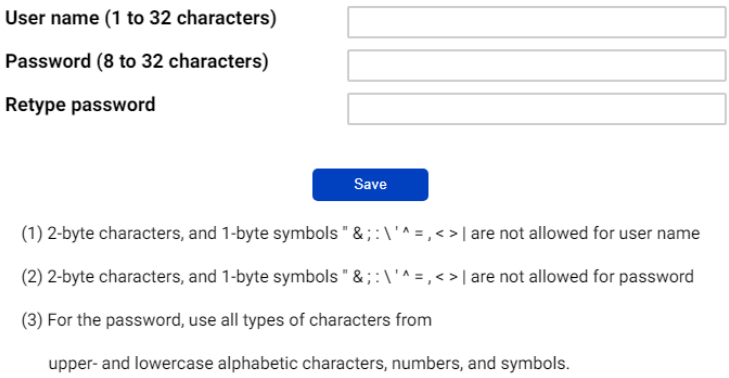
4.3.7.2. User Management

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

Click (User Management) and [Add].



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



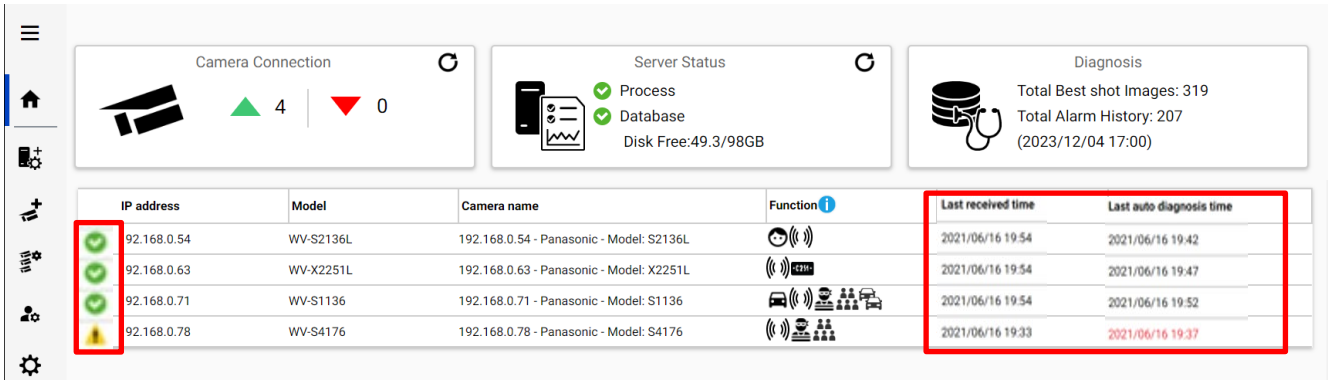
Note) User information can also be used for Plug-in connection.

[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 is connected.

: Camera is not connected.

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

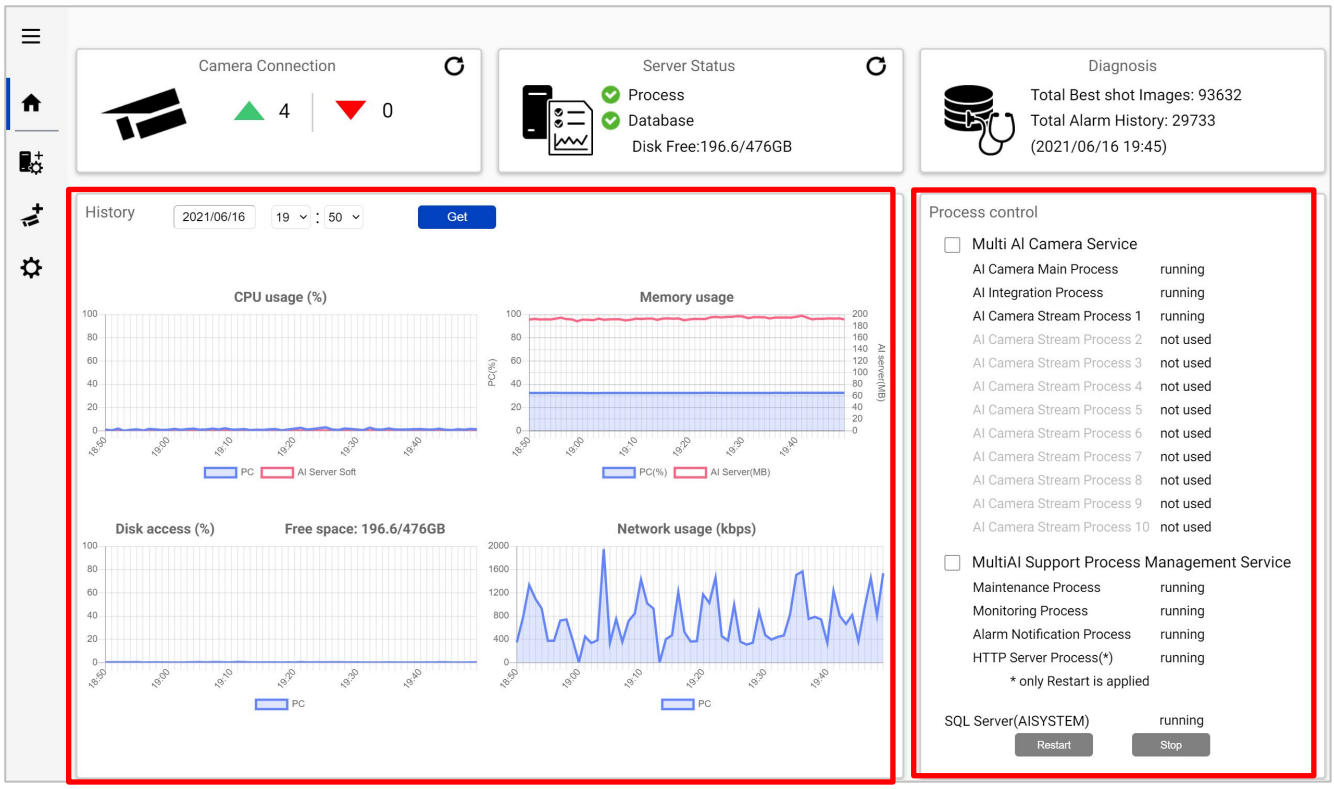
Metadata session is connected, but AI application on camera side may not work well. Check AI application on camera side is installed, schedule setting is on and also check whether “Last received time.”

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

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

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

4.3.8.2. Server Status



History

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

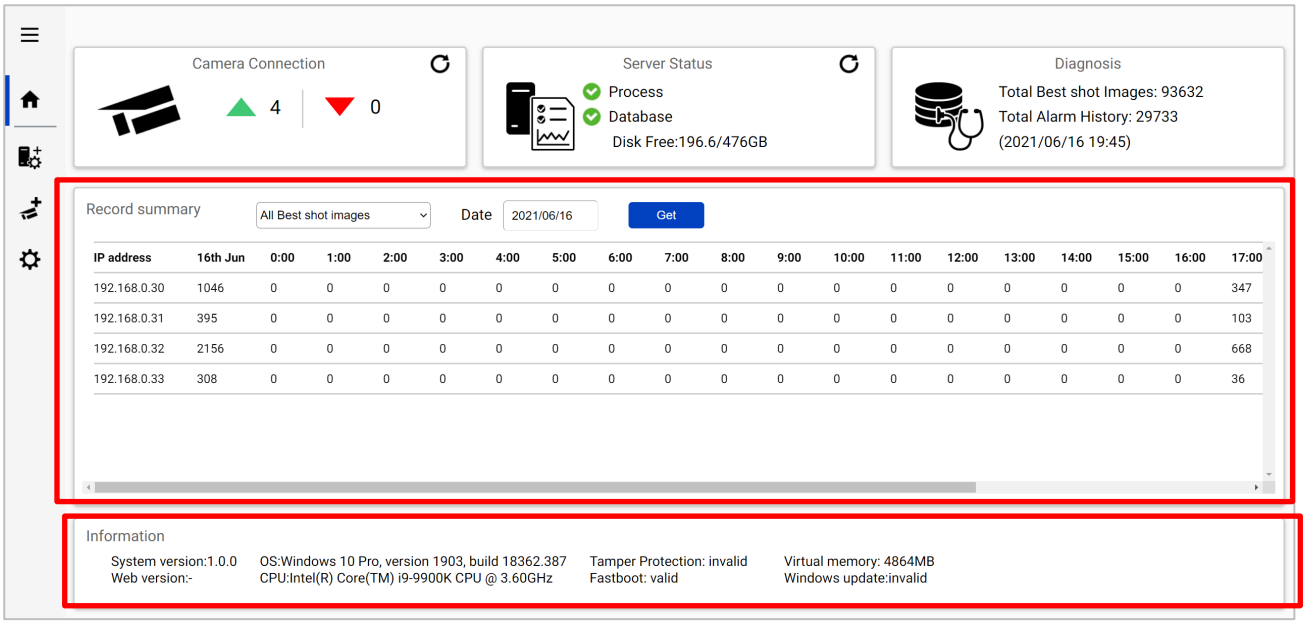
These data can be used to check whether PC performance is stable after installation or investigation of the system trouble.

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

Process Control

Processes related to i-PRO Active Guard server can be restarted or stopped. When the system is running, please check all processes show “running” or “not used.”
(The number of used “AI Camera Stream Process x” depends on the number of registered cameras.)
When it is required to restart PC, check “Multi AI Camera Service” and “Support Process Management Service” are stopped (also see 5.6.1).
When investigation to system trouble is required, please check status, and try to restart.

4.3.8.3. Diagnosis



Record summary

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

Selectable items depend on the registered camera and AI application.

*Selectable items

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

Note）

About notification of LPR Detection.

- License plate detection

  You will be notified when you set “Notify all detected license plates” on the screen of Register VMS. See 4.3.6.

- Registered License plate detection

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

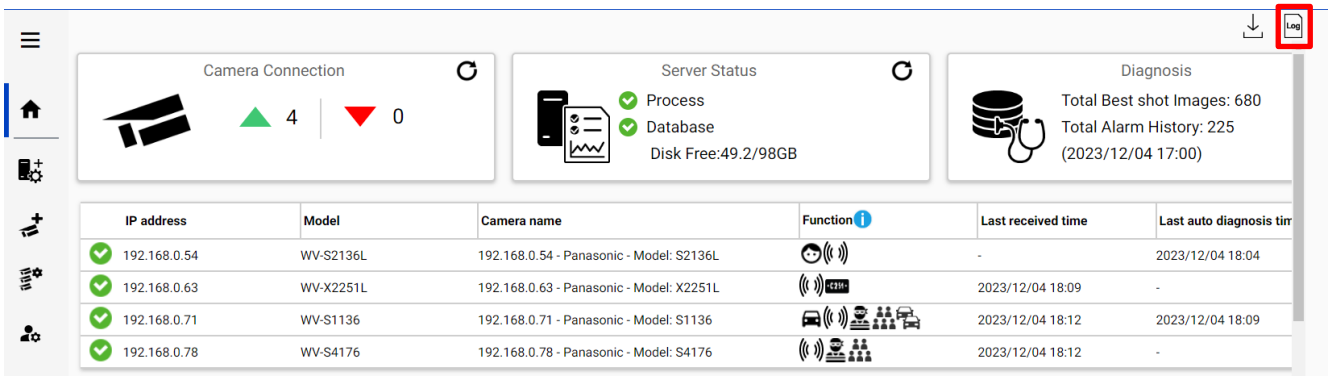
- Unregistered License plate detection

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

Information

Software version, OS, windows configuration is shown.

4.3.8.4. Display log

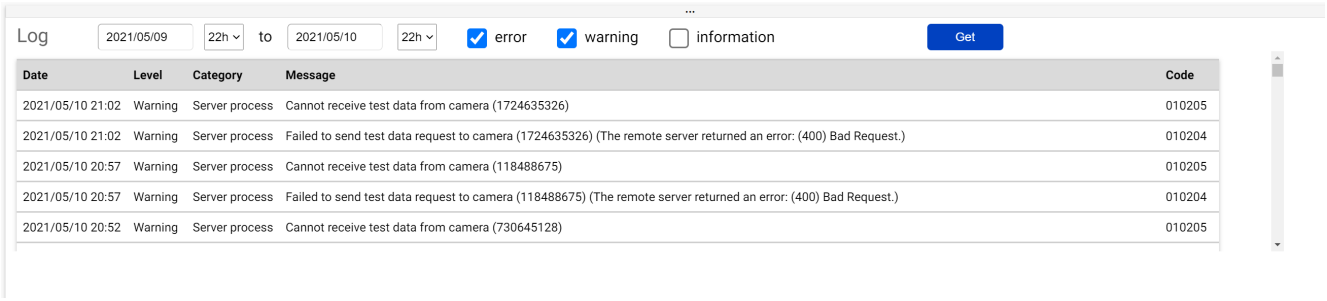


Click

to show logs.

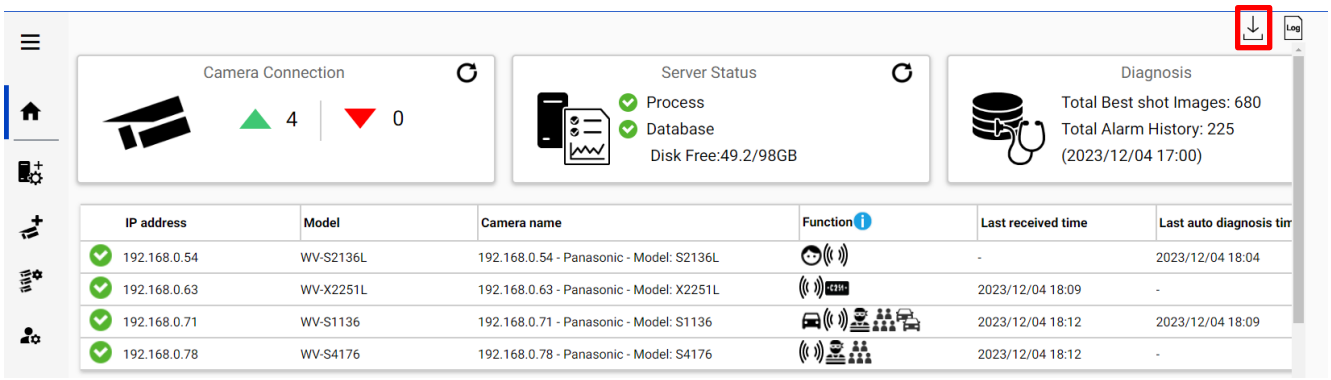
Overview of system error can be displayed. Select date and error level (error, warning and information) and click Get.

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

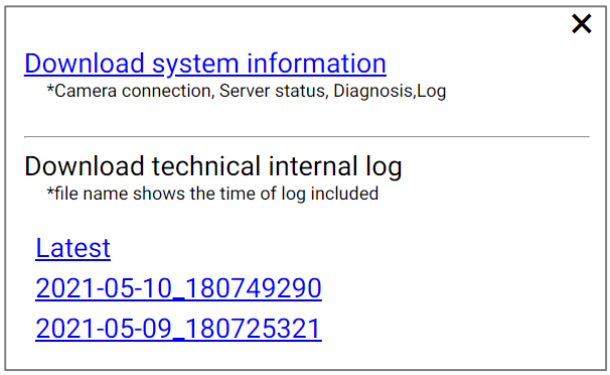


Note) Maximum 1000 logs can be shown at the same time.

4.3.8.5. Download log



Click ⬇ to download log.



Download system information

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

Download technical internal log

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

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

4.3.9. Windows setting

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

4.3.9.1. Disable Real-time protection and Tamper protection

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

In case of Windows 10,
(Start – Settings – System – Update & Security – Windows Security – Virus & threat protection – Virus & threat protection - Virus & threat protection settings – Manage settings)
Off the "Real-time protection" and "Tamper protection."
Windows server OS does not have Tamper protection feature.

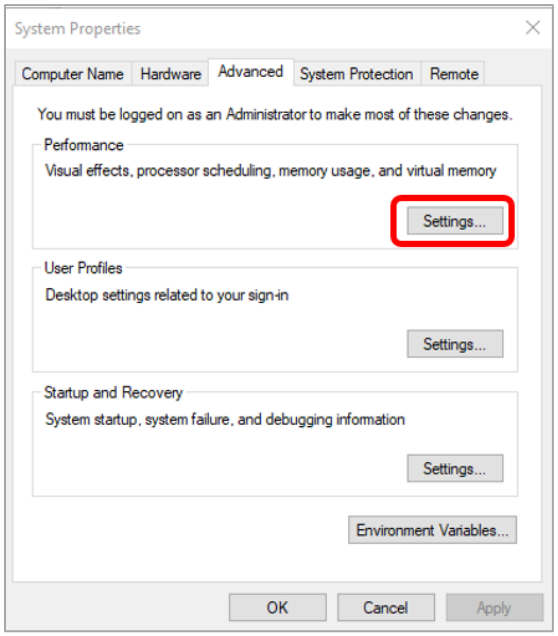
4.3.9.2. Disable Windows Update service

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

In case of Windows 10,
Start – Windows Administrative Tools – Services – right click "Windows Update" – Properties – select "Disabled" for "Startup type" and click OK.

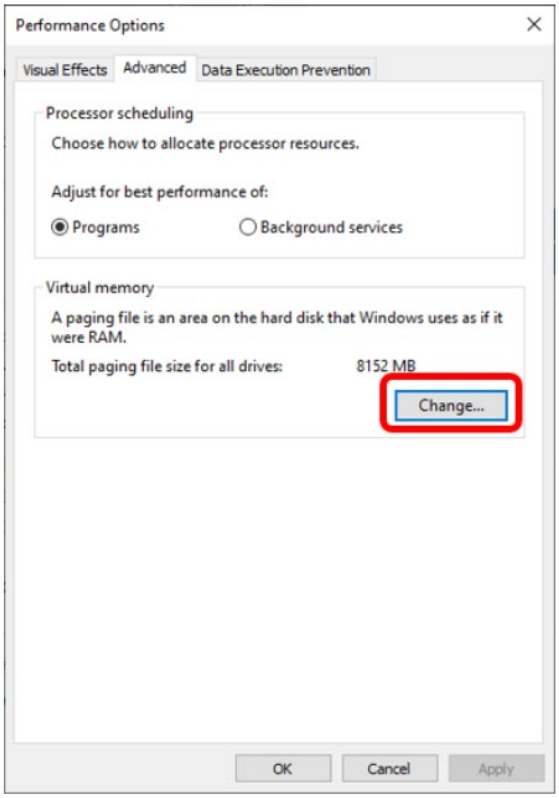
4.3.9.3. Virtual memory setting

If the virtual memory is insufficient, the database may stop.
Follow the procedures below to check the virtual memory setting.



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

Select Settings



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

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

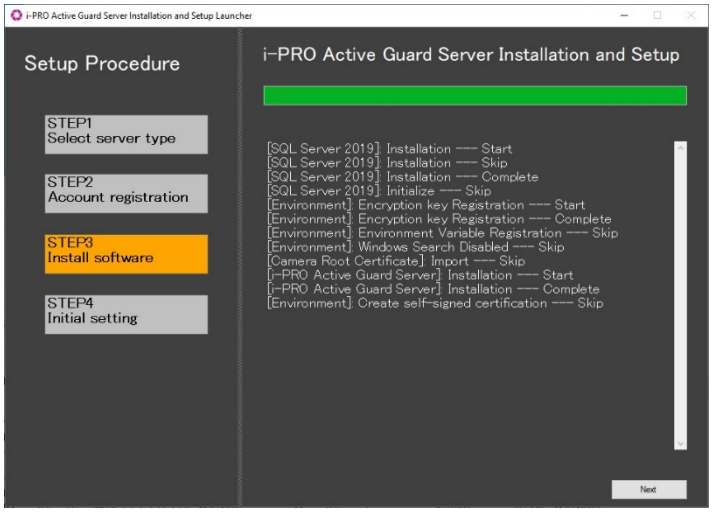
4.4. Install and setup Plug-in for XProtect Smart Client

Please refer Plug-in's manual.
https://www.milestonesys.com/technology-partner-finder/i-pro--co.-ltd/i-pro-active-guard-plug-in-for-xprotect/

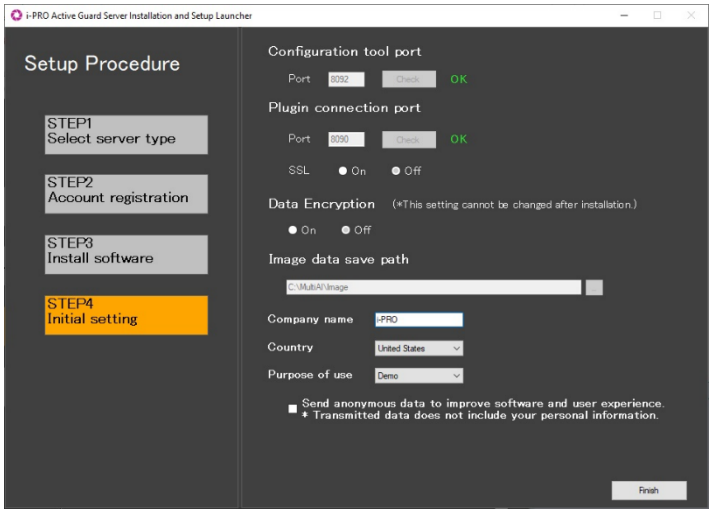
4.5. Upgrade i-PRO Active Guard server

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

Execute "MultiAIStartup.exe" as administrator (file path length must be less than 120).
Check for [Agree] for License terms and [OK].



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



Click [Finish].

4.6. Upgrade Plug-in

Please refer Plug-in’s manual.

https://www.milestonesys.com/technology-partner-finder/i-pro--co.-ltd/i-pro-active-guard-plug-in-for-xprotect/

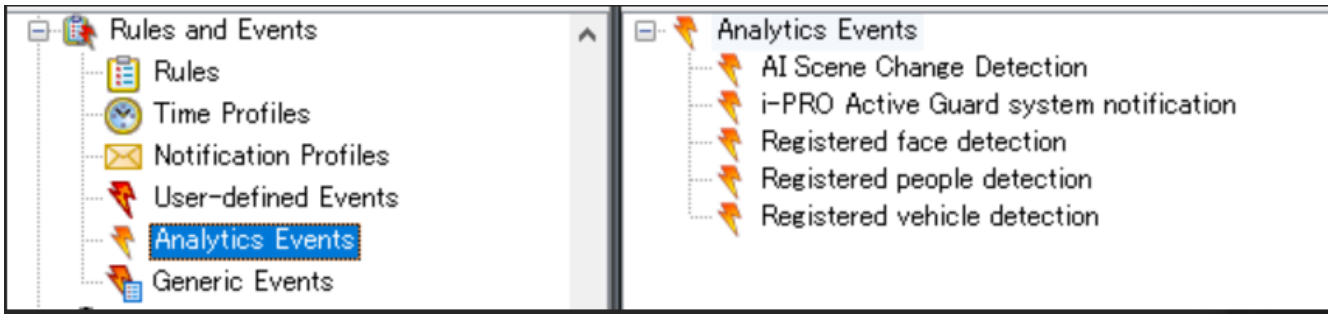
4.7. Rules and Events, Alarm setup (optional)

Registered face detection, Registered people detection, Registered vehicle detection, AI Scene Change Detection and i-PRO Active Guard system notification can be used as Analytics Events on XProtect.

STEP1

Start XProtect Management Client and confirm “Registered Face Detection”, “Registered People Detection”, “Registered Vehicle Detection” and “i-PRO Active Guard system notification” exist in [Analytics Events].

These are added automatically when XProtect is registered to i-PRO Active Guard server (4.3.2.2)



Note)

Custom events may not add automatically in upgrade i-PRO Active Guard server.

- Case of upgrading from V1.51 or earlier to V1.60 or later,

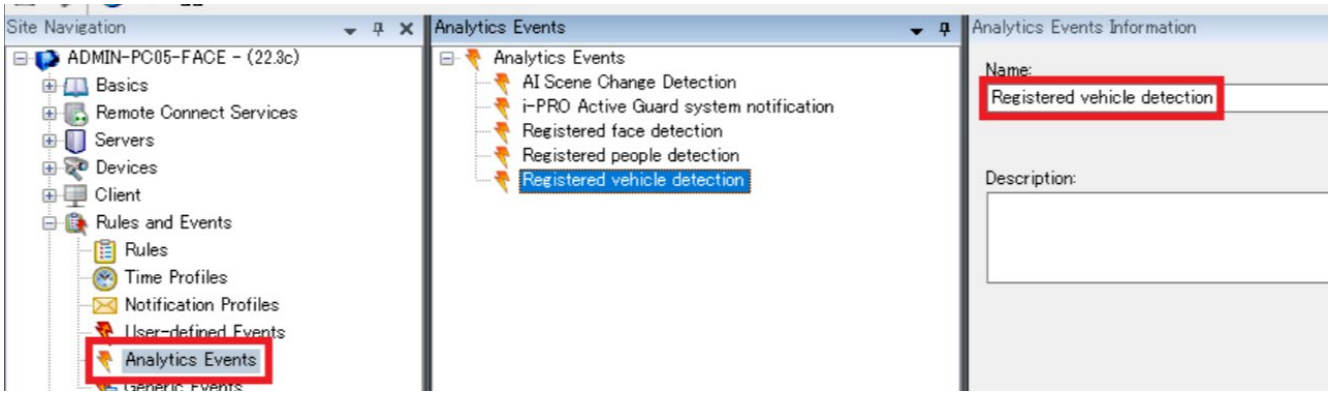
  "Registered Vehicle Detection" will not be added automatically.

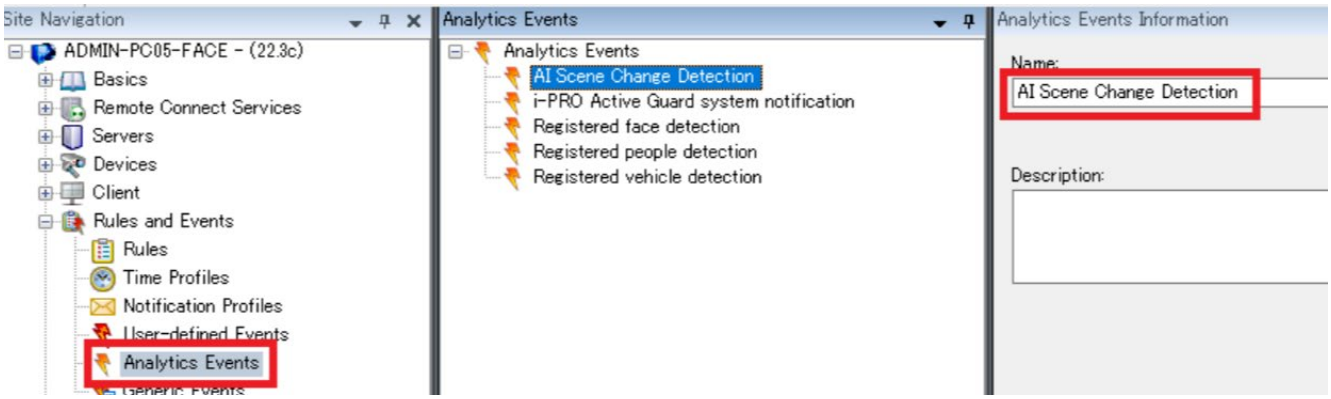
- Case of upgrading from V1.60 or earlier to V1.70 or later,

  “Registered License plate Detection”, “Unregistered License plate Detection”,

  “License plate Detection”, “Registered Advanced Vehicle Detection” will not be added automatically.

If you want to add it, please create Analytics Events manually.





Name	Description
Registered face detection	Notify when a face registered in the watchlist is detected.
Registered people detection	Notify when people registered in the watchlist is detected.
i-PRO Active Guard system notification	(Alarm, System error, Exceed the receiving data limit, Reach the max usage of image storage drive *1) Notify when system event is received.
Registered vehicle detection	Notify when a vehicle registered in the watchlist is detected.
AI Scene Change Detection	Notify when a scene change is detected.
Registered License plate Detection	Notify when a License plate registered in the watchlist is detected.
Unregistered License plate Detection	Notify when a License plate unregistered in the watchlist is detected.
License plate Detection	(Notify all detected license plates *1) Notify when a License plate is detected.
Registered Advanced Vehicle Detection	Notify when a License plate registered in the watchlist set in "appearance only" is detected.
Intruder	(Alarm of AI Processing relay app *1) Notify when an object detection in field is detected.
Loitering	(Alarm of AI Processing relay app *1) Notify when an object loitering is detected.
Direction	(Alarm of AI Processing relay app *1) Notify when a direction alarm of object is detected.

Name	Description
Crossline	(Alarm of AI Processing relay app *1) Notify when an Object crossed line is detected.
Occupancy detection	(Alarm of AI Processing relay app *1) Notify when people counting alarm is detected.

*1: i-PRO Active Guard Server configuration required. Please refer to 4.3.6.

Note）

About notification of LPR Detection.

- License plate detection

  You will be notified when you set “Notify all detected license plates” on the screen of Register VMS. See 4.3.6..

- Registered License plate Detection

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

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

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

- Unregistered License plate Detection

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

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

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

- Registered Advanced Vehicle Detection

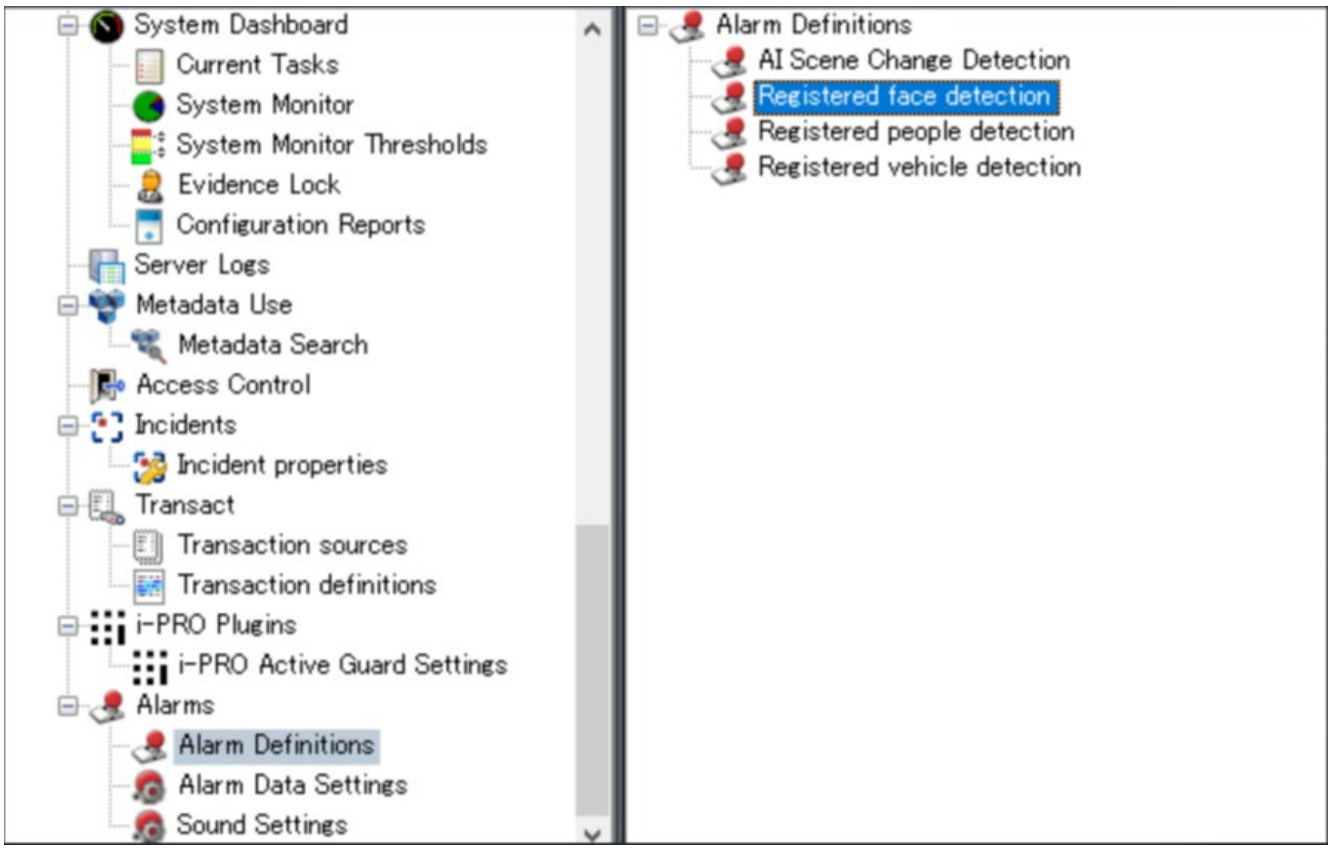
  (1) set “Detect by vehicle appearance only” to on.

STEP2

Confirm “Registered face detection”, “Registered people detection”, “Registered vehicle detection” and “AI Scene Change Detection”, etc exist in [Alarm Definitions].

These are added automatically when XProtect is registered to i-PRO Active Guard server (4.3.2.2)

Change the settings as needed.



Note) To use i-PRO Active Guard system notification, you also need to enable on i-PRO Active Guard configuration (Refer to 4.3.6).

Note)

Custom events may not add automatically in upgrade i-PRO Active Guard server.

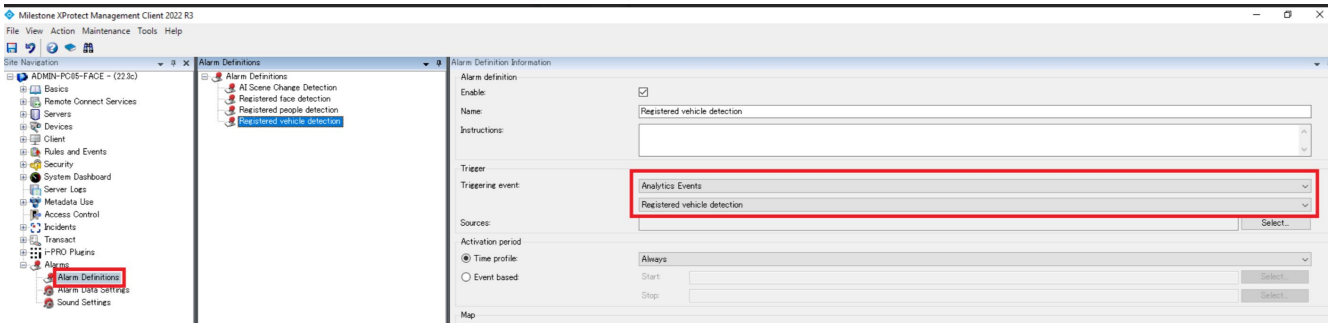
- Case of upgrading from V1.51 or earlier to V1.60 or later,

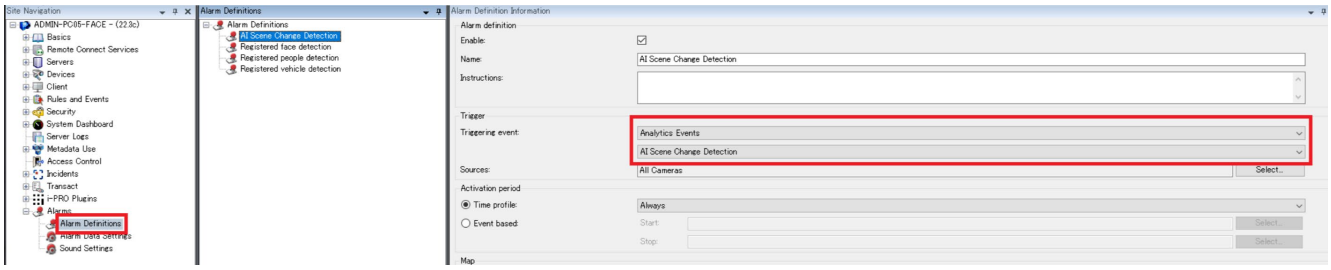
  "Registered Vehicle Detection" will not be added automatically.

- Case of upgrading from V1.60 or earlier to V1.70 or later,

  “Registered License plate Detection”, “Unregistered License plate Detection”,

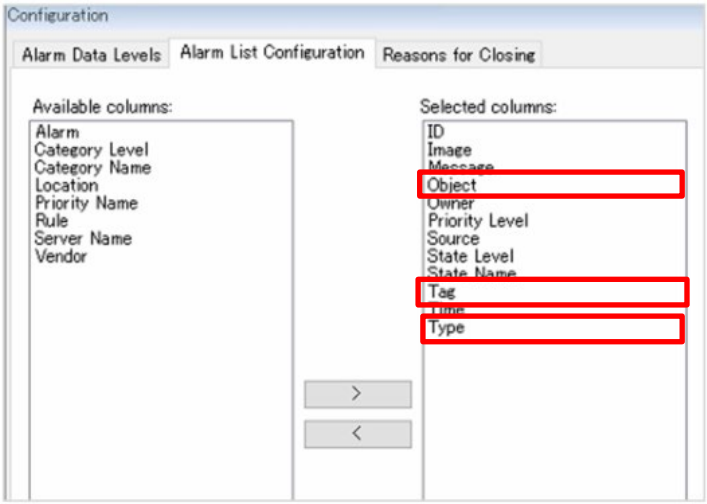
If you want to add it, please create Alarm Definitions manually.





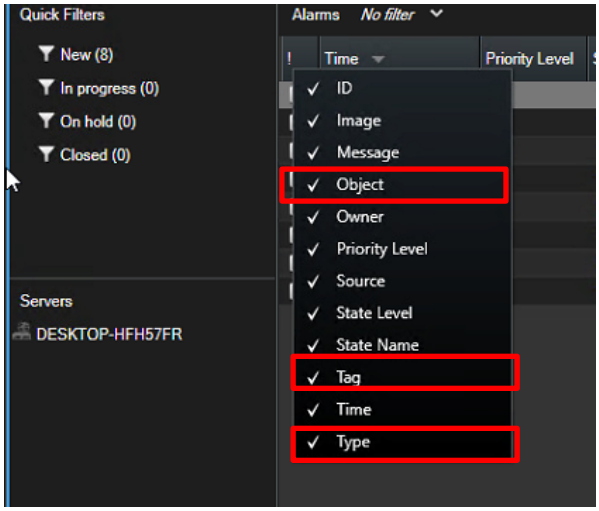
STEP3

Add columns [Object], [Tag] and [Type] for [Selected columns] in [Alarm Data Settings] - [Alarm List Configuration].

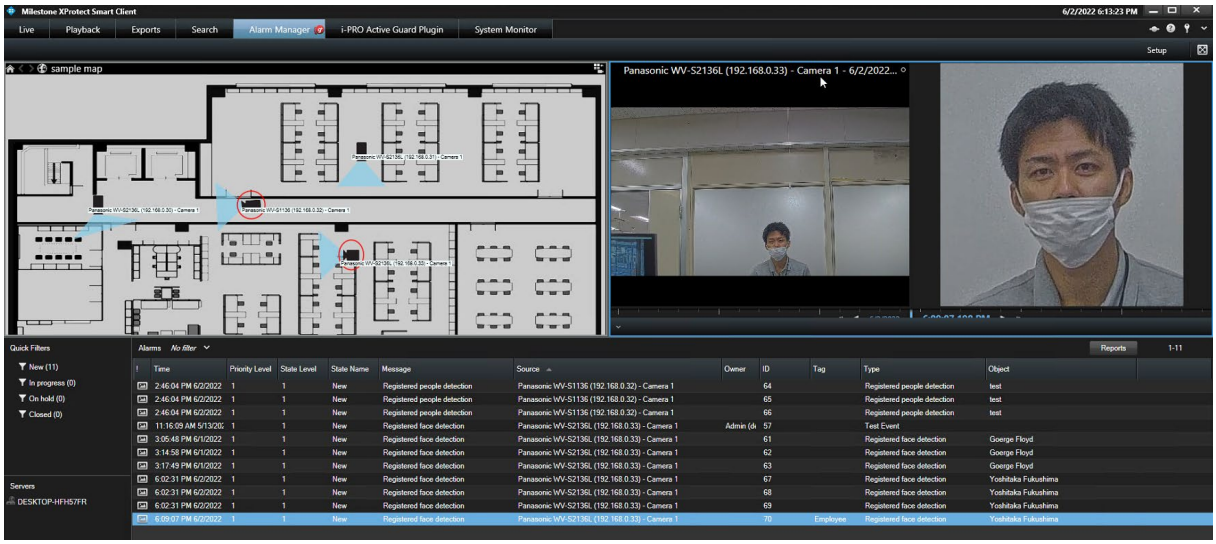


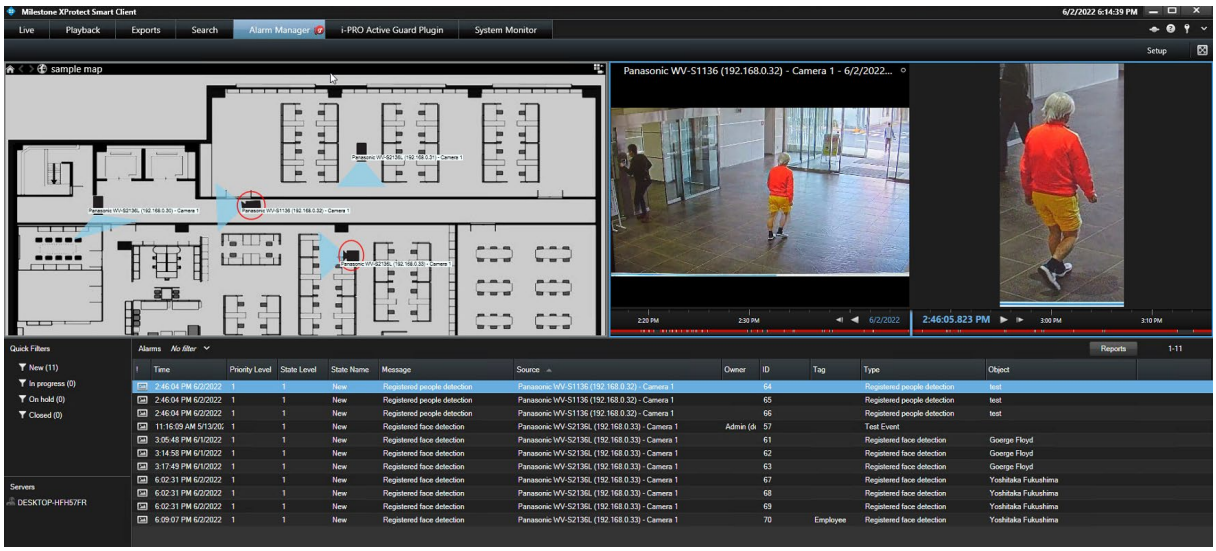
STEP4

Start XProtect Smart Client and enable the display of these columns in the Alarm Manger.



Registered face detection and Registered people detection will be shown when occurred.





i-PRO Active Guard system notification will be shown as Event in Alarm Manager.

5. When changing system component

5.1. Add system device

5.1.1. Add camera

STEP1

Register AI cameras to XProtect.

STEP2

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

STEP3

Restart process (Refer to 4.3.3)

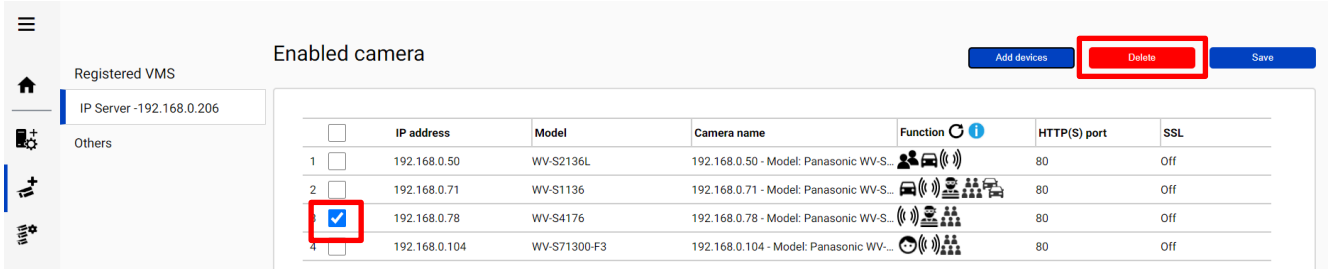
5.2. Delete system device

5.2.1. Delete camera

STEP1

Check camera and [Delete] from Register Cameras screen.

Existing data of the selected camera will be unavailable.



STEP2

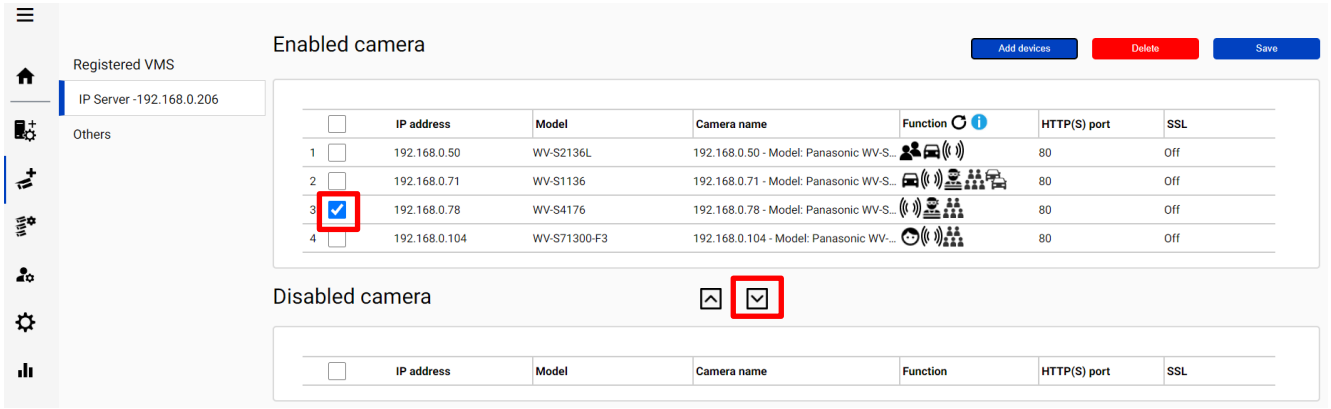
Restart process (Refer to 4.3.3)

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.

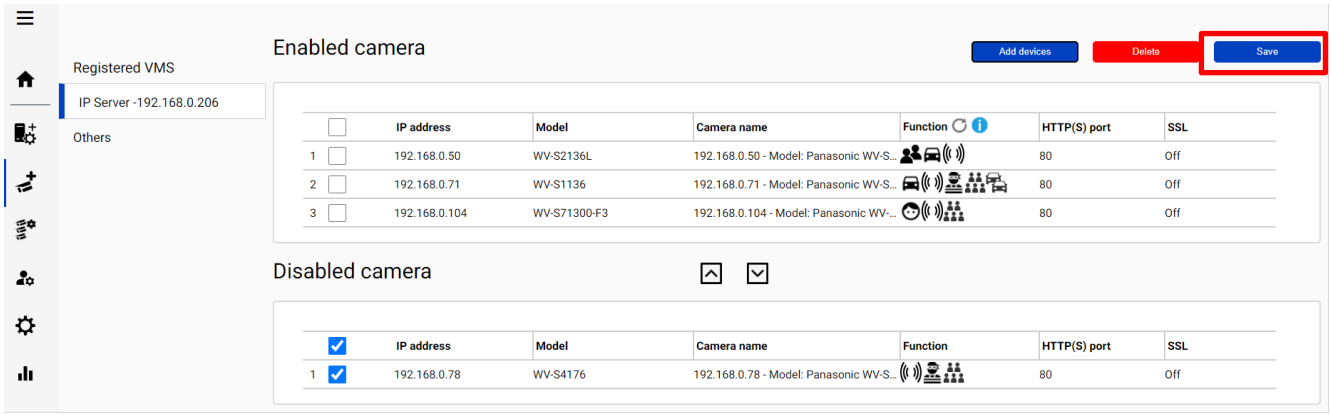
STEP1

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.



STEP2

[Save]



STEP3

Restart process (Refer to 4.3.3)

When you want to use the camera and existing data of the camera again, move to Enabled camera and [Save].
Existing data of the camera will be available as long as retention period is not exceeded from Plug-in.

5.2.3. Delete XProtect

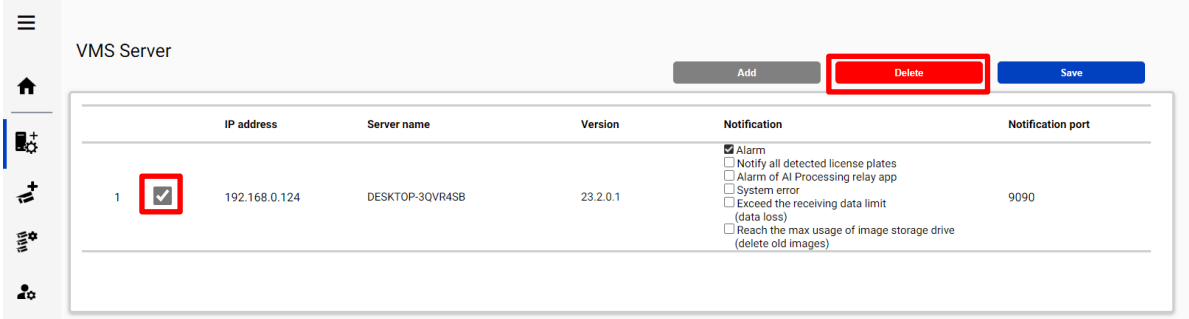
STEP1

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 Plug-in.

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

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



STEP2

Restart process (Refer to 4.3.3)

5.3. Update registered camera’s information

[Important]

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

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

* The settings are below.

- Camera’s settings. (ex. IP address, Camera name)
- Camera’s extension software settings.

(ex. Installing and uninstalling camera’s extension software, Line name of AI-VMD)

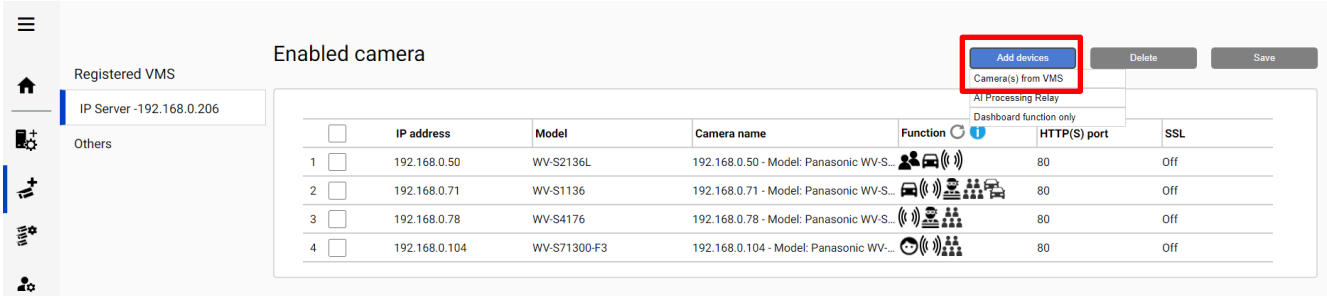
5.3.1. Update camera and extension software settings

STEP1

Change settings using iCT. (Refer to 4.1)

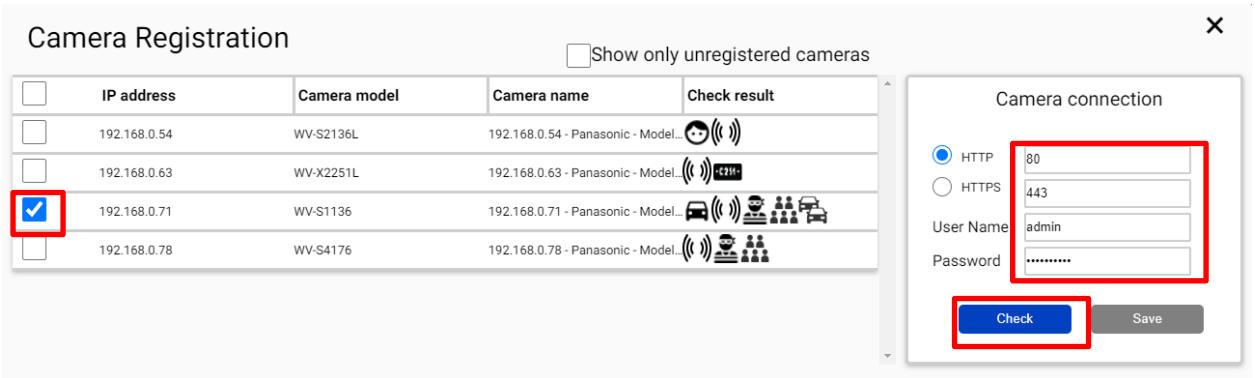
STEP2

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



STEP3

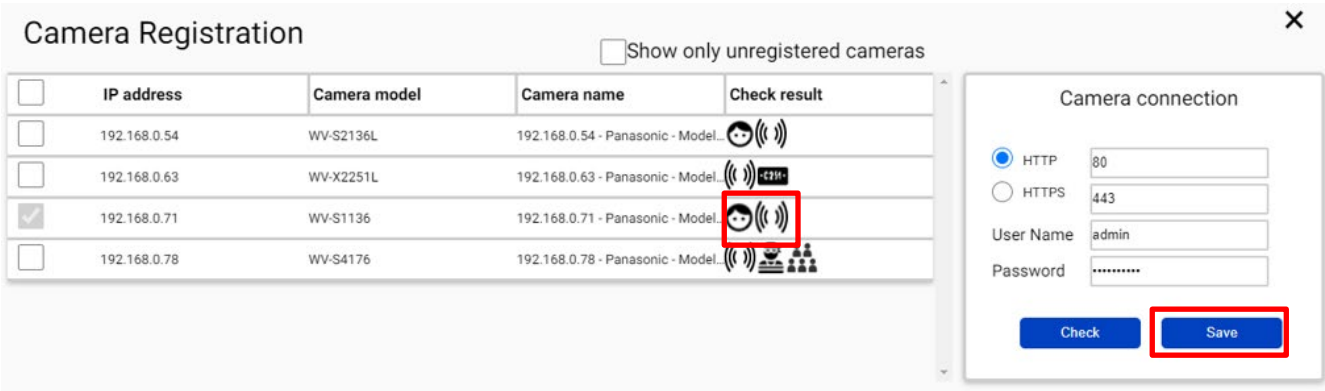
Select the camera and input credentials and [Check].



STEP4

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

(See 4.3.2.3 about the meaning of icons).



STEP5

Restart process (Refer to 4.3.3)

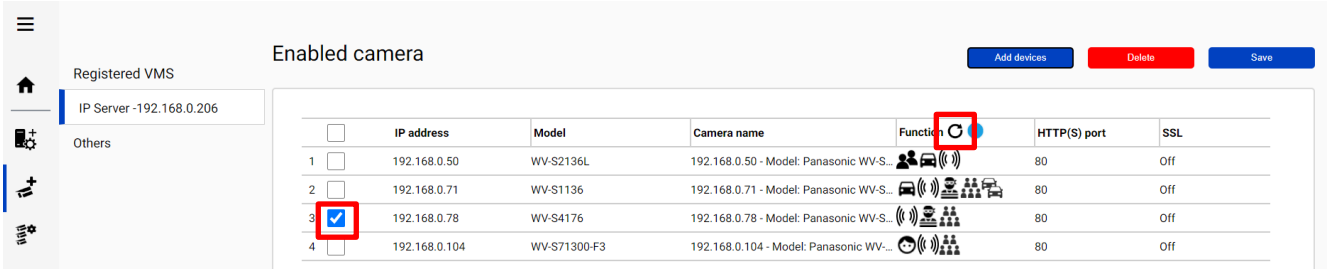
5.3.2. Update extension software settings

STEP1

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

STEP2

Check the target camera and click on Register Cameras screen.



Note)

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

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

STEP3

Confirm the icons for Check result is changed.

(See 4.3.2.3 about the meaning of icons).

5.4. Uninstall the system

5.4.1. Uninstall 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.

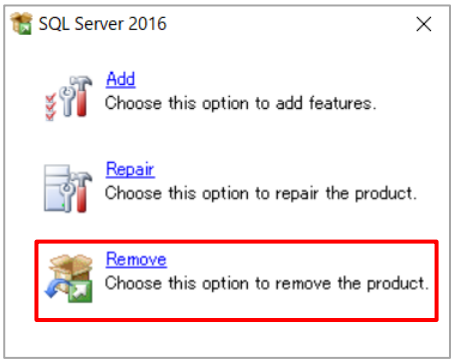
5.4.1.1. Uninstall SQL Server instance of i-PRO Active Guard server

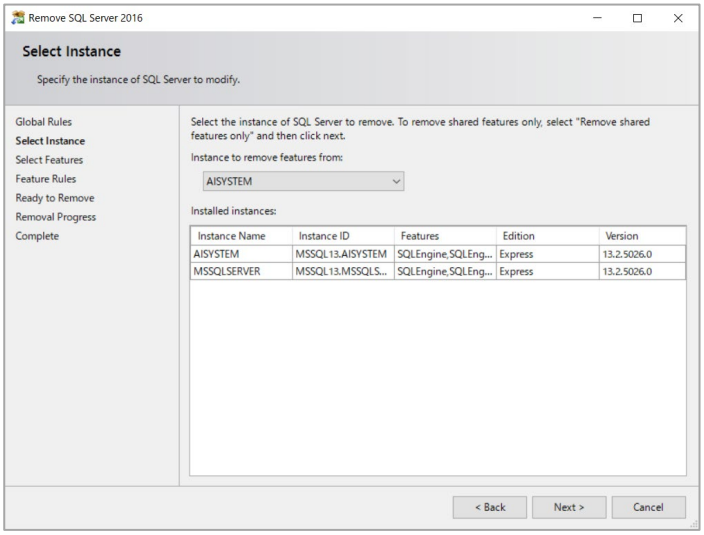
・If you select "Install a new SQL Server instance" in database selection for installation.

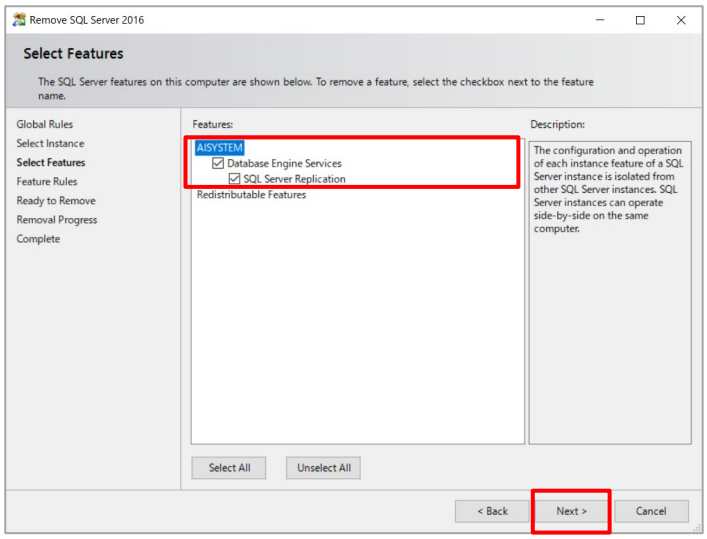
STEP1

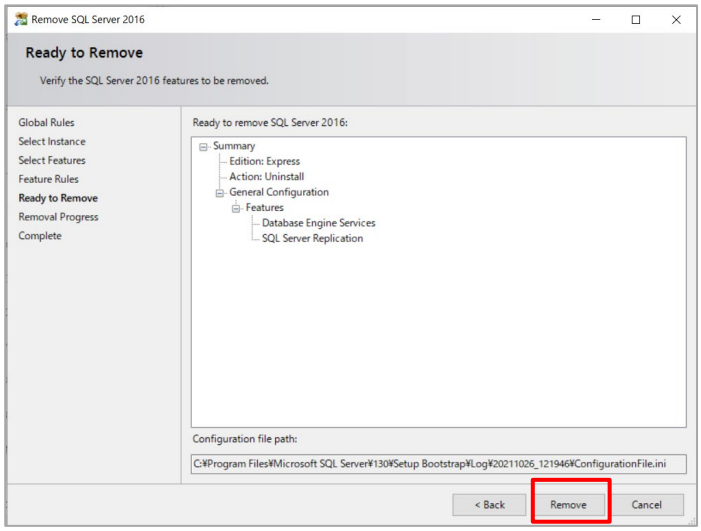
Find [Microsoft SQL Server 2016 (64 bit)] or [Microsoft SQL Server 2019 (64 bit)] and [Uninstall].

Select [Remove] and delete “AISYSTEM” instance.









Note)

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

STEP2

Delete “C:¥Program Files¥Microsoft SQL Server¥MSSQL13. [The instance name you set by install tool]” folder or “C:¥Program Files¥Microsoft SQL Server¥MSSQL15.AYSYSTEM” folder.

Note)

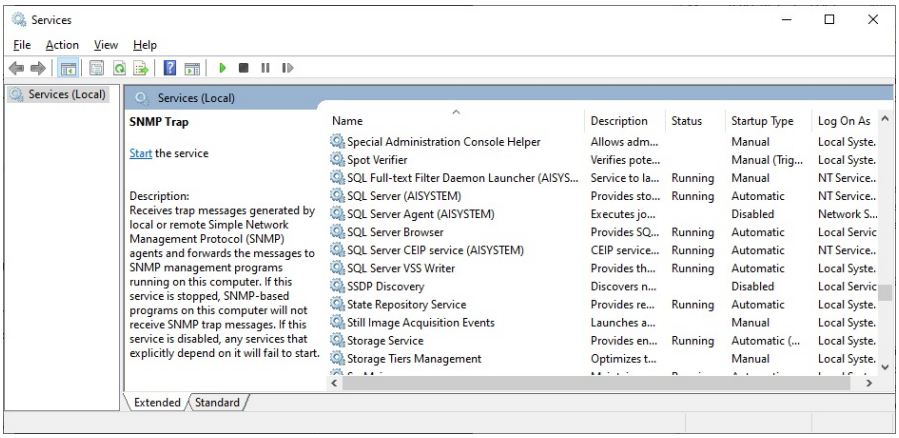
If any of the following services remain after uninstallation, please remove them manually.

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

(1) How to display services

Please start the service application in the following folder

C:¥ProgramData¥Microsoft¥Windows¥Start Menu¥Programs¥Administrative Tools

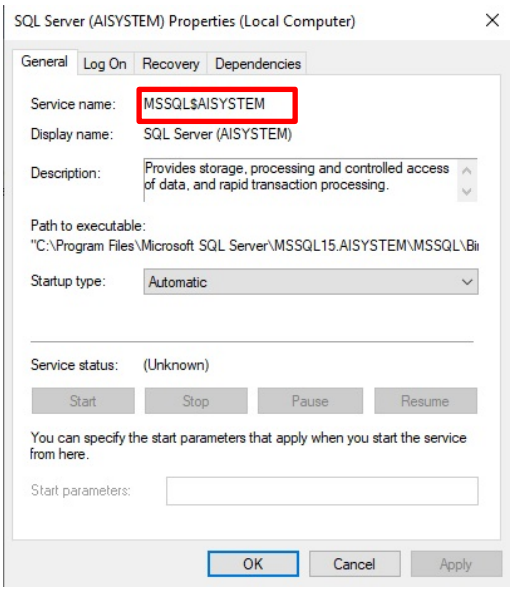


(2) How to delete a service

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

5.4.1.2. 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 XProtect Management client (Right click hard ware and select [Edit Hardware]).
Once deleting cameras from XProtect 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 i-PRO Active Guard server’s IP address

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

STEP1

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

STEP2

Update configuration for Connection to i-PRO Active Guard server from Plug-in (Refer to 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
- Administrator username and password

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

5.6.1. Backup process

STEP1

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

STEP2

Start – Windows Administrative Tools – Services.
Right click and stop for “MultiAICameraService,” “MultiAISupportProcessManagementService” and “SQL Server (AISYSTEM),” respectively.

STEP3

Browse to SQL Server data save path (set by install tool at 4.3.1.) .
Copy “ai_db.mdf,” “aicam.mdf,” “support_db.mdf,” ai_db_log.ldf,” “aicam_log.ldf,” “support_db_log.ldf,” “bi.mdf” and “bi_log.ldf” to safe location (i.e.: a USB drive, a NAS device, another server, etc.).

Default SQL Server data save path is below:

SQL server 2016

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

SQL server 2019

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

STEP4

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

STEP5

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

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

STEP6

Start – Windows Administrative Tools – Services.
Right click and run for “MultiAICameraService,” “MultiAISupportProcessManagementService” and “SQL Server(AISYSTEM),” respectively.

STEP7

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

5.6.2. Restore process

STEP1

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

STEP2

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

STEP3

Start – Windows Administrative Tools – Services.
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”

STEP5

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

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

STEP6

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

STEP7

Start – Windows Administrative Tools – Services.

Right click and run for “SQL Server(AISYSTEM).”

STEP8

Execute “C:¥MultiAI¥tools¥restore_user¥restore_user.bat” as administrator.

Note)

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

STEP9

Right click and run for “MultiAICameraService,” “MultiAISupportProcessManagementService,” respectively.

STEP10

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

5.7. Reset administrator account

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

Execute “C:¥MultiAI¥tools¥ChangeAdminPassword¥ChangeAdminPassword.exe” as administrator and set credentials.

5.8. Upgrade SQL server to Standard Edition

You can determine if you need Standard Edition from 3.3.

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

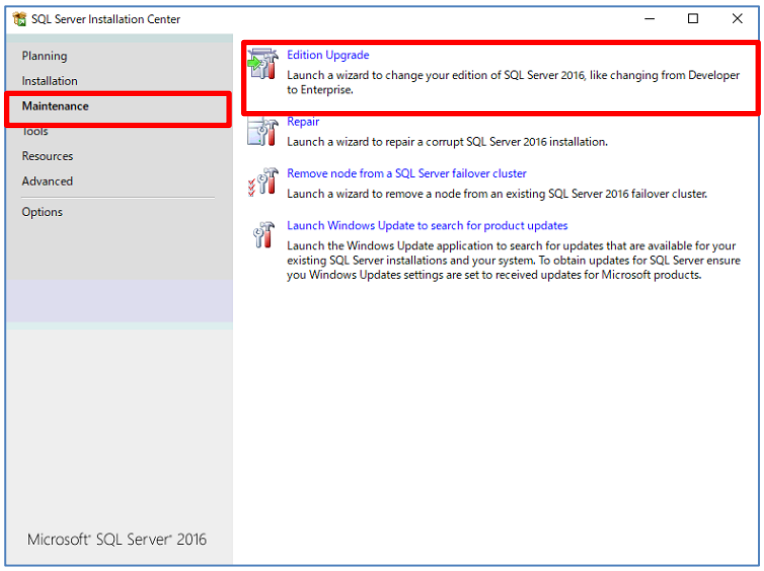
i-PRO Active Guard server software need to be installed in advance.

STEP1

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

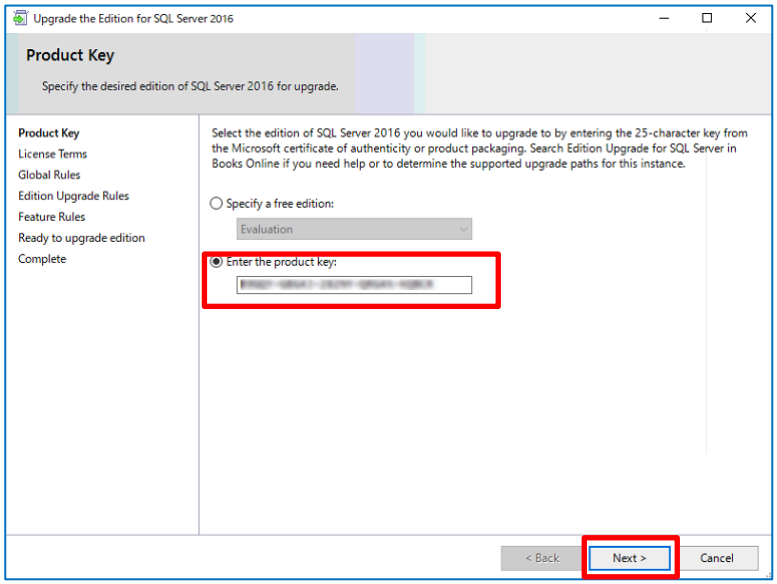
STEP2

Select [Edition Upgrade] from Maintenance.



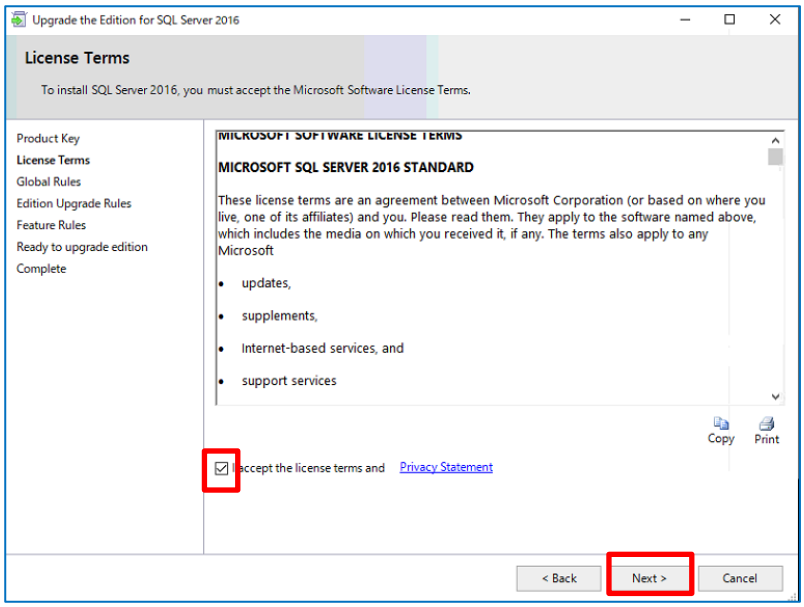
STEP3

Confirm product key is shown and click [Next].



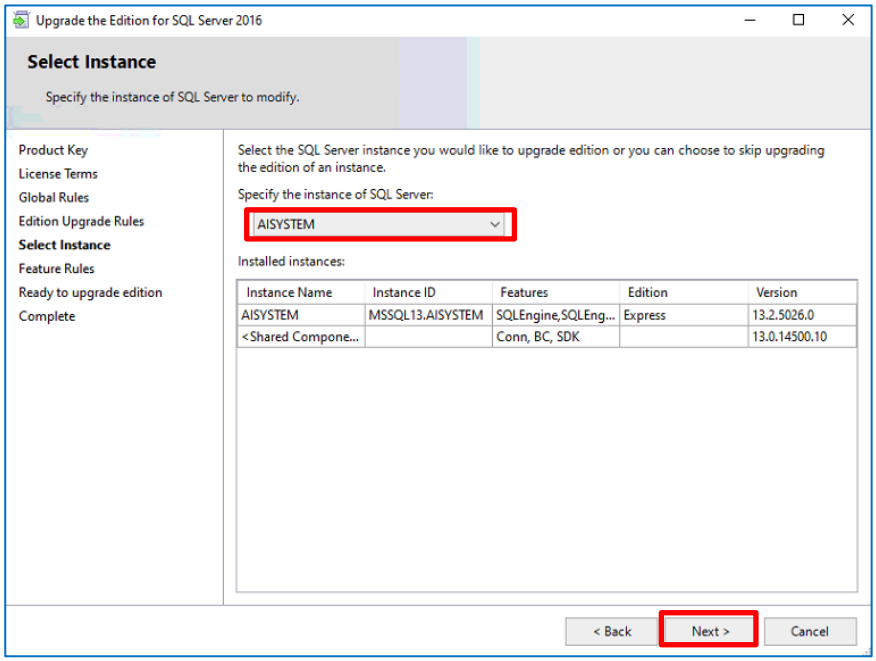
STEP4

Check for license term and click [Next].



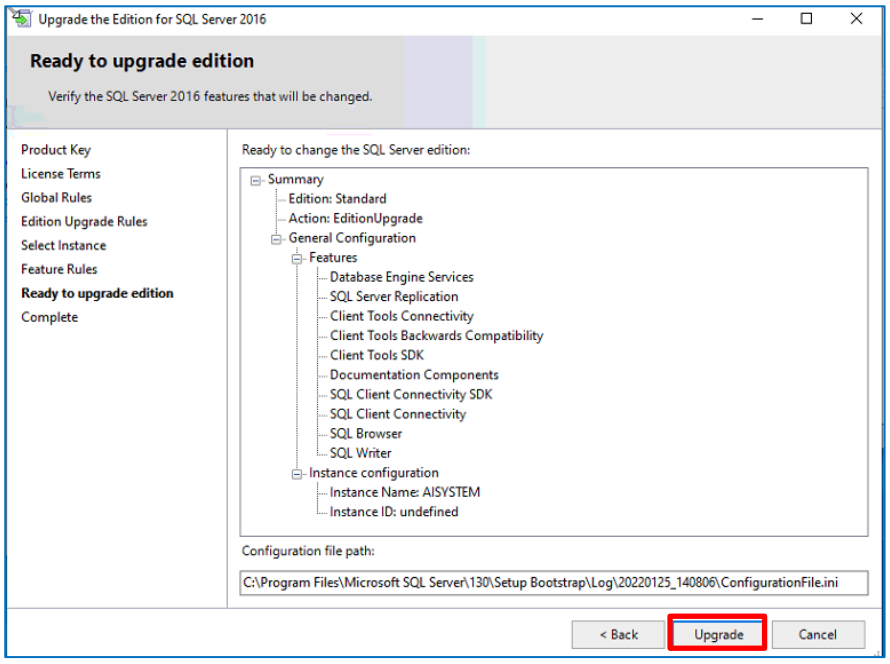
STEP5

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



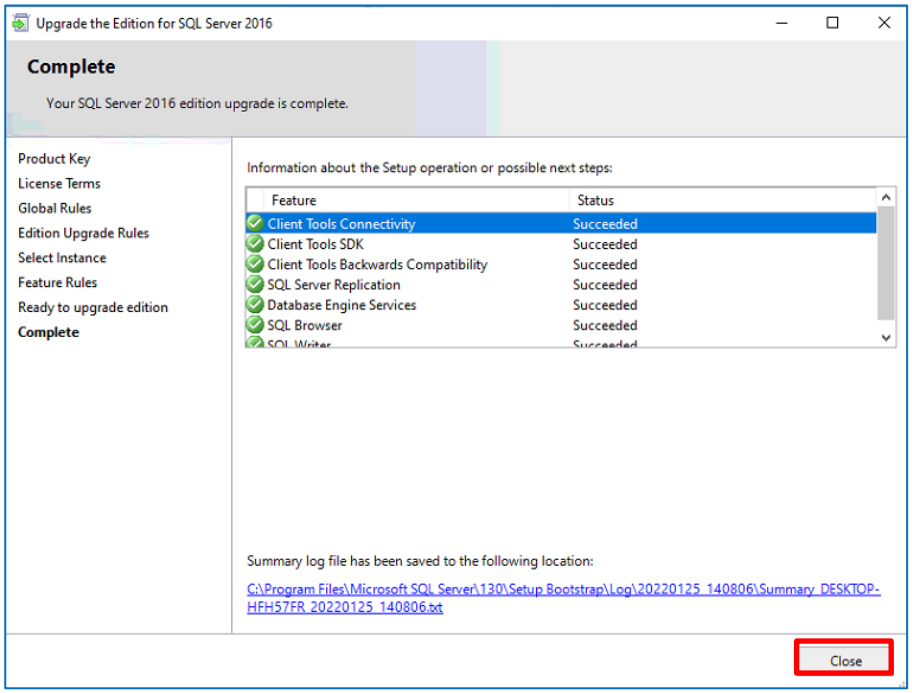
STEP6

Click [Upgrade]



STEP7

Click [Close]



6. Troubleshooting

6.1. Trouble shooting for Installation and Setup

Problem	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.	5.4.1
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.	5.4.1 5.4.1.1 5.4.1.2
	Check if the file path length of install package is less than 120 and launch installer as administrator.	4.3.1
	When you use Window 10, version 20H2 and the Microsoft Edge browser of any version from 84.0.522.52 through 86.0.622.55, update Edge browser. Ref.https://docs.microsoft.com/en-us/troubleshoot/sql/install/error-set-up-update-instances	-
	If the installation fails even after restarting the PC, please execute "¥03_SQL¥SQLEXPRADV_x64_ENU¥1033_ENU_LP¥x64¥Setup¥SQLSUPPORT.MSI". And then, execute "MultiAIStartup.exe" again.	
Cannot access i-PRO Active Guard configuration.	Did you access “http://<ip>:8092” ? “https://<ip>:8092” is correct. When you set another port number, another software use 8092 or you changed after installation, enter the port number.	4.3.2.1
	Supported browser is Microsoft Edge 85(or later), Chrome 83(or later) and Firefox 95(or later.)	3.2

Problem	Cause and solution	Refer
	Please confirm related service is existing on PC that i-PRO Active Guard server is installed. Start – Windows Administrative Tools – Services. - MultiAICameraService - MultiAISupportProcessManagementService If these services do not exist, please perform the following steps. 1. Uninstall i-PRO Active Guard server. 2. Delete SQL instances or database related to i-PRO Active Guard server. 3. Confirm related services does not exist. If related services remain, start command prompt with administrator privileges and delete services with following command. sc delete MultiAICameraService sc delete SupportProcessManagementService 4. Reinstall i-PRO Active Guard server.	5.4.1 5.4.1.1 5.4.1.2 4.3.1
	Please confirm related service is running on PC that i-PRO Active Guard server is installed. Start – Windows Administrative Tools – Services. - MultiAICameraService - MultiAISupportProcessManagementService - SQL Server (instance name) If stopped, right click and run	5.6.1
Cannot log in to i-PRO Active Guard configuration	If you forget administrator account, reset account from PC that i-PRO Active Guard server is installed.	5.7
Cannot register VMS.	Check if IP address, port, protocol and credentials are correct.	4.3.2.2
	Supported version of XProtect is 2022R1 or later	2.2
	Basic User registration on XProtect Management Client is required in advance.	4.2.3
	API Gate way should be installed on XProtect Management server.	-

Problem	Cause and solution	Refer
Cannot register cameras	Check if IP address, port, protocol and credentials are correct.	-
	Check if extension software is installed to camera in advance.	4.1
	Check if cameras are registered to XProtect in advance.	4.2.1
	Check if “Digest” is used for authentication on camera side. ([Settings] - [User mng.] - [User auth.])	-
	Please try updating the camera’s firmware and AI application firmware	-
Cannot connect from Plug-in to i-PRO Active Guard server.	Check if IP address, port, protocol, and credentials are correct. Port and credentials can be changed from i-PRO Active Guard configuration.	4.3.5.2 4.4
	Please confirm related service is existing on PC that i-PRO Active Guard server is installed. Start – Windows Administrative Tools – Services. - MultiAICameraService - MultiAISupportProcessManagementService If these services do not exist, please perform the following steps. 1. Uninstall i-PRO Active Guard server. 2. Delete SQL instances or database related to i-PRO Active Guard server. 3. Confirm related services does not exist. If related services remain, start command prompt with administrator privileges and delete services with following command. sc delete MultiAICameraService sc delete SupportProcessManagementService 4. Reinstall i-PRO Active Guard server.	5.4.1 5.4.1.1 5.4.1.2 4.3.1
Face, People, Vehicle or license plate images cannot be searched from Plug-in (camera is not shown for camera list).	Camera registration to i-PRO Active Guard server should be done after registering camera to XProtect. When you re-register the camera to XProtect after registration to i-PRO Active Guard server, you need to also re-register the camera to i-PRO Active Guard server (delete and then register again.)	5.2.1 5.1.1

Problem	Cause and solution	Refer
Face, People, Vehicle or license plate images cannot be searched from Plug-in (the number of search result is 0).	Receiving status from each camera can be confirmed from i-PRO Active Guard configuration. Check network connection between camera and i-PRO Active Guard server, last received time, last diagnosis time. If the result is not expected, check if schedule setting on camera side for extension software is on. note) License plate detection is not support “last diagnosis time”.	4.3.8.1
	Check process status of i-PRO Active Guard server. If some process is stopped, restart the process.	4.3.8.2
	Check if schedule setting on camera side for extension software is on.	-
	Configuration issues in a multiple network environment Check if the camera is connected to a network that is not local to the server.	-
	Firewall configuration issues. Check if i-PRO Active Guard server’s program are listed on “Allowed apps and features” for firewall settings.	-
Playback time is incorrect.	Check if PC time of camera, i-PRO Active Guard server and VMS server are synchronized.	-
There is no recorded video at the time the object was detected	If motion recording is set, adjust the sensitivity. Object detection is also done when there is no motion.	-
Notifications such as Registered face detection or registered people detection cannot be shown	Check if rules and event, and actions (e.g., Trigger alarm) are configured.	4.7
	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
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 staring operation

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

Problem	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 process stops again, download logs (Refer to 4.3.8.5) and contact the system administrator.
Camera disconnect	4355,4356,4358	Check network connection between camera and i-PRO Active Guard server. Check camera works (recording to VMS and live monitoring) If problem continues after restart camera and i-PRO Active Guard server manually (Refer to 4.3.8.2), download logs (Refer to 4.3.8.5) and contact the system administrator.
Face, People, Vehicle or license plate Images cannot be searched from Plug-in (the number of search result is 0).	66052,66053	Receiving status from each camera can be confirmed from i-PRO Active Guard configuration. Check network connection between camera and i-PRO Active Guard server, last received time, last diagnosis time. If the result is not expected, check if schedule setting on camera side for extension software is on.
False detection (Not face, people or vehicle is searched)	-	To avoid false detection, configure mask area using iCT (Refer to 4.1).

Problem	Error code	Cause and solution
High CPU usage, memory usage or disk access	65793,65794 65796,65797	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. 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) If the usage of i-PRO Active Guard server is low and those of whole PC is high, check the influence of other software.
Reach the max disk space of image (delete old images)	65795	Old images have been deleted by exceeding the settings for “Max usage of image storage drive”. 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.
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. Open-source software

This product uses open-source software.

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

7.2. How to use 3rd party extension software

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

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

7.2.1. Required software version

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

7.2.2. i-PRO Active Guard server configuration

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

STEP1
Edit configuration file to register the extension software.
Open the file “C:¥MultiAI¥Backup¥3rdpartyApp.config” in the PC that i-PRO Active Guard server software is installed.

Input the extension software name and event name, and also enable the line by removing ";" at the beginning of the line.
Ex.
application_name_1 = "SampleApplication"
event_name_1 = "SampleDetection"

Save and close the file after editing.

Note)
Up to 10 extension software and 10 events can be registered in a system.
The extension software name and event name of the extension software will be shown on application list when released. It will not work if any other name is configured.

Note)

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

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

Ex.

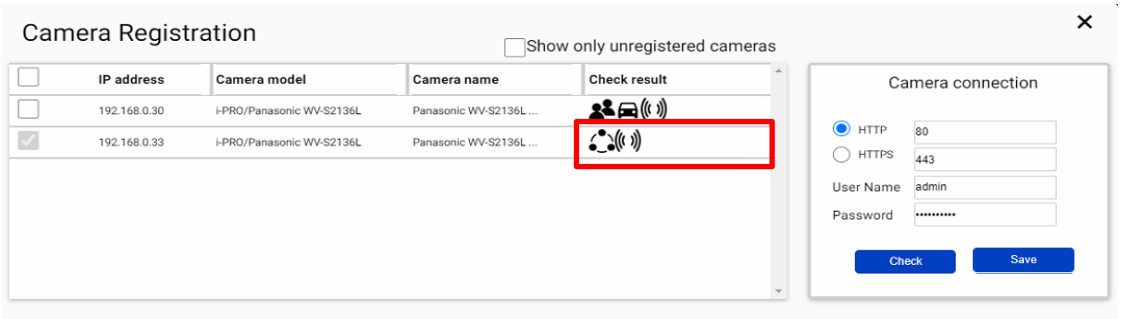
lpr_application_name = “ SampleApplication “

* For LPR app, "event_name" not required.

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

STEP2

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



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

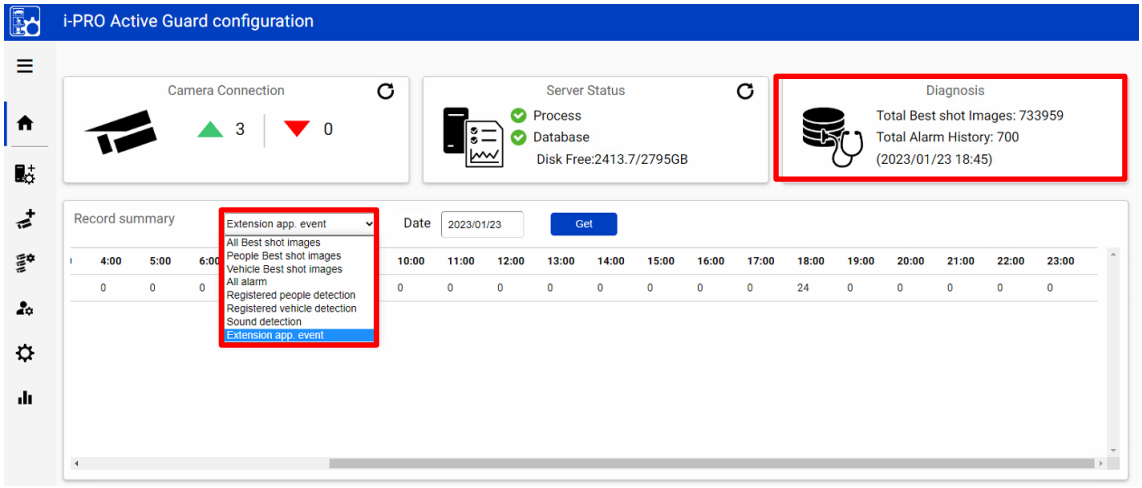
Note)

For LPR app is checked, icon C251 will be shown.

STEP3

Check if an event has occurred (Optional).

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



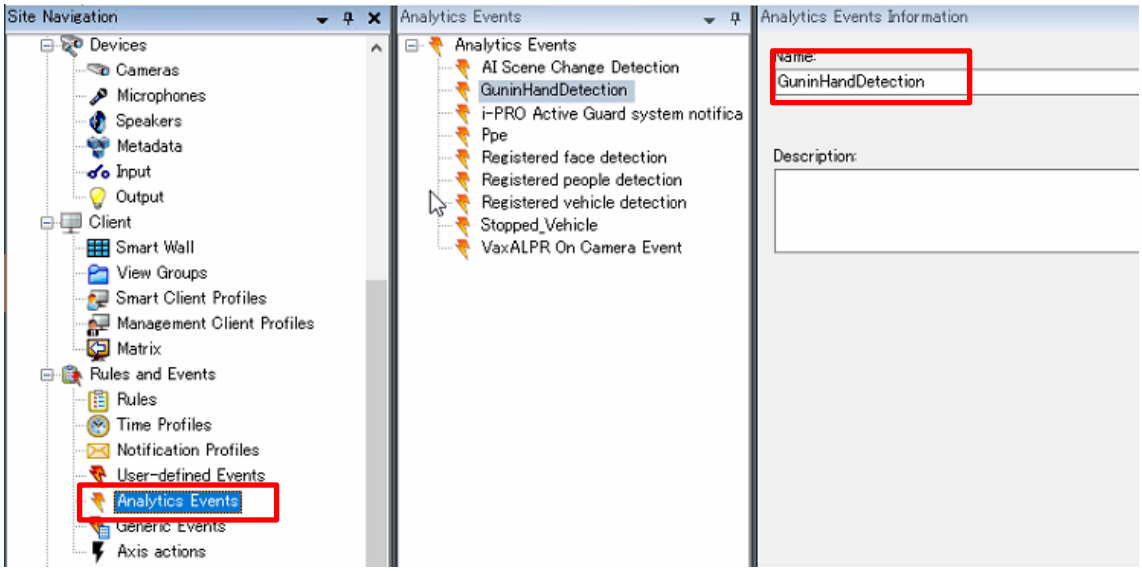
* It takes about 15 min for an event to appear on the screen after it has occurred.

7.2.3. Configure Analytics Event and Alarm definitions (mandatory)

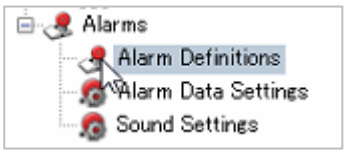
Similar to the procedure described in 4.5, 3rd party extension software event can be used as Analytics event.

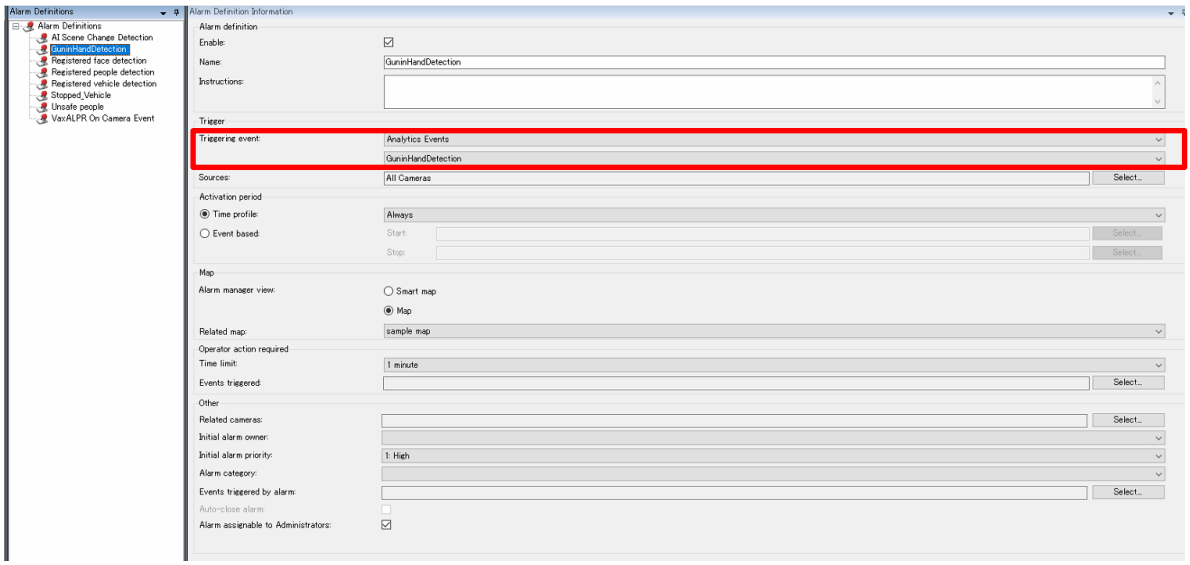
Add the extension software event for [Rules and Events]-[Analytics Events].

Name should be matched with the event name registered in i-PRO Active Guard server.

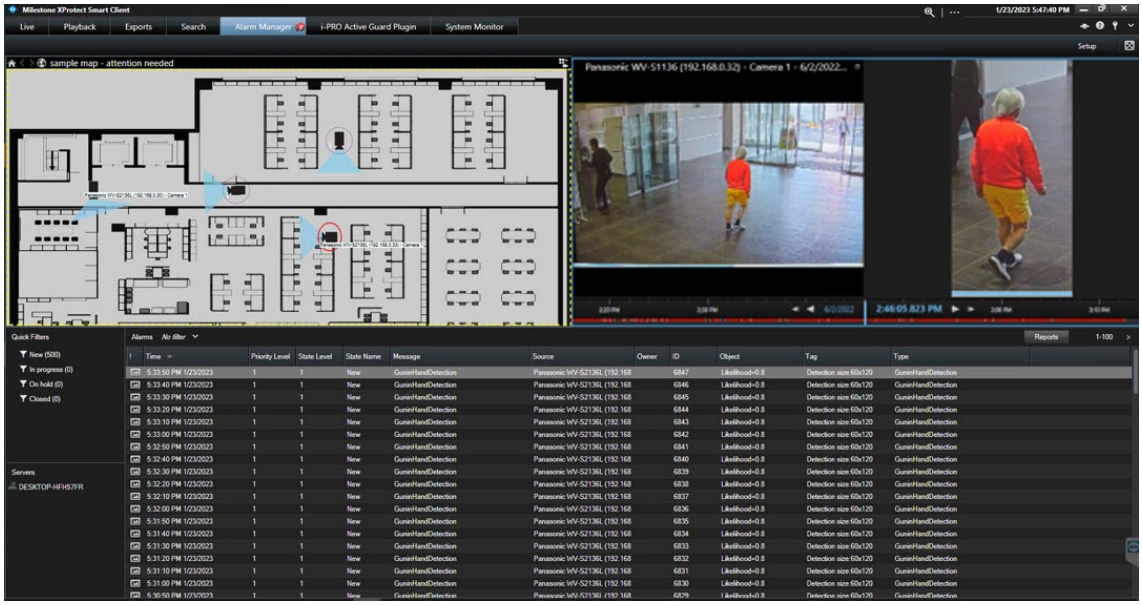


Add the alarm definitions [Alarm]-[Alarm Definitions]. Registered Analytics Events should be selected for “Triggering event”





Extension software event will be shown in XProtect Smart client when occurred.



7.3. Specifications

The details of the specifications are as follows.

Scale	Supported camera	i-PRO network camera with AI engine
	Number of cameras	1 to 300CH when installed in dedicated server. (AI Face Detection is up to 60)
	Number of clients	No limitation (depending on limitation of VMS)
	Number of Recording server	- (Management server should be registered)
	Number of i-PRO Active Guard server per a client	No limitation (Depending on capability of whole system)
Supported AI applications	For plugin	AI Face Detection / AI People Detection / AI Vehicle Detection / LPR
	For dashboard	AI Face Detection, AI People Detection, AI Vehicle Detection, AI-VMD/AI People Counting for 360-degree fisheye camera, AI-VMD, On-site Learning, AI Occupancy detection, LPR Counting.
Store	Retention period	Max. 31 days limitation for face, people, vehicle or license plate data / Max. 92 days limitation for count/heatmap/ statistics data * Max. 366 days by upgrading SQL Server Standard edition or higher
Post Search	Filter	People, Vehicle, LPR (attribute, date & time, camera, moving direction) Face (similar face, date & time, and camera)
	Similar search	Yes (by same attribute information) *People and Vehicle (by same attribute information) and Face
	Sort	Descending date, Ascending date, Similarity (Face), Only high Relevance (People and Vehicle)
Alarm	Watch list alarm	Up to 1,000 faces, up to 12 people attributes, up to 12 vehicle attributes. There is no limitation to the number of license plate and license plate group (*depending on the system design)., Up to 12 LPR attributes or license plates group.
	Detection alarm	AI Scene changes detection *AI-VMD are supported in XProtect (not plug-in)
	Related function	

Playback/ Export	Playback	Playback video around the time of the best shot on full and multi-view
	Export video	Save best shot image, Export video from Recording server
	Export Search result	HTML
Dashboard	Supported browser	Microsoft Edge, Google Chrome, and Firefox
	Chart	People counting, occupancy statistics and heatmap when using AI-VMD/AI People Counting for 360-degree fisheye camera. People counting and vehicle counting when using AI-VMD. People counting and occupancy statistics when using AI Occupancy Detection. On-site learning object counting when using AI-VMD with On-site Learning application. Data update interval is minimum 5 seconds for people/ vehicle/On-site learning object counting and 1 min for heat map/ LPR Counting. Age and gender statistics when using AI Face Detection. Data update interval is minimum 1 min. People attribute statistics when using AI People Detection. Data update interval is minimum 1 min. Vehicle attribute statistics when using AI Vehicle Detection. Data update interval is minimum 1 min.
	Customize	Contents, display size, location for each chart. 3 Layouts per user can be saved and 24 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