



Setup Instructions

i-PRO Multi-AI System for Genetec



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1. Preface

1.1. Limitation of liability

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

1.4. Abbreviations

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

Microsoft® Windows® are described as Windows.

1.5. Disclaimer of warranty

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

- (1) ANY DAMAGE AND LOSS, INCLUDING WITHOUT LIMITATION, DIRECT OR INDIRECT, SPECIAL, CONSEQUENTIAL OR EXEMPLARY, ARISING OUT OF OR RELATING TO THE PRODUCT;
- (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 USER NAME AND PASSWORD).
- (7) ANY PROBLEM, DAMAGE OR COMPLAINT CAUSED BY THE OPERATION BY A MALICIOUS THIRD PARTY.

1.6. 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 user name 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.

1.7. Precaution for use

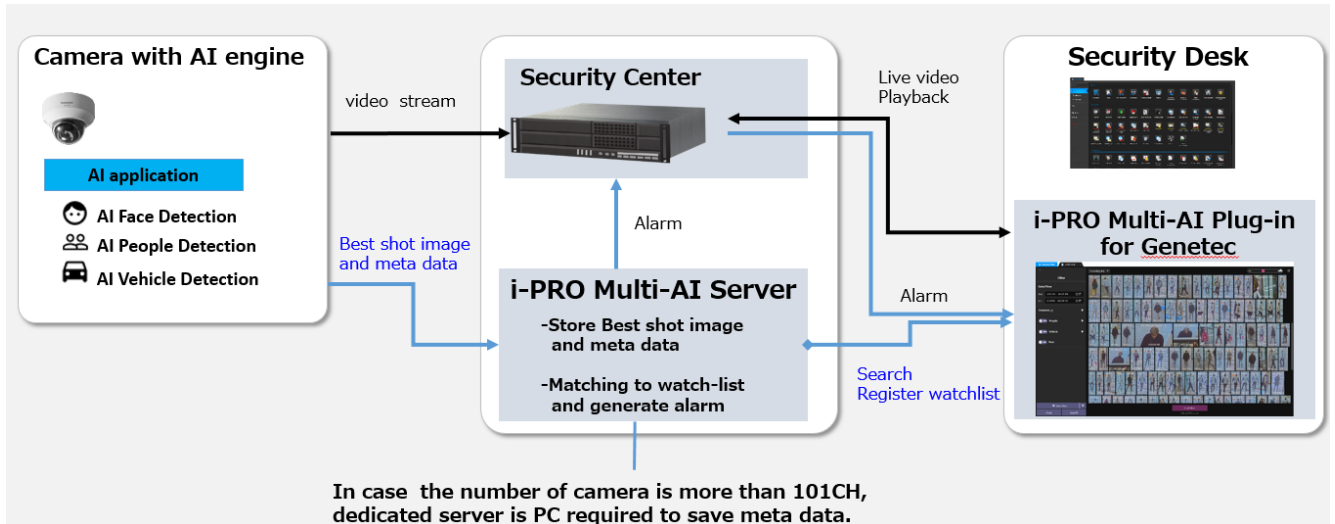
- The administrator should properly manage authentication information such as cameras, recorders, client software, Windows, databases, etc. so as not to leak to third parties.
- Always change passwords for cameras, recorders, client software, etc. from the default values, and perform appropriate management.
- 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. Multi-AI server software will not start, functions such as search, alarm notification, or watch registration will not be worked.

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

2. Introduction to i-PRO Multi-AI System

2.1. System overview



AI application or AI function on cameras transmit video stream to Security Center and transmit Best shot images and meta data to i-PRO Multi-AI server (hereinafter referred to as "Multi-AI server").

Multi-AI server stores those data and also generate alarm when face or people is matched to watchlist.

i-PRO Multi-AI Plug-in for Genetec (hereinafter referred to as "Multi-AI plug-in") which is the plug-in software for Security Desk can search best shot images, register watchlist, show live video, recorded video.

2.2. Software components and supported version

Camera's AI function

- AI Face Detection: Camera's extension software. V1.00 or later is supported.
- AI People Detection: Camera's extension software. V1.00 or later is supported.
- AI Vehicle Detection: Camera's extension software. V1.00 or later is supported.

Please see https://security.panasonic.com/products_technology/products/i-pro_ai_application/ for more information.

Cameras firmware

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

camera model	Version
WV-S1136,WV-S2136,WV-S2136L,WV-S2236L	1.00 or later
WV-S1536L,WV-S1536LN,WV-S2536L,WV-S2536LN	1.11 or later
WV-X1571L,WV-X2571L,WV-X2271L,WV-X1551L,WV-X2551L	1.50 or later

VMS and Multi-AI server/plugin

Software	Version
Genetec Security Center	SC 5.10.1.0 or later
i-PRO Multi-AI Server/ i-PRO Multi-AI plugin for Genetec	V1.0.0 or later

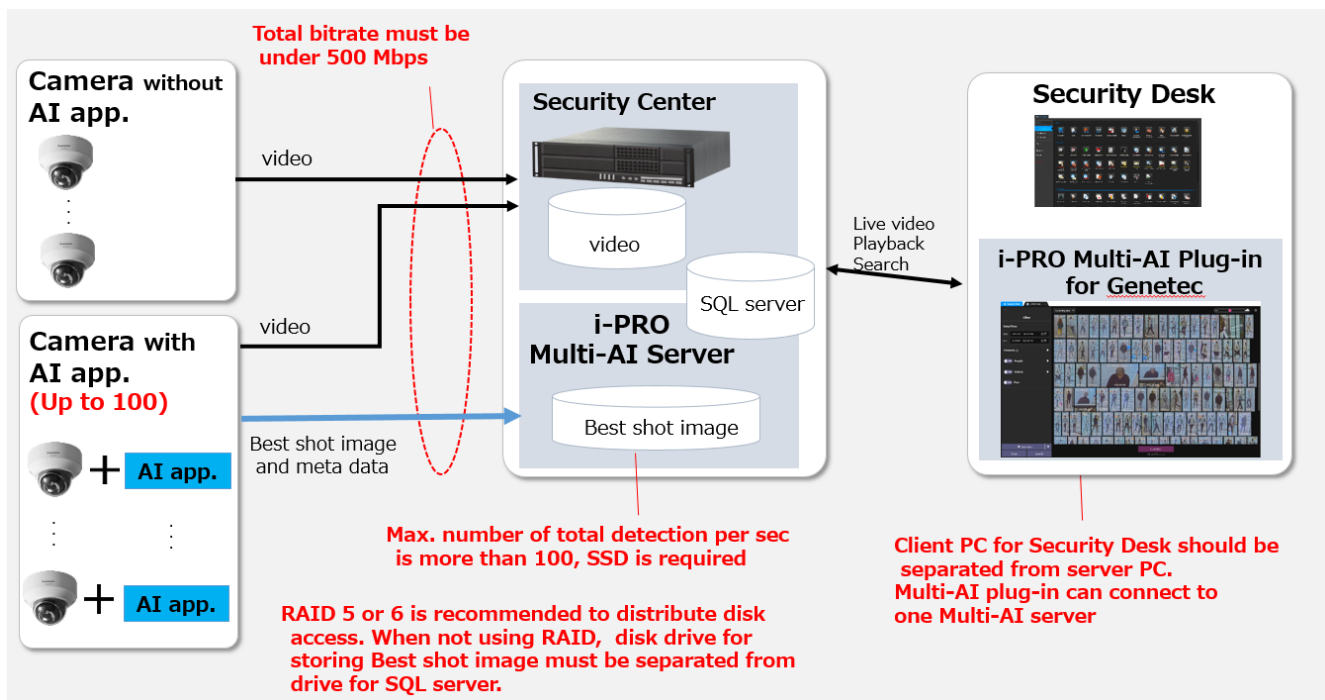
3. System design

3.1. System architecture

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

	Multi-AI server installed with Security Center	Multi-AI server installed In dedicated server
The number of cameras	100	300
Total bitrate	500Mbps for video and Best shot images	500Mbps for Best shot images

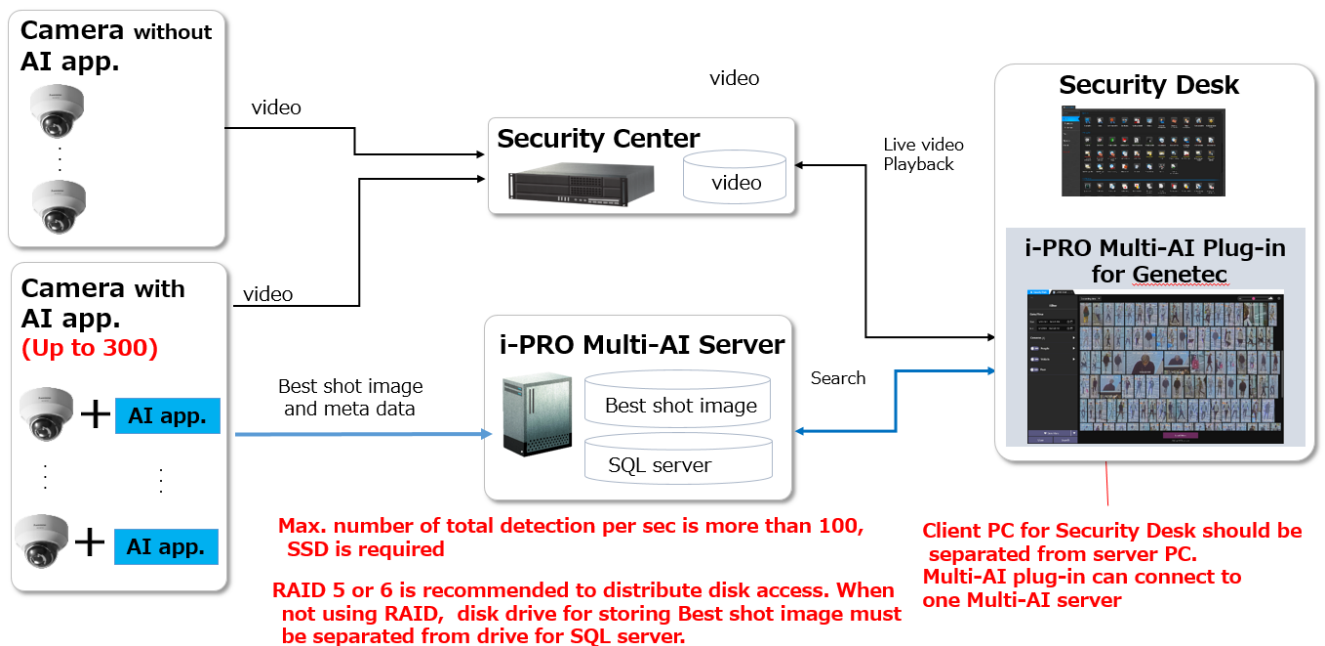
3.1.A Multi-AI server installed to PC with Security Center



There are some conditions for installing Multi-AI Server to the server PC with Security Center.

- (1) The number of cameras with AI engine is up to 100
- (2) Total bitrate that server PC receives must be under 500Mbps. Both bitrate of video data and Best shot images should be calculated.
Bitrate of Best shot images can be calculated in 3.3.
- (3) RAID 5 or 6 is recommended to distribute disk access. When not using RAID, disk drive for storing Best shot image must be separate from drive for storing video and SQL server.
- (4) Client PC should be separated from server PC. Multi-AI plug-in can connect to one Multi-AI server.

3.1.B Multi-AI server installed to dedicated server PC



When Multi-AI Server is installed in dedicated server,

- (1) The number of cameras with AI engine is up to 300.
- (2) RAID 5 or 6 is recommended to distribute disk access. When not using RAID, disk drive for storing Best shot image must be separate from drive for SQL server.
- (3) Client PC should be separated from server PC. Multi-AI plug-in can connect to one Multi-AI server.

3.2. System requirement

3.2.1 System requirement for i-PRO Multi-AI server

Hardware requirement

	Requirement
Up to 100 cameras Multi-AI server installed with Security Center	<ul style="list-style-type: none">• Intel® Xeon® Silver 4210 2.2 GHz or better• 32 GB of RAM or more• 64 bit operating system Microsoft Windows Server 2016/2019 Standard Edition• GbE network interface card
Up to 100 cameras Multi-AI server installed in dedicated server	<ul style="list-style-type: none">• Intel® Core™ i7-9700 (4.9 GHz, 8 core 8 thread) or better• 32 GB of RAM or more• 64 bit operating system Microsoft Windows 10 Pro version 2004 or later , Microsoft Windows Server 2016/2019 Standard Edition• GbE network interface card
Up to 300 cameras Multi-AI server installed in dedicated server	<ul style="list-style-type: none">• Intel® Xeon® Silver 4208 2.1 GHz(8 core 16 thread) or better• 32 GB of RAM or more• 64 bit operating system Microsoft Windows Server 2016/2019 Standard Edition• GbE network interface card

Common software requirement

Category	Supported software
Database Engines	<ul style="list-style-type: none">• SQL server 2014/2016 Express/Standard Edition
Web browser for Configuration Tool	<ul style="list-style-type: none">• Microsoft Edge 85 or later• Chrome 83 or later

Disk drive considerations

When the maximum number of detection exceeds 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.

RAID 5 or 6 is recommended to distribute disk access. When not using RAID, 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 and vehicle should be under 8GB.” Check 3.3 to see if the Express edition is sufficient.

3.2.2 System requirement for Multi-AI plugin

Requirement(Recommended)
<ul style="list-style-type: none">● Intel® Core™ i7-9700 (4.9 GHz, 8 core 8 thread) or better● 8 GB of RAM or better● 64-bit operating system● 120 GB Solid State Drive for OS and Security Center applications, with a minimum of 6 GB of free disk space to install the Security Center client application● GbE network interface card● NVIDIA® GTX 1660 video card

Please also see the Security Center’s manual.

3.3. How to determine the system architecture

STEP1: The number of camera

When the numbers of cameras with AI People detection or AI Vehicle detection is no more than 100(AI Face detection is no more than 20), it may be possible that AI server is installed to PC with Security Center. Please continue to check STEP2.

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

STEP2: The number of extension software

To calculate the bitrate of Best shot, the number of extension software (Face, People and Vehicle) should be considered. 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
The number of extension software				
# of people/vehicle [per camera, per hour]	Max.			
	Average.			

Maximum number of detection in total [per sec]	
--	--

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

When “Maximum number of detection in total” is over 100, SSD is required.

STEP3 : Total bitrate server receives

Total bitrate of Best shot image [Mbps]	
Total bitrate of video recording for all cameras(*) [Mbps]	
Total bitrate that server PC receives [Mbps]	

If the "Total bitrate that server PC receives" exceeds 500Mbps, Multi-AI server should be installed in dedicated server PC.

STEP4: Retention period and storage

	Face	People	Vehicle
Retention period (day)			
Operating time (hours per day)			

Estimated used disk size for Best shot images[GB]	
Estimated used disk size for database[GB]	

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

3.4. Ports used in Multi-AI server

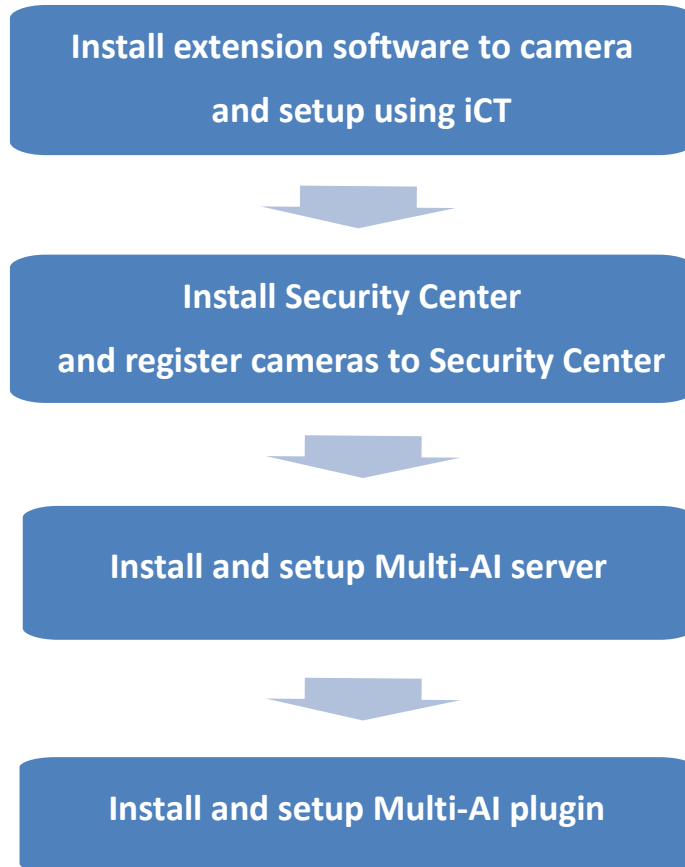
The following table lists the default network ports used by Multi-AI server.

These ports need to be allowed from firewall configurations.

Port number	Protocol	Port usage
1435	TCP	Connection to SQL server
8090	HTTP	Client plugin connection
8091	HTTPS	Client plugin connection
8092	HTTPS	Web configuration tool connection
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

Download the extension software and refer manual from

https://security.panasonic.com/training_support/documentation_database

4.2. Install and setup Security Center

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

Install Multi-AI plugin to Security Desk.

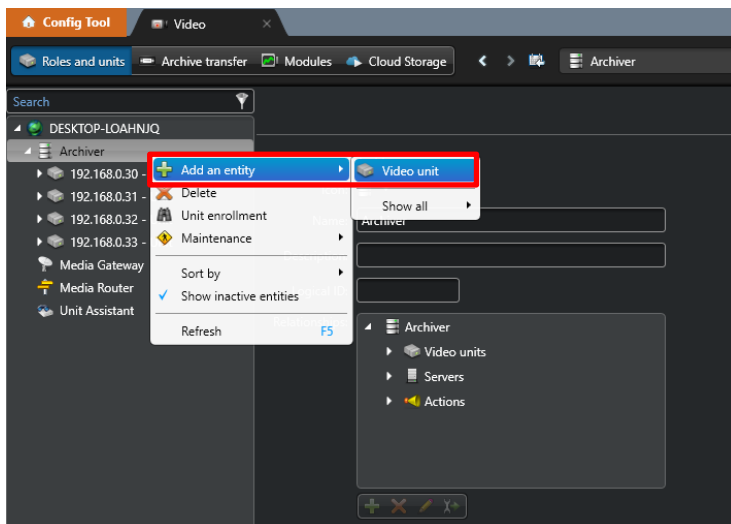
Register the camera in MAP as an Option setting

4.2.1. Install and register cameras to Security Center

Detail procedure about Security Center installation and basic setup are shown on Security Center's manual.

After installation, register AI cameras to Security Center using Config Tool.

(Genetec Security Center – [Config Tool] – [Video] – [Cameras])



4.2.2. Install Multi-AI plugin to Security Center

Download the installer from https://security.panasonic.com/training_support/documentation_database

Install “Multi-AI plugin for Genetec” software to PC that Genetec Security Center is installed.

4.2.2.1. Install

STEP1

Start “Control Panel” - “Administrative Tools” - “Services”.

Select “Genetec Server” and “Stop” in right-click menu.

STEP2

Launch the executable installer 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.

STEP3

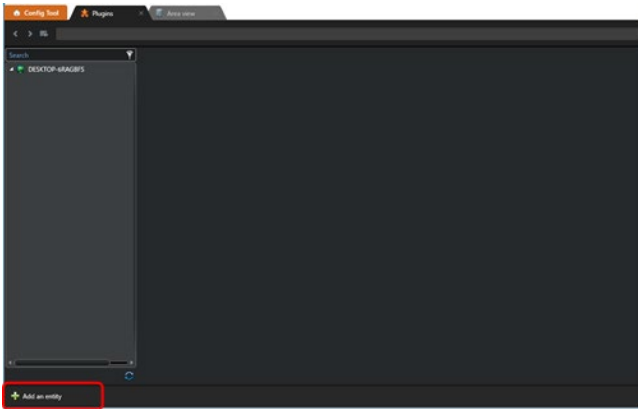
Start “Control Panel” - “Administrative Tools” - “Services”

Select “Genetec Server” and “Start” in right-click menu.

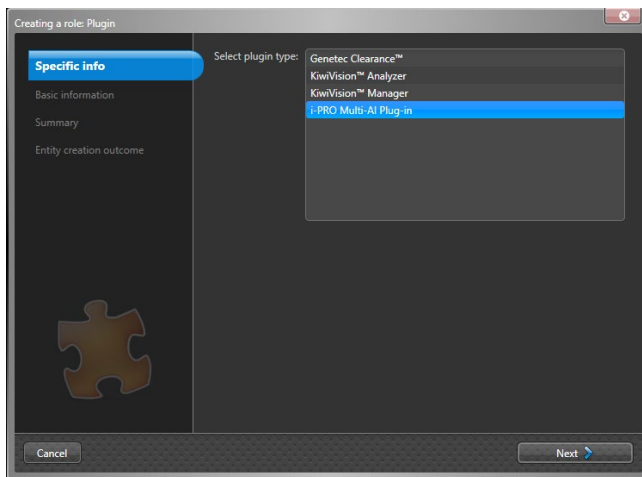
4.2.2.2. Configure plugin to Security Center



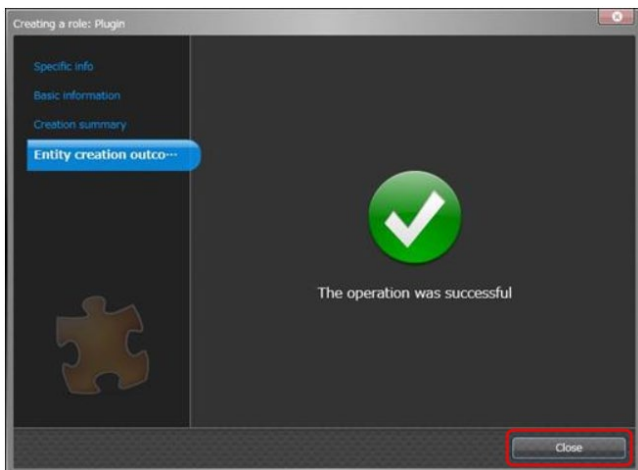
Connect Config Tool with Security Center. In the Config Tool site, click the [Plugins] in the [Tasks] menu.



Click the [Add an entity] button at the bottom left of the screen.



Select [i-PRO Multi-AI Plug-in] and [Next].



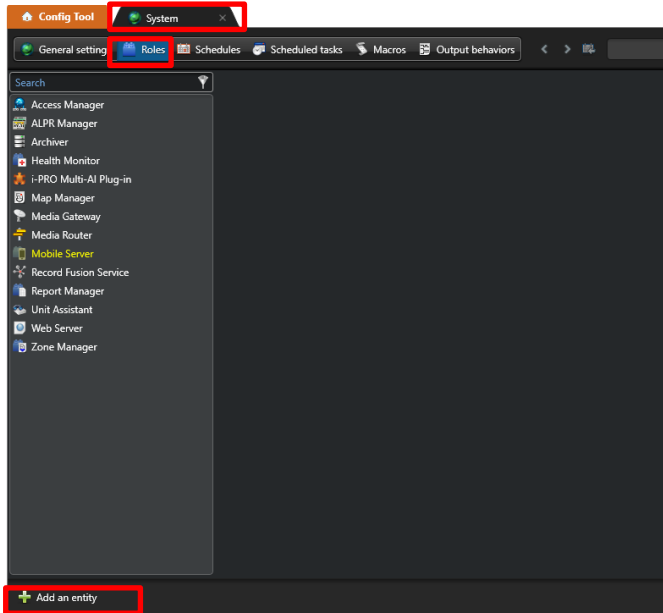
Install following the screen and [Close] when finished.

4.2.3. Configure the Web-SDK

STEP1

[Config tool] – [System] - [Roles] button.

Click the [Add an entity] button at the bottom left of the screen and select the [Web-based SDK].



Click the [Next] button in [Basic information], [Create] button in [Creation summary] and [Close] button in [Entity creation outcome].

STEP2

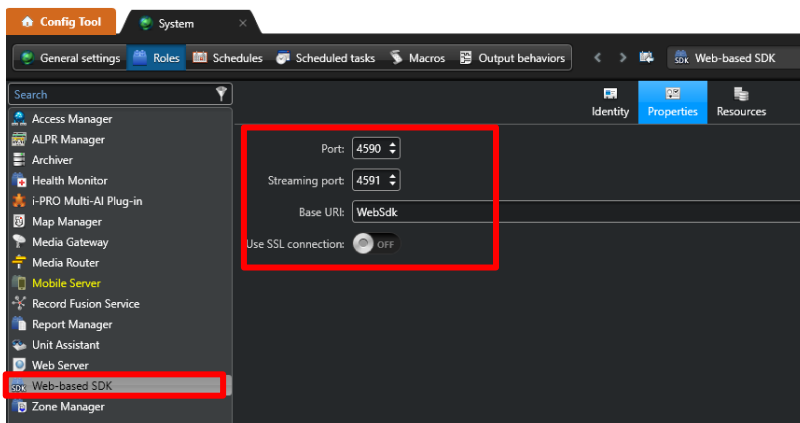
Confirm that [Web-based SDK] is displayed.

Click [Properties] in [Web-based SDK] and Setting as follows.

Port : 4590

Base URI : WebSdk

User SSL connections can be used when using SSL connections.

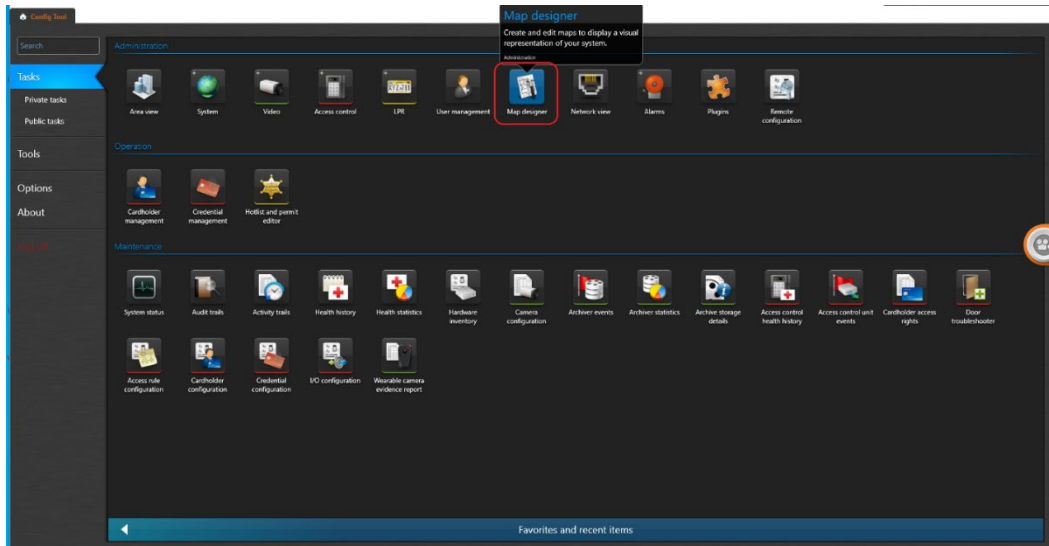


4.2.4. Register cameras to Map (optional)

Using maps, operator can easily found the location of each Best shot image on plugin screen.

See operation manual of Security Center in details.

([Config Tool] – [Map designer])



4.3. Install and setup Multi-AI server

Download the installer from https://security.panasonic.com/training_support/documentation_database

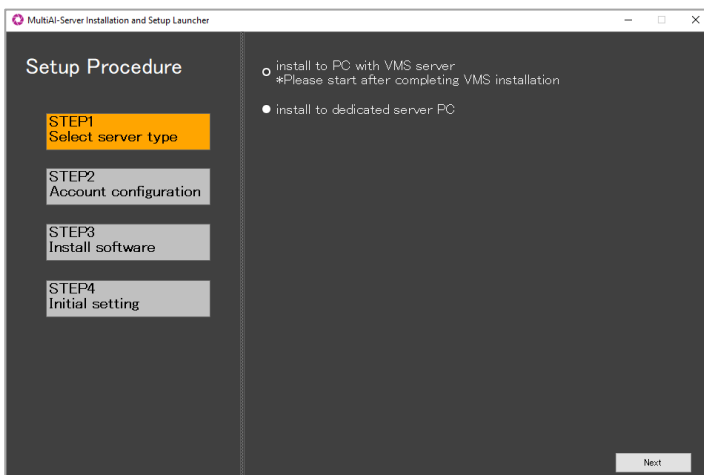
Install the Multi-AI server software. Configuration after installation can be done from web browser.

4.3.1. Install

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

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

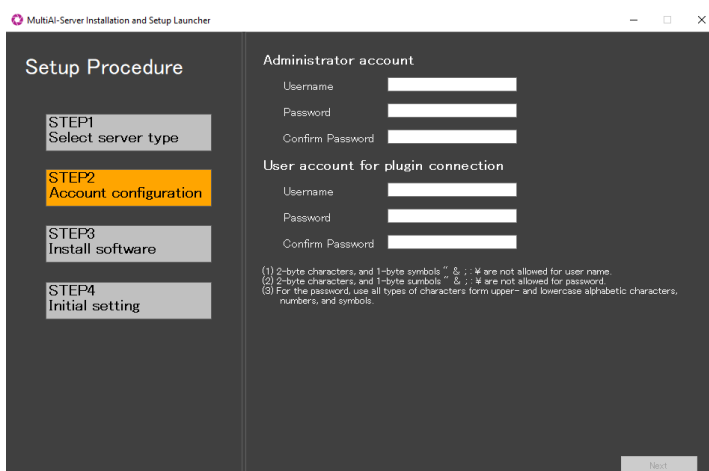
Check for [Agree] for License terms and [OK].



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

Note)

When you install Multi-AI server to PC with VMS server, you need to install VMS server software in advance.



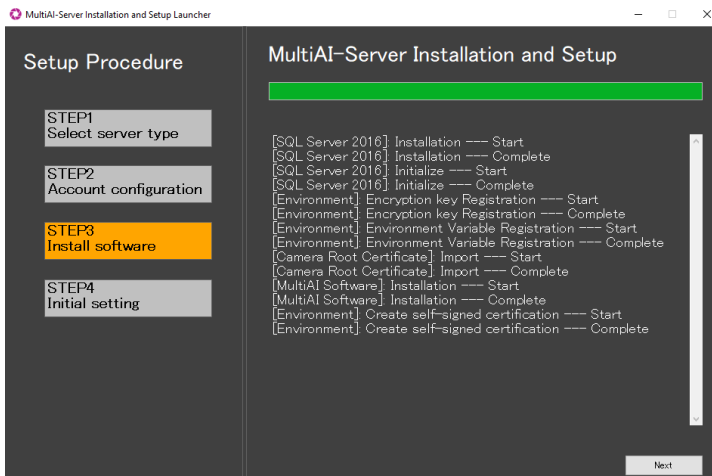
Register credentials and click [Next].

Note)

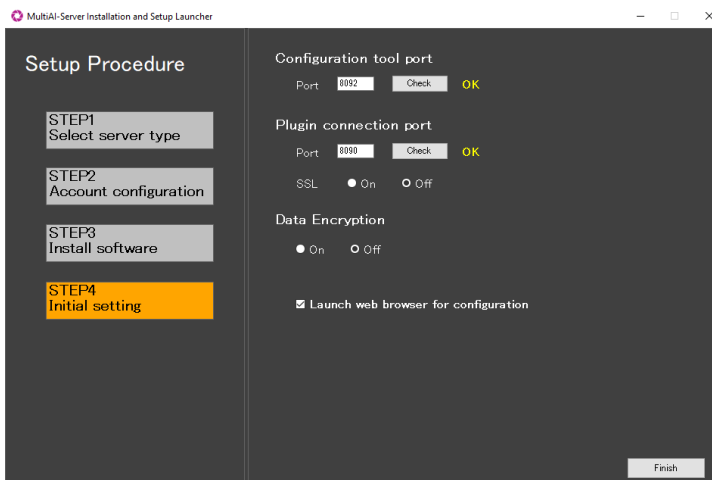
Make a note of the password you entered and keep it in a safe place.

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

When you forget the User account, you can reset (Refer to 4.3.5.2).



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



Configure port number, SSL and Data encryption and [Finish].

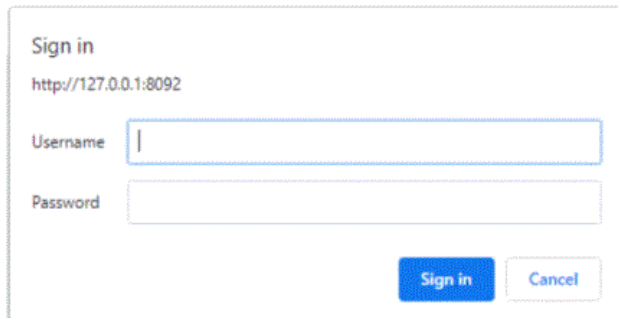
Note) When On is selected for Data Encryption, Image data will be encrypt. This setting cannot be changed after installation. Re-installation is required when you want to change after completing installation.

4.3.2. Setup Multi-AI server

4.3.2.1. Login

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

Input credentials.


A screenshot of a web browser's sign-in dialog box. The title is "Sign in". Below the title is the URL "http://127.0.0.1:8092". There are two input fields: "Username" and "Password". The "Username" field has a blue border and a cursor. The "Password" field has a white border. At the bottom right, there are two buttons: "Sign in" (blue) and "Cancel" (white with a blue border).

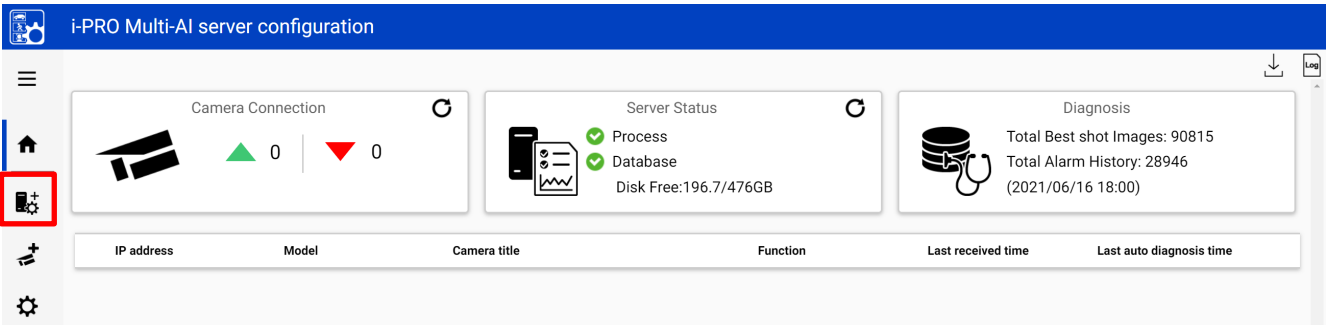
Note) Credentials and port number configured by install tool 4.3.1 are used.

Multi-AI server uses self-signed certificate for web access.

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

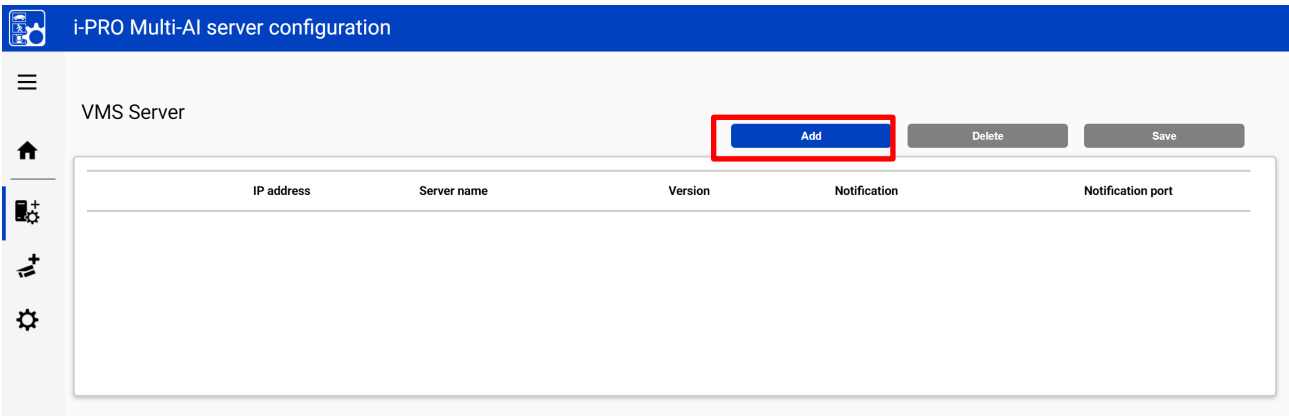
4.3.2.2. Register VMS

Click  (Register VMS)



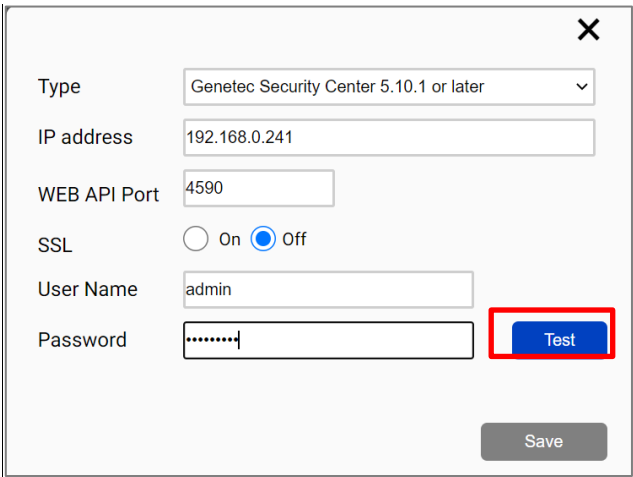
The dashboard shows three main sections: Camera Connection, Server Status, and Diagnosis. The Camera Connection section shows 0 cameras connected. The Server Status section shows Process and Database status as 'OK' and Disk Free as 196.7/476GB. The Diagnosis section shows Total Best shot Images: 90815, Total Alarm History: 28946, and a timestamp of (2021/06/16 18:00). A table at the bottom lists columns for IP address, Model, Camera title, Function, Last received time, and Last auto diagnosis time. The 'Add' button in the VMS Server section is highlighted with a red box.

Click [Add]



The VMS Server configuration form is displayed. It includes fields for IP address, Server name, Version, Notification, and Notification port. The 'Add' button is highlighted with a red box.

Input Security Center's information and click Test



The Security Center configuration dialog is shown. It includes fields for Type (Genetec Security Center 5.10.1 or later), IP address (192.168.0.241), WEB API Port (4590), SSL (On/Off), User Name (admin), and Password (masked). The 'Test' button is highlighted with a red box.

When Succeeded is shown, click Save

×

TypeGenetec Security Center 5.10.1 or later

IP address192.168.0.241

WEB API Port4590

SSL☐ On ☒ Off

User Nameadmin

Password.....

Test

Succeeded

Save

Confirm VMS server is registered

i-PRO Multi-AI server configuration

☰

🏠

⚙️

📡

⚙️

VMS Server

Add

Delete

Save

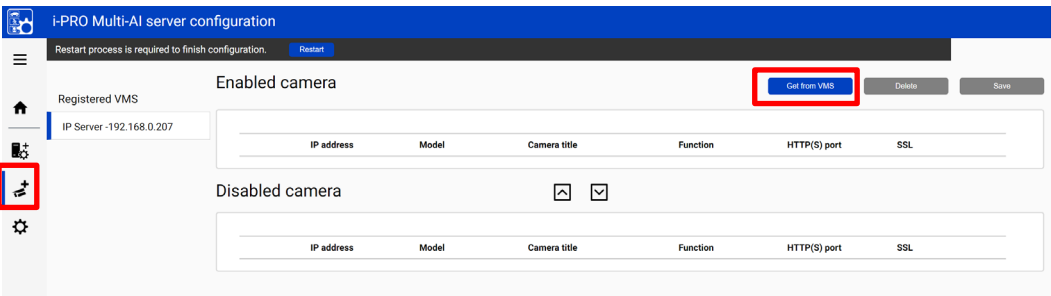
	IP address	Server name	Version	Notification	Notification port
1	<input type="checkbox"/> 192.168.0.241	DESKTOP-LOAHNJQ	5.10.357.0	<div><input checked="" type="checkbox"/> Alarm</div> <div><input type="checkbox"/> System error</div> <div><input type="checkbox"/> Exceed the receiving data limit (data loss)</div> <div><input type="checkbox"/> Reach the max disk space of image (delete old images)</div>	4590

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.

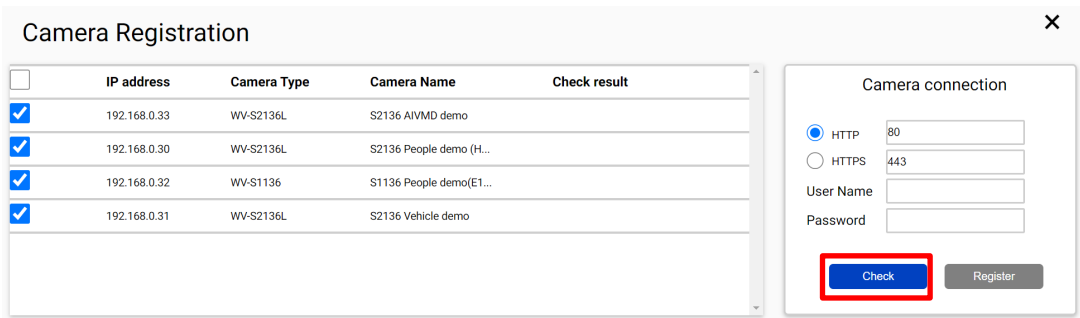
4.3.2.3. Register Cameras

Click  (Register Cameras)

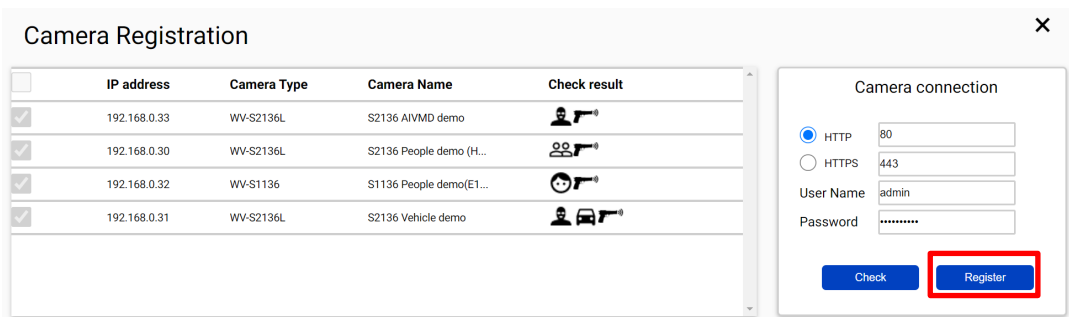
Select Get from VMS




All i-PRO cameras (including not supported cameras) are shown.
Input camera's credentials and click Check.





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




 (AI People detection)

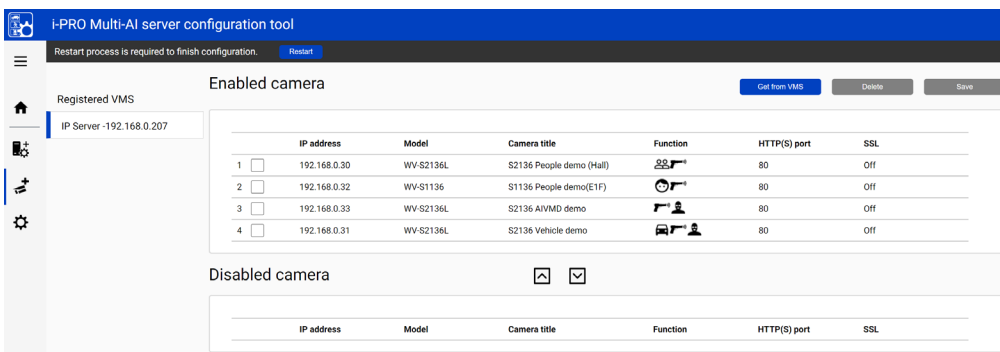
 (AI Vehicle detection)

 (AI Face detection)

 (AI-VMD)

 (AI Sound classification)

Confirm cameras are registered









i-PRO Multi-AI server configuration tool

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

Registered VMS: IP Server - 192.168.0.207

Enabled camera

	IP address	Model	Camera title	Function	HTTP(S) port	SSL
1	<input type="checkbox"/> 192.168.0.30	WV-S2136L	S2136 People demo (Hall)		80	Off
2	<input type="checkbox"/> 192.168.0.32	WV-S1136	S1136 People demo(E1F)		80	Off
3	<input type="checkbox"/> 192.168.0.33	WV-S2136L	S2136 AI/VMD demo		80	Off
4	<input type="checkbox"/> 192.168.0.31	WV-S2136L	S2136 Vehicle demo		80	Off

Disabled camera  

	IP address	Model	Camera title	Function	HTTP(S) port	SSL
--	------------	-------	--------------	----------	--------------	-----

4.3.3. Restart process to apply changes

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

When you finish all configuration. Click “Restart” from display bar above or Home screen.

Restart process is required to finish configuration.

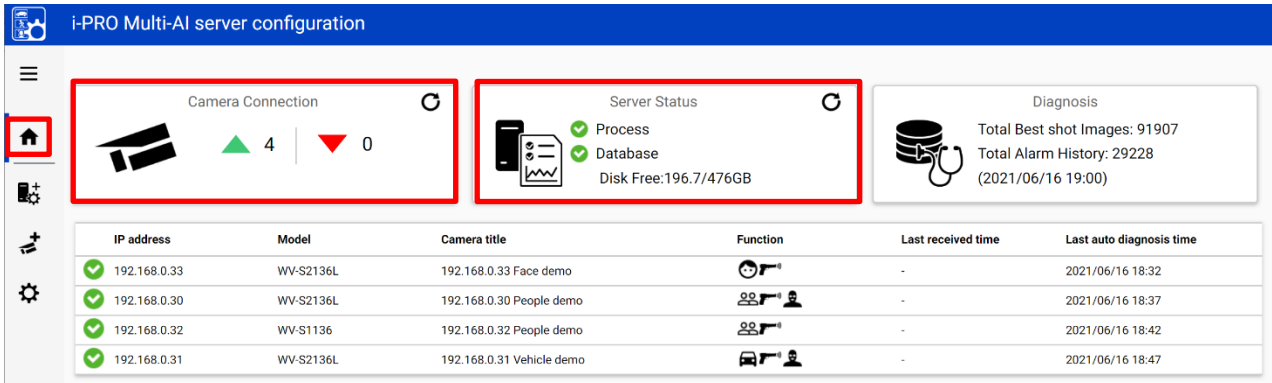
[Restart](#)





4.3.4. Check


Click  (Home)


- Check camera connection

Check all registered cameras are connected.



IP address	Model	Camera title	Function	Last received time	Last auto diagnosis time
✓ 192.168.0.33	WV-S2136L	192.168.0.33 Face demo		-	2021/06/16 18:32
✓ 192.168.0.30	WV-S2136L	192.168.0.30 People demo		-	2021/06/16 18:37
✓ 192.168.0.32	WV-S1136	192.168.0.32 People demo		-	2021/06/16 18:42
✓ 192.168.0.31	WV-S2136L	192.168.0.31 Vehicle demo		-	2021/06/16 18:47

 means the number of camera connected. (meta data session between camera and Multi-AI server).


 means the number of camera 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. Client plugin connection

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

Client plugin connection

☒ HTTP

(1-65535)

☐ HTTPS

(1-65535)

Save

Note) For secure communication, HTTPS is recommended.

4.3.5.2. User account for client plugin connection

User name set by install tool at 4.3.1 is shown. Password is not shown.

User account for client plugin connection

User name : user

Reset

If you forget password, click Reset and register again.

User name (1 to 32 characters)

Password (8 to 32 characters)

Retype password

Save

(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.

Configuration tool access port

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

Configuration tool access port

HTTPS

(1-65535)

Save

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.

4.3.5.3. Database

Database

Storing images in database
☒ On ☐ Off

Retention period(day)

Face image	<input type="text" value="31"/>	(14 - 31)
People image	<input type="text" value="31"/>	(14 - 31)
Vehicle image	<input type="text" value="31"/>	(14 - 31)
Alarm history	<input type="text" value="31"/>	(14 - 31)


☐ **Max usage of image storage drive(GB)** (10 - 2000) 

Image data save path


Max frequency of receiving object data (per sec)
 (50 - 300)

*Excess data will not be stored.

Data Encryption : off

Save

Configuration item	Comment
Storing images in database	On(default): Store Best shot images from camera Off: does not store images from camera.
Retention period	14 – 31 days (Default: 31) can be set for face image, people image, vehicle image and alarm history, respectively. Note) Data after retention period will be deleted at night (1:00am ~). If the server is shut down, data cannot be deleted, so new data may not be stored due to lack of storage space.
Max usage of image storage drive(*)	Enable/Disable and data size 10- 2000 (GB) can be configured. (Default: Disable) Note) When enable, and 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 Multi-AI server stores. Used disk space equals total volume minus free space.
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 Multi-AI plugin.
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 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.

Number of cameras

Face People Vehicle

Average number of object per camera,per hour

Face People Vehicle

Retention period

Face People Vehicle

System operating time(hours per day)

Face People Vehicle

Calc

Estimated used disk space

image : 34.77GB

database : 1.06GB

Note)

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

4.3.5.4. Initialization

Initialization

☐ Image ☐ Alarm history ☐ Watchlist

☐ Configuration (Except for port and user account)

Delete

Image: delete all Best shot images.

Alarm history: delete all alarm history

Watch list: delete all face watch list and people watch list. See operation manual about watch list.

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

Note)

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

☐ Image ☐ Alarm history ☐ Watchlist

☐ Configuration (Except for port and user account)

Delete

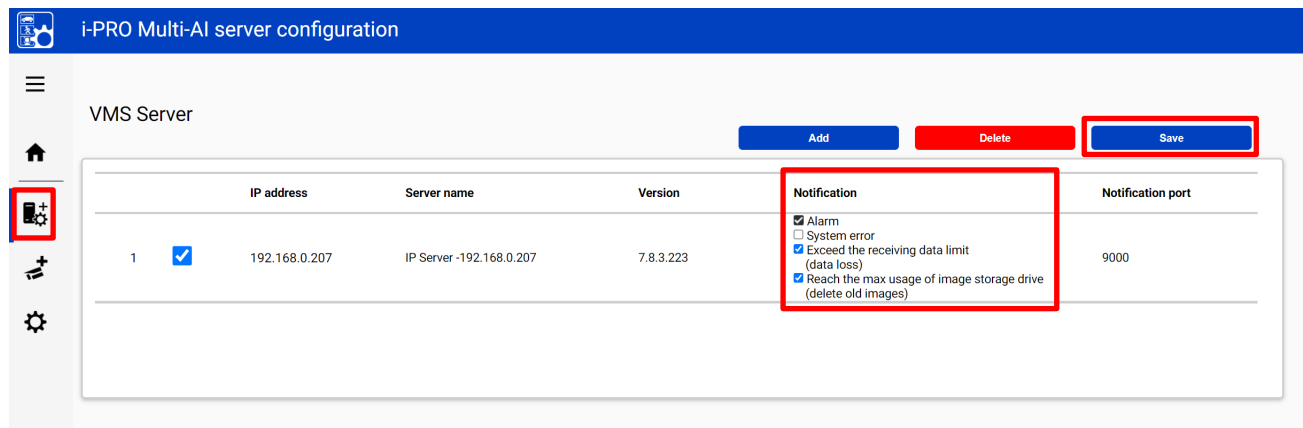
Now deleting

4.3.6. Notification to VMS Server (optional)

Some alarms related to Multi-AI server's system failure can be enabled.

Actions on VMS side also can be configured (4.5 Custom alarm setup (optional))

Click  (Register VMS)



IP address	Server name	Version	Notification	Notification port
192.168.0.207	IP Server -192.168.0.207	7.8.3.223	<input checked="" type="checkbox"/> Alarm <input type="checkbox"/> System error <input checked="" type="checkbox"/> Exceed the receiving data limit (data loss) <input checked="" type="checkbox"/> Reach the max usage of image storage drive (delete old images)	9000

Check following items that you want and Save.

System error

Error that Multi-AI server detects. (ex. camera connection error between camera and Multi-AI server.)

Exceed the receiving data limit (data loss)

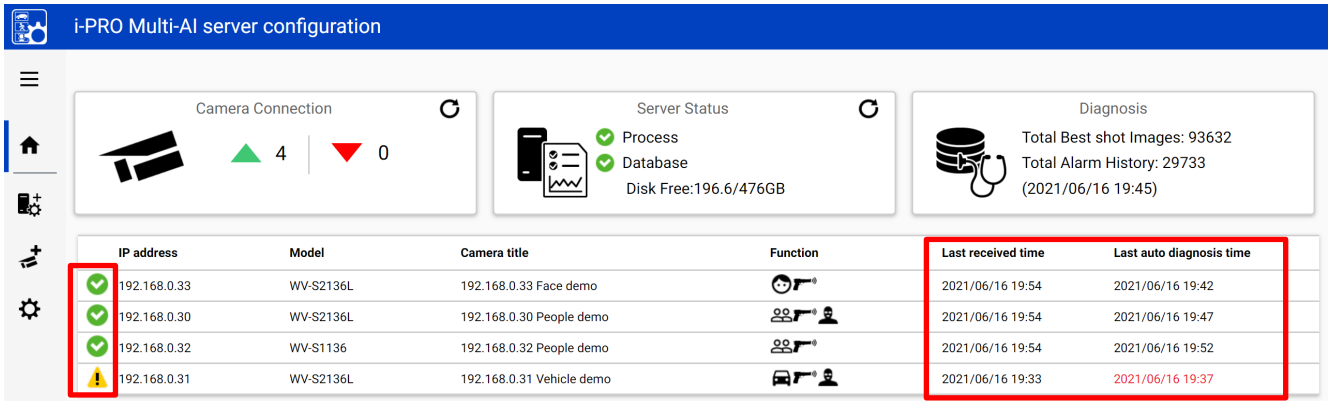
When the data exceeds the setting value for “Max frequency of receiving object data (per sec)” configured at 4.3.5.3.

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 4.3.5.3.

4.3.7. More information about status (optional)

4.3.7.1. Camera Connection



IP address	Model	Camera title	Function	Last received time	Last auto diagnosis time
✓ 192.168.0.33	WV-S2136L	192.168.0.33 Face demo	Face	2021/06/16 19:54	2021/06/16 19:42
✓ 192.168.0.30	WV-S2136L	192.168.0.30 People demo	People	2021/06/16 19:54	2021/06/16 19:47
✓ 192.168.0.32	WV-S1136	192.168.0.32 People demo	People	2021/06/16 19:54	2021/06/16 19:52
⚠ 192.168.0.31	WV-S2136L	192.168.0.31 Vehicle demo	Vehicle	2021/06/16 19:33	2021/06/16 19:37



: Camera is connected.



: Camera is not connected.



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

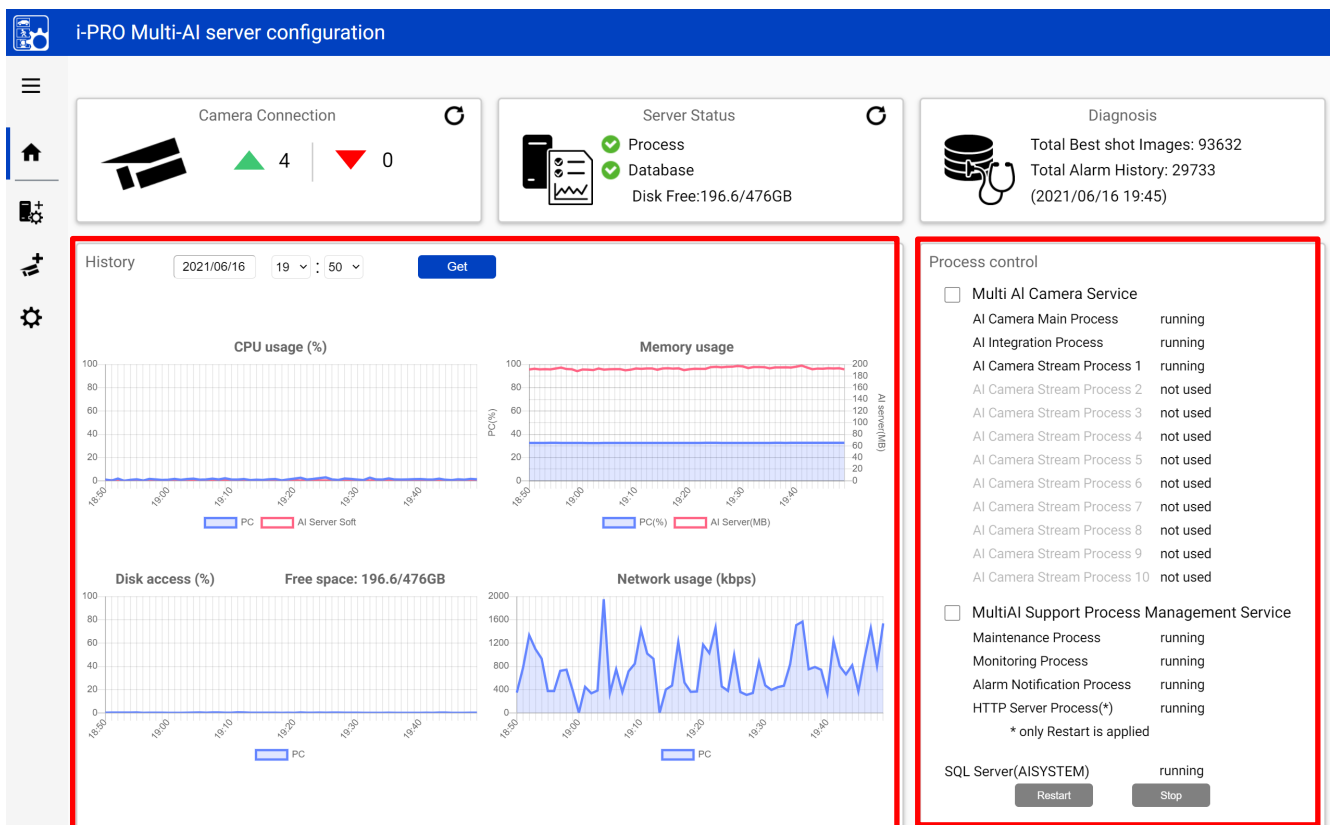
Metadata session is connected, but AI application on camera side may not work well. Check AI application on camera side is installed, schedule setting is on and also check whether “Last received time”.

“**Last received time**” shows the last detection time that the camera detected face, people, vehicle 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 Multi-AI 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.

4.3.7.2. Server Status



History

History shows CPU usage, Memory usage, Disk access and Network usage of the Multi-AI server. CPU usage and Memory usage show the total value in the PC and Multi-AI 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 Multi-AI server software is stopped for some duration.

Process Control


Processes related to Multi-AI 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 1.5.8).



When investigation to system trouble is required, please check status and try to restart.


4.3.7.3. Diagnosis

 i-PRO Multi-AI server configuration






Camera Connection

 4  0



Server Status

 Process
 Database
Disk Free:196.6/476GB



Diagnosis

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

Record summary

All Best shot images

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
Web version:-

OS:Windows 10 Pro, version 1903, build 18362.387
CPU:Intel(R) Core(TM) i9-9900K CPU @ 3.60GHz

Tamper Protection: invalid
Fastboot: valid

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
- All alarm
- Registered face detection
- Registered people detection
- AI-VMD
- Sound detection

Information

Software version, OS, windows configuration are shown.

4.3.7.4. Display log

IP address	Model	Camera title	Function	Last received time	Last auto diagnosis time
192.168.0.33	WV-S2136L	192.168.0.33 Face demo		2021/06/16 19:54	2021/06/16 19:42
192.168.0.30	WV-S2136L	192.168.0.30 People demo		2021/06/16 19:54	2021/06/16 19:47
192.168.0.32	WV-S1136	192.168.0.32 People demo		2021/06/16 19:54	2021/06/16 19:52
192.168.0.31	WV-S2136L	192.168.0.31 Vehicle demo		2021/06/16 19:33	2021/06/16 19:37

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.

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.

4.3.7.5. Download log

IP address	Model	Camera title	Function	Last received time	Last auto diagnosis time
192.168.0.33	WV-S2136L	192.168.0.33 Face demo	👤🔑	2021/06/16 19:54	2021/06/16 19:42
192.168.0.30	WV-S2136L	192.168.0.30 People demo	👤🔑👤	2021/06/16 19:54	2021/06/16 19:47
192.168.0.32	WV-S1136	192.168.0.32 People demo	👤🔑	2021/06/16 19:54	2021/06/16 19:52
192.168.0.31	WV-S2136L	192.168.0.31 Vehicle demo	🚗🔑👤	2021/06/16 19:33	2021/06/16 19:37

Click  to download log.

×

[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.

4.3.8. Windows setting

Following Windows configuration is required for Multi-AI server's work to be stable.
Location of configuration may differ depending on OS.

4.3.8.1. Disable Real-time protection and Tamper protection

This is required for Multi-AI 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.

4.3.8.2. Disable Windows Update service

Windows updates are important to keep the system up to date, but auto update may require unplanned restart and some new Windows feature may influence the Multi-AI server. To avoid unplanned restarts or influences, disable Windows update service.

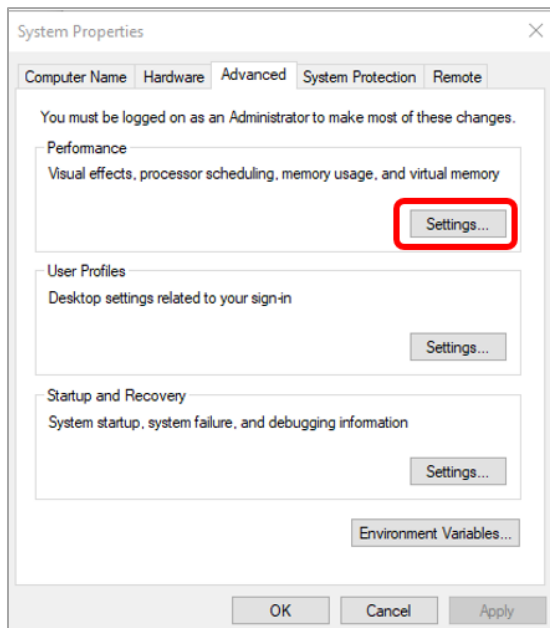
In case of Windows 10,

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

4.3.8.3. Virtual memory setting

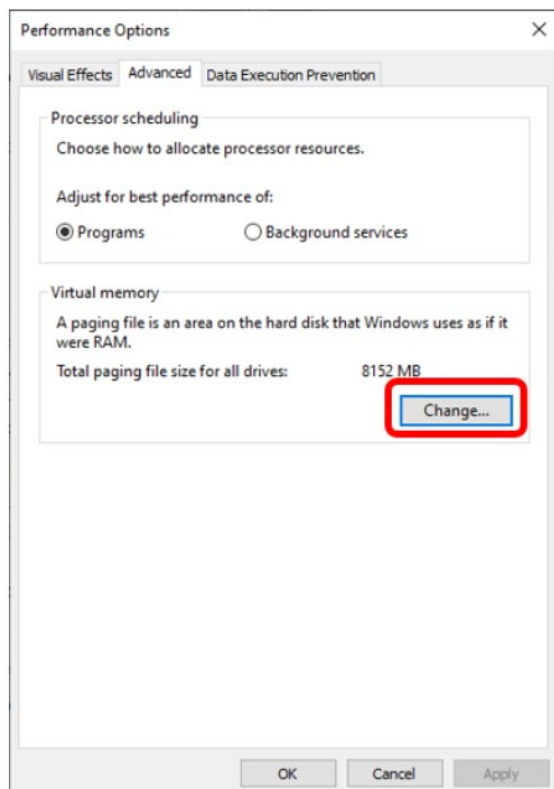
If the virtual memory is insufficient, the database may stop.

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.

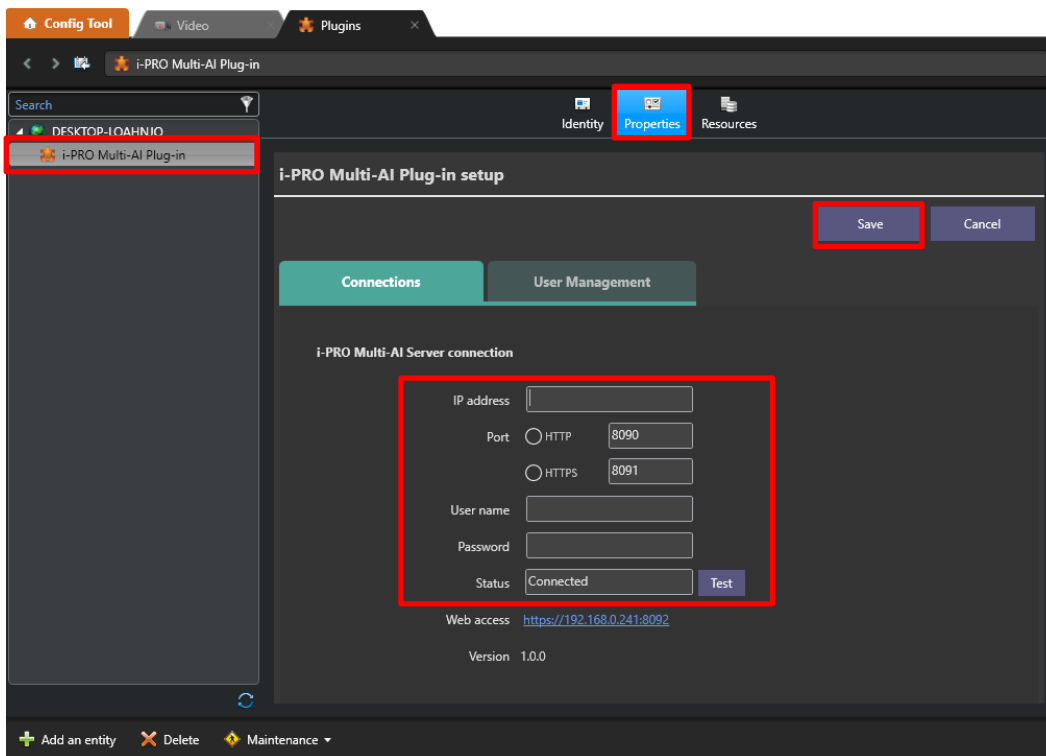
4.4. Install and setup Multi-AI plugin for Security Desk

4.4.1. Install Multi-AI plugin to Security Desk

Install Multi-AI Plug-in to PC that is Security Desk is installed referring to the section 4.2.2.1.

4.4.2. Connection to Multi-AI server

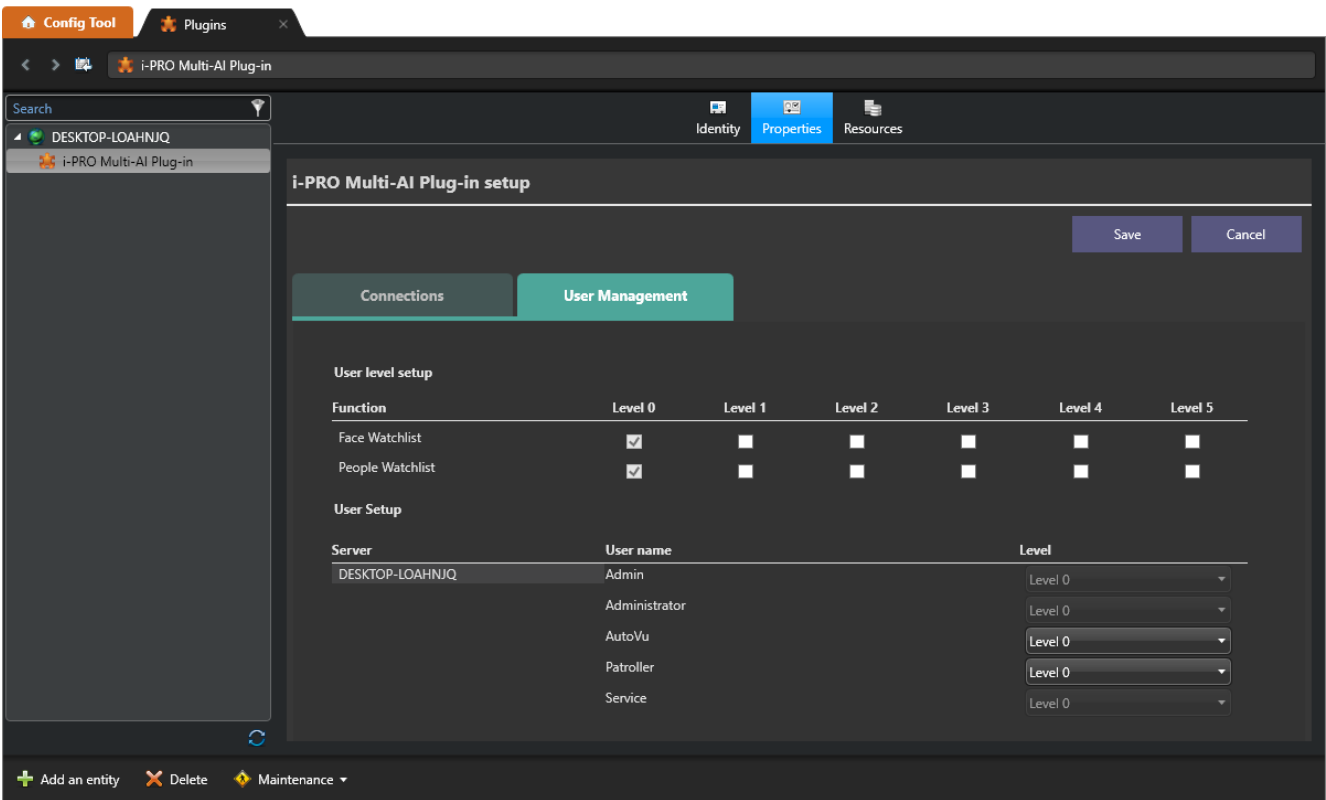
Connect Config Tool with Security Center. Select [Plugin], [i-PRO Multi-AI Plugin] and [Properties] tab. Input AI server information and Click [Test] and then click [Save].



Note) If Test failed, please check if credential is correct.

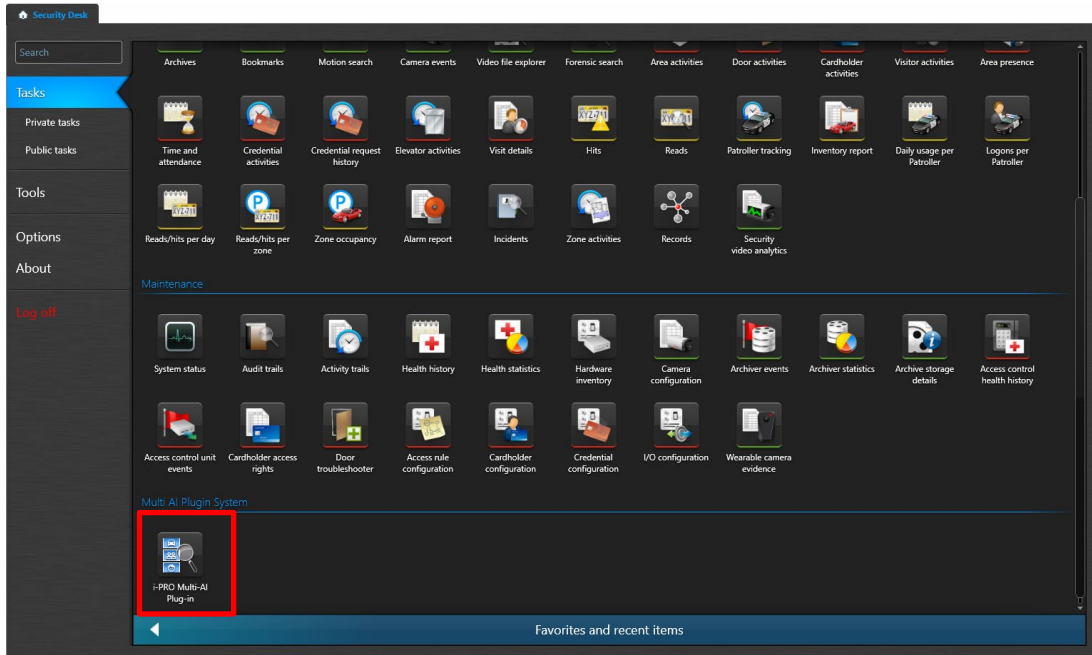
4.4.3. User Management (Optional)

Configure User Management for [Face Watch] list and [People Watchlist] access.
You need to also configure User settings ([Config Tool]-[User management] - [Privileges]) for not administrators to user watchlist.



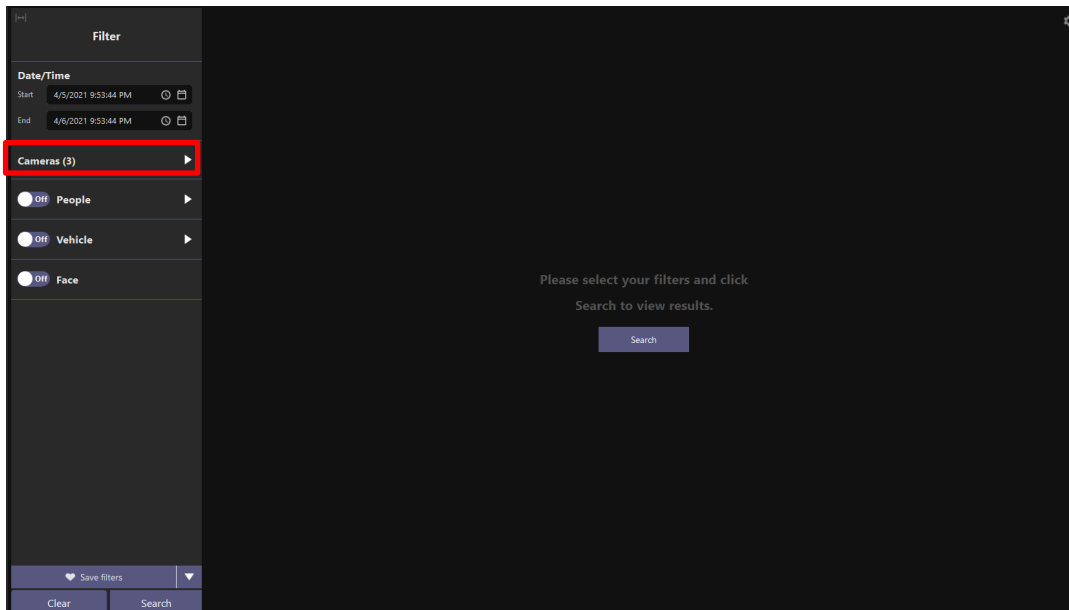
4.4.4. Check

Start Security Desk and select [i-PRO Multi-AI Plug-in].



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

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



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

4.5. Custom alarm setup (optional)

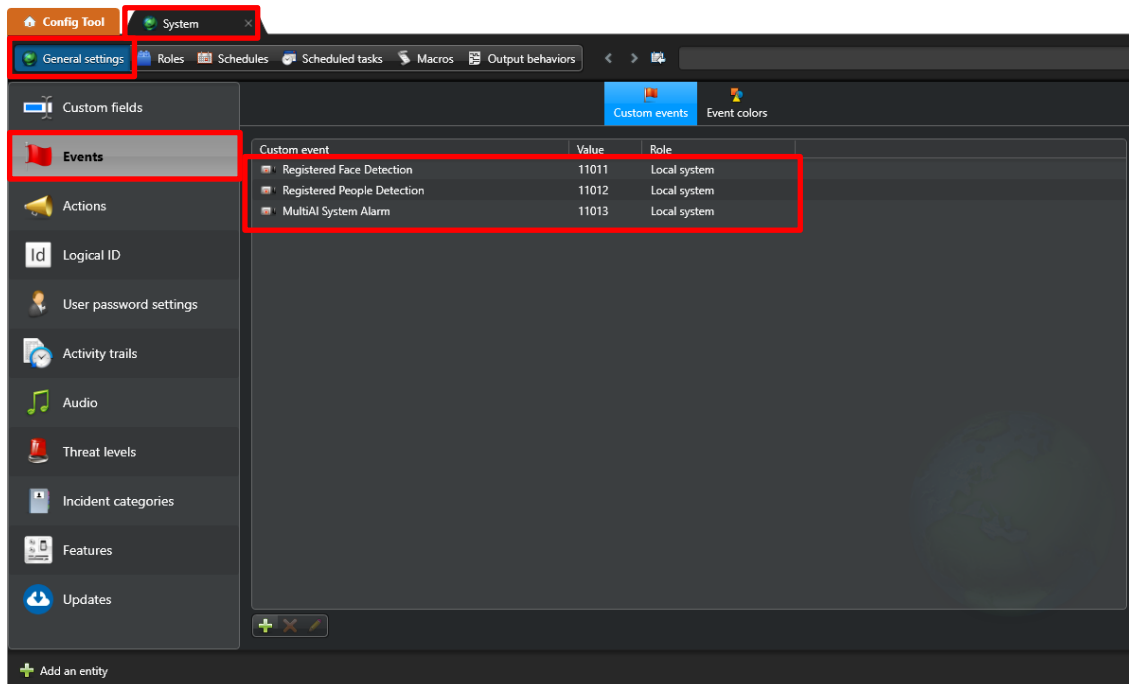
Registered face detection, Registered people detection and system alarm of Multi-AI server can be used as custom event on Security Center.

STEP1

Connect Config Tool with Security Center. Select [System] - [General settings] - [Events].

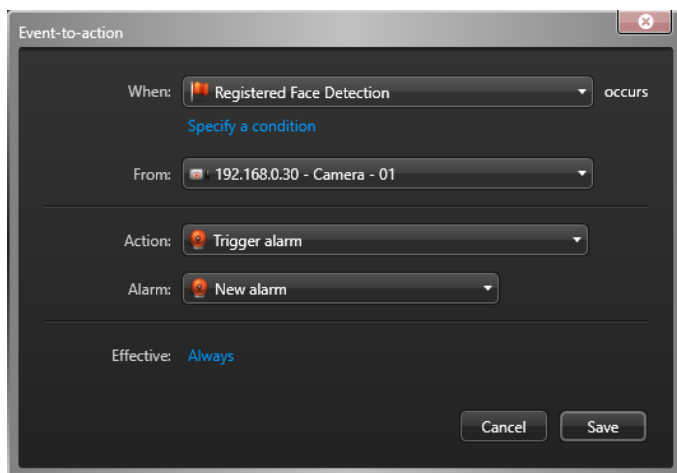
Confirm “Registered Face Detection”, “Registered People Detection] and [Multi-AI system Alarm] exist.

These are added automatically when Security Center is registered to Multi-AI server (4.3.2.2)



STEP2

Select [Actions] setting. Set [When] to the custom event added in Step1, and select the camera for event source. And select [Action] in pull-down menu. (Other setting items depend on the [Action].)



Note) To use Multi-AI system Alarm, you also need to enable on Multi-AI sever configuration (Refer to 4.3.6).

5. When changing system component

5.1. Add system device

5.1.1. Add camera

STEP1

Register AI cameras to Security Center server using Security Desk (Refer to 4.2.1).

STEP2

Register AI cameras to Multi-AI server (Refer to 4.3.2.3)

STEP3

Restart process (Refer to 4.3.3)

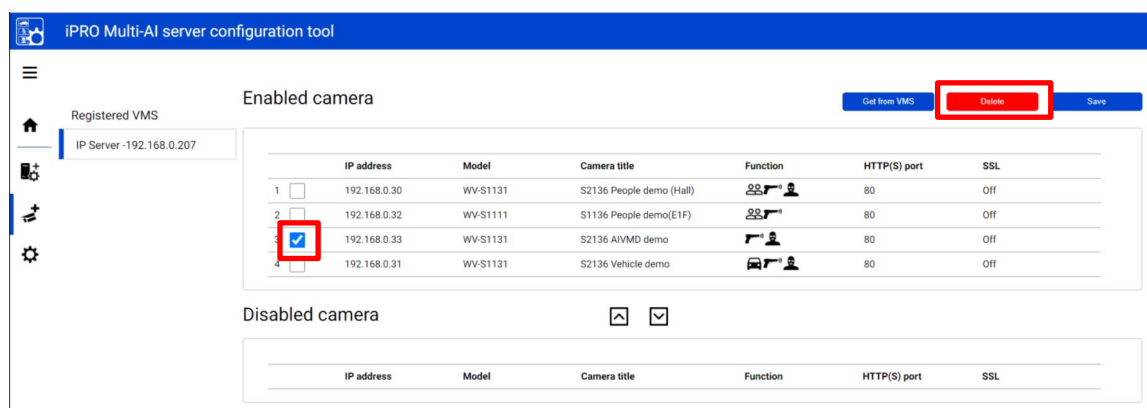
5.2. Delete system device

5.2.1. Delete camera

STEP1

Check camera and [Delete] from Register Cameras screen.

Existing data of the selected camera will be unavailable.



IPRO Multi-AI server configuration tool

Registered VMS: IP Server -192.168.0.207

Enabled camera

Get from VMS **Delete** Save

	IP address	Model	Camera title	Function	HTTP(S) port	SSL
1	192.168.0.30	WV-S1131	S2136 People demo (Hall)		80	Off
2	192.168.0.32	WV-S1111	S1136 People demo(EIF)		80	Off
3	192.168.0.33	WV-S1131	S2136 AIVMD demo		80	Off
4	192.168.0.31	WV-S1131	S2136 Vehicle demo		80	Off

Disabled camera

IP address	Model	Camera title	Function	HTTP(S) port	SSL
------------	-------	--------------	----------	--------------	-----

STEP2

Restart process (Refer to 4.3.3)

5.2.2. Disable camera

When you want 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.

IPRO Multi-AI server configuration tool

Registered VMS: IP Server -192.168.0.207

Enabled camera

	IP address	Model	Camera title	Function	HTTP(S) port	SSL
1	<input type="checkbox"/>	192.168.0.30	WV-S1131	S2136 People demo (Hall)	80	Off
2	<input type="checkbox"/>	192.168.0.32	WV-S1111	S1136 People demo(EIF)	80	Off
3	<input checked="" type="checkbox"/>	192.168.0.33	WV-S1131	S2136 AIVMD demo	80	Off
4	<input type="checkbox"/>	192.168.0.31	WV-S1131	S2136 Vehicle demo	80	Off

Disabled camera

IP address	Model	Camera title	Function	HTTP(S) port	SSL
------------	-------	--------------	----------	--------------	-----

STEP2

[Save]

IPRO Multi-AI server configuration tool

Registered VMS: IP Server -192.168.0.207

Enabled camera

	IP address	Model	Camera title	Function	HTTP(S) port	SSL
1	<input type="checkbox"/>	192.168.0.30	WV-S1131	S2136 People demo (Hall)	80	Off
2	<input type="checkbox"/>	192.168.0.32	WV-S1111	S1136 People demo(EIF)	80	Off
3	<input type="checkbox"/>	192.168.0.31	WV-S1131	S2136 Vehicle demo	80	Off

Disabled camera

IP address	Model	Camera title	Function	HTTP(S) port	SSL	
1	<input checked="" type="checkbox"/>	192.168.0.33	WV-S1131	S2136 AIVMD demo	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 plugin.

5.2.3. Delete Security Center

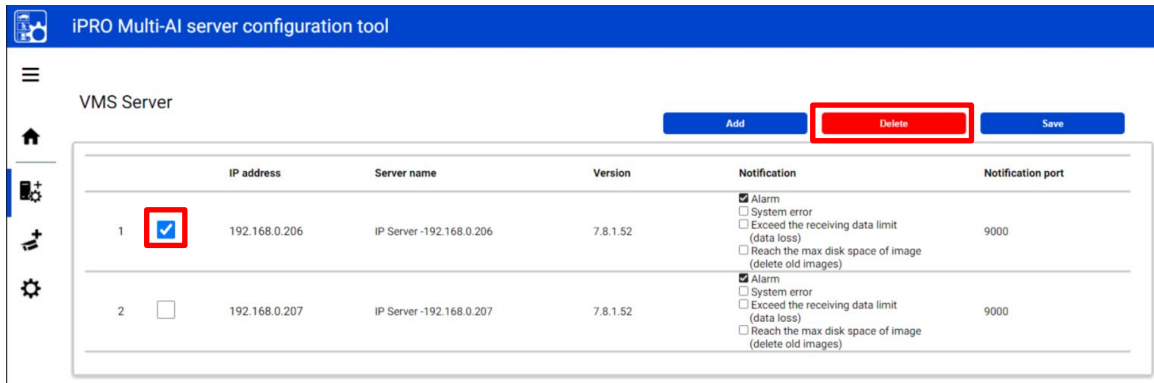
STEP1

Check server and [Delete] from Register VMS screen.

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

When the same VMS server 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. Add or Change camera's extension software

STEP1

Install or change extension software using iCT. (Refer to 4.1)

STEP2

Click [Get from VMS] on Register Cameras screen.

IPRO Multi-AI server configuration tool

Registered VMS: IP Server -192.168.0.207

Enabled camera

	IP address	Model	Camera title	Function	HTTP(S) port	SSL
1	192.168.0.30	WV-S1131	S2136 People demo (Hall)		80	Off
2	192.168.0.32	WV-S1111	S1136 People demo(E1F)		80	Off
3	192.168.0.33	WV-S1131	S2136 AIVMD demo		80	Off
4	192.168.0.31	WV-S1131	S2136 Vehicle demo		80	Off

Disabled camera

IP address	Model	Camera title	Function	HTTP(S) port	SSL
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STEP3

Select the camera and input credentials and [Check].

Camera Registration

	IP address	Camera Type	Camera Name	Check result
<input type="checkbox"/>	192.168.0.33	WV-S1131	S2136 AIVMD demo	
<input checked="" type="checkbox"/>	192.168.0.30	WV-S1131	S2136 People demo (H...	
<input type="checkbox"/>	192.168.0.32	WV-S1111	S1136 People demo(E1...	
<input type="checkbox"/>	192.168.0.31	WV-S1131	S2136 Vehicle demo	

Camera connection

☒ HTTP 80
☐ HTTPS 443

User Name admin
Password

Check Register

STEP4

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

In this example, AI-VMD is uninstalled (see 4.3.2.3 about the meaning of icons).

Camera Registration

	IP address	Camera Type	Camera Name	Check result
<input type="checkbox"/>	192.168.0.33	WV-S1131	S2136 AIVMD demo	
<input checked="" type="checkbox"/>	192.168.0.30	WV-S1131	S2136 People demo (H...	
<input type="checkbox"/>	192.168.0.32	WV-S1111	S1136 People demo(E1...	
<input type="checkbox"/>	192.168.0.31	WV-S1131	S2136 Vehicle demo	

Camera connection

☒ HTTP 80
☐ HTTPS 443

User Name admin
Password

Check Register

STEP5

Restart process (Refer to 4.3.3)

5.4. Uninstall the system

5.4.1. Uninstall Multi-AI plugin from client PC

STEP1

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

STEP2

Find [Multi AI Plugins] and [Uninstall].

5.4.2. Uninstall Multi-AI server

STEP1

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

STEP2

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

Delete “C:¥MultiAI” folder if exist.

STEP3

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

Select [Remove] and delete “AISYSTEM” instance.

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

Note) SQL server instance that VMS uses is not deleted. Only instance for Multi-AI server is deleted.

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 Security Center ([Config tool] – [Video] – [Property setting of Video unit]).

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

STEP3

Delete the camera from Multi-AI 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 Security Center's IP address

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

STEP1

Change Security Center's IP address.

STEP2

Delete the Security Center from Multi-AI server (Refer to 5.2.3)

STEP3

Register the Security Center again (Refer to 4.3.2.2).

STEP4

Restart process (Refer to 4.3.3).

5.5.3. Change Multi-AI Server's IP address

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

STEP1

Change Multi-AI server's IP address.

STEP2

Update configuration for Connection to Multi-AI server from Multi-AI plugin (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 Multi-AI server requires the same version of software for reinstallation from backup due to differences in each database version.

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

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

STEP4

Browse to “C:¥MultiAI” and copy “Image” folder to safe location.

If you changed image data save path, copy the folder.

STEP5

Type “regedit” to Start menu and run. Right click two folder and export to safe location, respectively.

“¥HKEY_LOCAL_MACHINE¥SOFTWARE¥Panasonic¥AiSystem”.

“¥HKEY_LOCAL_MACHINE¥SOFTWARE¥WOW6432Node¥Panasonic¥AiSystem”.

STEP6

Start – Windows Administrative Tools – Services.

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

STEP7

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

5.6.2. Restore process

STEP1

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

STEP2

Start – Windows Administrative Tools – Services.

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

STEP3

Copy saved files “ai_db.mdf”, “aicom.mdf”, “support_db.mdf”, ai_db_log.ldf”, “aicom_log.ldf” and “support_db_log.ldf” to “C:¥Program Files¥Microsoft SQL Server¥MSSQL13.AISYSTEM ¥MSSQL¥DATA” and replace existing files.

STEP4

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

STEP5

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

STEP6

Start – Windows Administrative Tools – Services.

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

STEP7

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

STEP8

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

STEP9

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

5.7. Procedure to move Multi-AI server location from Security Center's PC to dedicated server's PC

Multi-AI server location can be moved from Security Center'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 Multi-AI 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 Multi-AI server to new PC and restore data

STEP1

Install Multi-AI server to new PC as dedicated server PC (Refer to 4.3.1).

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

STEP2

Restore data (Refer to 5.6.2)

STEP3

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

STEP4

Start – Windows Administrative Tools – Services.

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

5.8. Procedure to restart/shut down Multi-AI server PC

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

STEP1

Stop Multi-AI server's process (Refer to 4.3.7.2).

STEP2

Restart or shutdown.

5.9. Reset administrator account

When you forget credential of administrator to access configuration, you need to reset on PC that Multi-AI server is installed.

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

6. Troubleshooting

6.1. Trouble shooting for Installation and Setup

Problem	Cause and solution	Refer
Failed to install SQL server	There may be some data that was used in the past. Uninstall program related to SQL server 2016 if VMS use another SQL server version, delete folder C:\Program Files\Microsoft SQL Server\MSSQL13.AISYSTEM and delete folder C:\MultiAI if you installed before.	-
	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	-
Cannot install VMS server software after Multi-AI server installation	When you install Multi-AI server to PC with VMS server, you need to install VMS server software in advance. If Multi-AI server is installed before that, uninstall Multi-AI server and SQL server and then, install VMS server.	4.3.1 5.4.2
Cannot access Multi-AI server configuration.	Did you access <a href="http://<ip>:8092">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 or Chrome 83 or later.	3.2
	Please confirm related service is running on PC that Multi-AI server PC is installed. Start – Windows Administrative Tools – Services. “MultiAICameraService”, “MultiAISupportProcessManagementService” and “SQL Server(AISYSTEM)” If stopped, right click and run	5.6.1
Cannot log in to Multi-AI server configuration	If you forget administrator account, reset account from PC that Multi-AI server PC is installed.	5.9

Cannot register VMS.	Check if IP address, port, protocol and credentials are correct.	4.3.2.2
	Check if web-SDK is enabled from Config tool on Security Center and	4.2.3
	Supported version of Security Center is SC 5.10.1.0 or later	2.2
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 Security Center in advance.	4.2.1
	Check if "Digest" is used for authentication on camera side. ([Settings] - [User mng.] - [User auth.])	-
Face, People or Vehicle images cannot be searched from Multi-AI plugin (camera is not shown for camera list).	<p>Camera registration to Multi-AI server should be done after registering camera to Security Center.</p> <p>When you re-register the camera to Security Center after registration to Multi-AI server, you need to also re-register the camera to Multi-AI server (delete and then register again.)</p>	<p>5.2.1</p> <p>5.1.1</p>
Face, People or Vehicle images cannot be searched from Multi-AI plugin (the number of search result is 0).	<p>Receiving status from each cameras can be confirmed from Multi-AI server configuration.</p> <p>Check network connection between camera and Multi-AI 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>	4.3.7.1
	<p>Check process status of Multi-AI server.</p> <p>If some process is stopped, restart the process.</p>	4.3.7.2
	Check if schedule setting on camera side for extension software is on.	-
	<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 Multi-AI server's program are listed on "Allowed apps and features" for firewall settings.</p>	-

Cannot connect from Multi-AI plugin to Multi-AI server.	Check if IP address, port, protocol and credentials are correct. Port and credentials can be changed from Multi-AI server configuration.	4.3.5.2 4.4.2
Playback time is incorrect.	Check if PC time of Multi-AI server and VMS server are synchronized when Multi-AI server is installed to dedicated server.	-
Registered face detection or registered people detection cannot be shown	Check if custom event and actions (e.g. Trigger alarm) are configured. Check if Multi-AI server detect alarm from diagnosis on Multi-AI server configuration. If alarm exists, check the process status of Multi-AI server.	4.5 4.3.7.3
System alarm cannot be shown	Check if custom event and actions (e.g. Trigger alarm) are configured.	4.5

6.2. Trouble shooting after starting operation

When trouble occurs after starting operation, you can confirm error code on Multi-AI server configuration (Refer to 4.3.7.4)

Problem	Error code	Cause and solution
Server process is stopped on Multi-AI server configuration	514 - 517	Services related to Multi-AI server does not exist. Please install Multi-AI server again
	1025 – 1028	Process related to Multi-AI server failed to start. Restart
	4097 – 4100	Multi-AI server manually (Refer to 4.3.7.2).
	4354,4357, 4610,4611	When process stops again, download logs (Refer to 4.3.7.5) and contact the system administrator.
Camera disconnect	4355,4356,4358	<p>Check network connection between camera and Multi-AI server.</p> <p>Check camera works (recording to VMS and live monitoring)</p> <p>If problem continues after restart camera and Multi-AI server manually (Refer to 4.3.7.2), download logs (Refer to 4.3.7.5) and contact the system administrator.</p>
Face, People or Vehicle Images cannot be searched from Multi-AI plugin (the number of search result is 0).	66052,66053	<p>Receiving status from each cameras can be confirmed from Multi-AI server configuration.</p> <p>Check network connection between camera and Multi-AI 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>
False detection (Not face, people or vehicle is searched)	-	To avoid false detection, configure mask area using iCT (Refer to 4.1).
High CPU usage, memory usage or disk access	65793,65794 65796,65797	Check CPU or memory status (Refer to 4.3.7.2) and confirm whether the usage by Multi-AI server software is high.

		<p>If the usage of Multi-AI 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 4.3.5.3)</p> <p>If the usage of Multi-AI server is low and those of whole PC is high, check the influence of other software.</p> <p>When Multi-AI server is installed with VMS software, check the VMS software status.</p>
Reach the max disk space of image (delete old images)	65795	<p>Old images has been deleted by exceeding the settings for “Max usage of image storage drive”.</p> <p>If you need to store data for “Retention period”, configure mask area on camera side using iCT (Refer to 4.1) to reduce the number of detection.</p>

7. Appendices

7.1. Secure system guideline

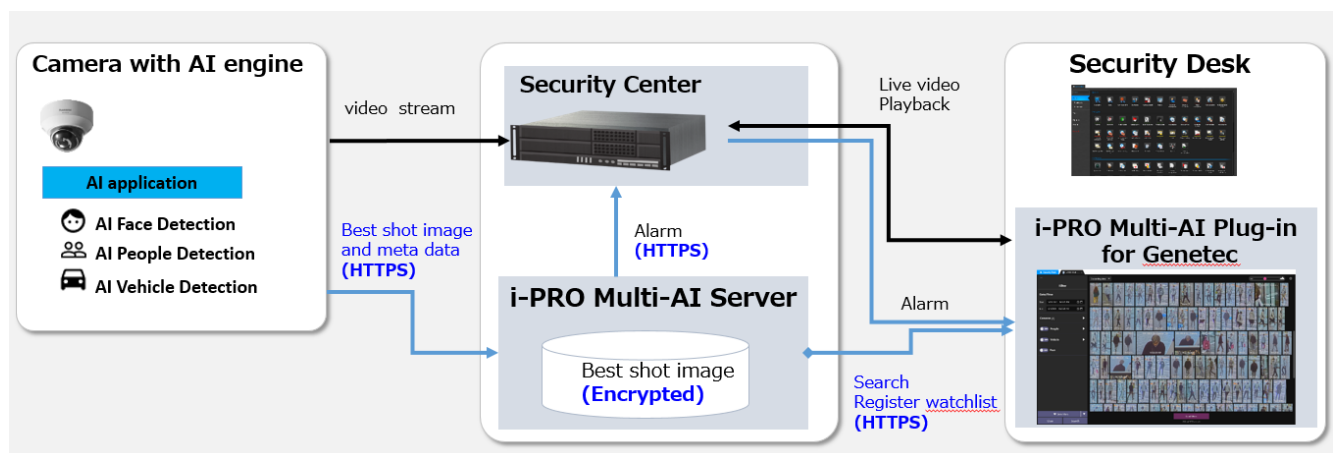
To ensure encrypted communications within critical environments, the secure system has been created as an additional security layer for the application. This document describes how to enable and configure secure system.

The communication between the cameras and Multi-AI server can be encrypted over HTTPS protocol.

The communication between the Security Center and Multi-AI server can be encrypted over HTTPS protocol.

The communication between the Multi-AI server and Multi-AI Plug-in can be encrypted over HTTPS protocol.

Recorded Best shot images on Multi-AI server can be encrypted. Data encryption can be configured only when you install Multi-AI server.



7.1.1. HTTPS between camera and Multi-AI 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 Multi-AI server, select HTTPS (Refer to 4.3.2.3).

7.1.2. HTTPS between Multi-AI server and Multi-AI plugin

STEP1

Configure HTTPS for [Client plugin connection] on Multi-AI server's setting (Refer to 4.3.5.1) and Restart Multi-AI server process.

STEP2

Configure HTTPS connection on Multi-AI plugin's setting (Refer to 4.4.2)

7.1.3. HTTPS between VMS and Multi-AI server

STEP1

Select "use SSL connection" on Config tool (Refer to 4.2.3)

STEP2

When you register VMS to Multi-AI 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 Multi-AI server (Refer to 4.3.1).

When data is encrypted, image can be seen from Multi-AI plugin software. Other software cannot open the file.

7.2. Open source software

This product uses open source software.

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