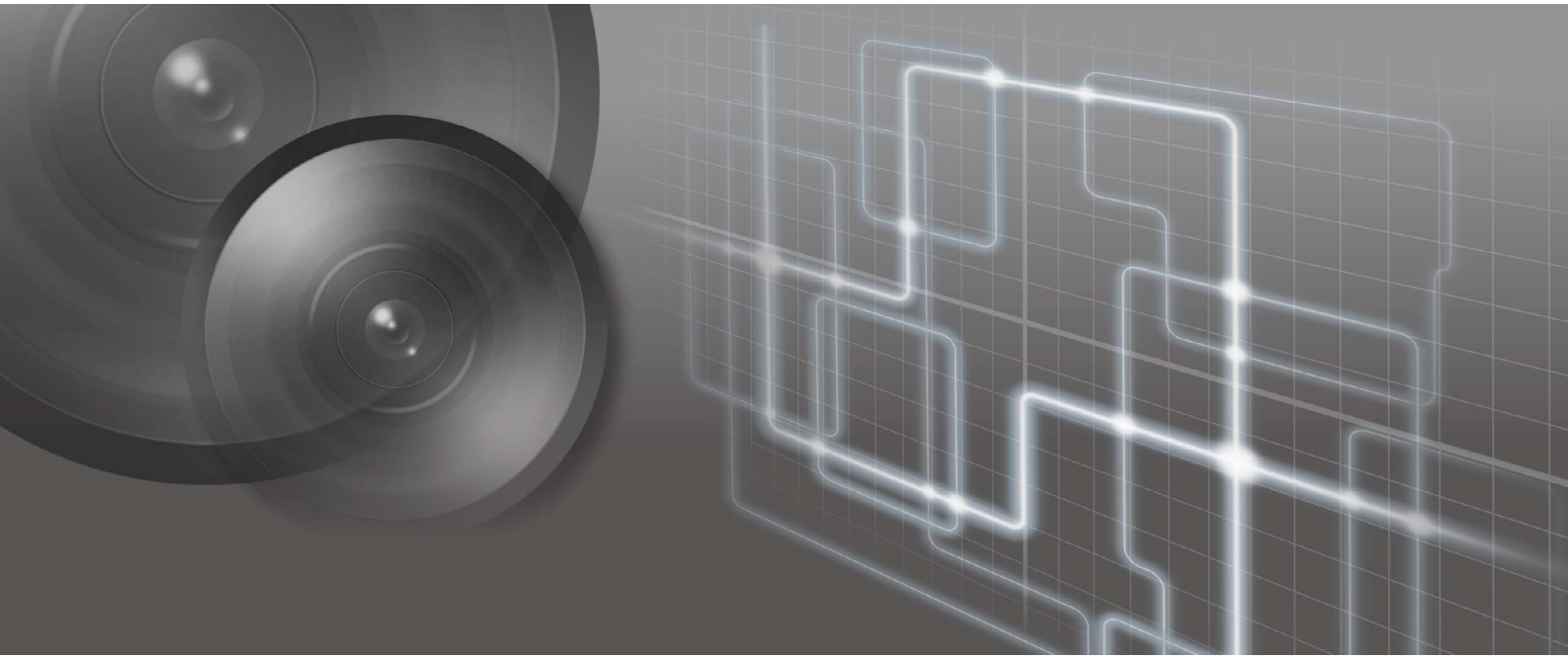
Canon

Crowd People Counter for Milestone XProtect Version 1.1 User Manual



User manual should be read before using the software.

ENGLISH

Table of Contents

Introduction

This manual describes how to install and operate “Crowd People Counter for Milestone XProtect Version 1.1” (hereafter referred to as “this software”). Carefully read this manual before use to ensure correct use of this software.

Precautions for Use

■ Third party software

The product contains third party software modules. For details, please refer to “ThirdPartySoftware-E.pdf” (Third-Party Software License) in the ThirdPartySoftware folder in the LICENSE folder. Each module’s license conditions are also available in the same folder.

Trademarks

- Microsoft, Windows and Windows Server are trademarks or registered trademarks of Microsoft Corporation in the United States and other countries.
- Windows is legally recognized as the Microsoft Windows Operating System.
- XProtect is a trademark of Milestone Systems.
- All other company or product names used in this manual are trademarks or registered trademarks of their respective holders.

■ Notes

1. Any unauthorized reproduction of this manual is prohibited.
2. The contents of this manual are subject to change without any prior notice.
3. This document has been prepared with the utmost attention to accuracy. For questions or comments, please contact a Canon sales representative.
4. Canon shall assume no liability for any outcome of using this product, notwithstanding items 2 and 3 above.

How to Use This Manual

The assumed reading format of this manual is on a computer screen.

■ Software Screenshots

The software screenshots samples shown in this manual are for illustration purposes only. The screenshots may differ from the actual screens displayed. Screenshot samples are taken from Windows 10 and Milestone XProtect Express+ 2020 R2.

■ Symbols Indicating Precautions

Symbol	Description
 Important	Cautions and restrictions are needed. Make sure to read these areas carefully.
 Note	Supplementary descriptions and reference information are mentioned here.

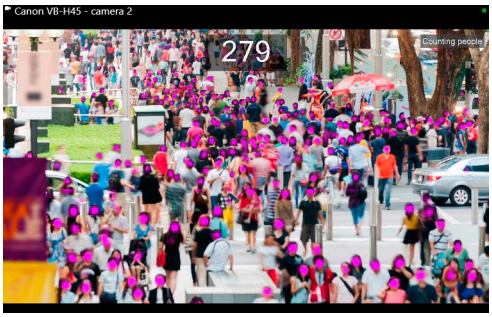
What is Crowd People Counter for Milestone XProtect

The Crowd People Counter for Milestone XProtect is a video analysis software that uses live video or recorded video from Network Camera (hereafter referred to as "camera") that is connected to Milestone XProtect, to estimate the number of people.

This software detects and counts human heads. Even if the entire body is not visible, it can be detected, therefore, it is possible to count people in close proximity or those who are small due to the distance.

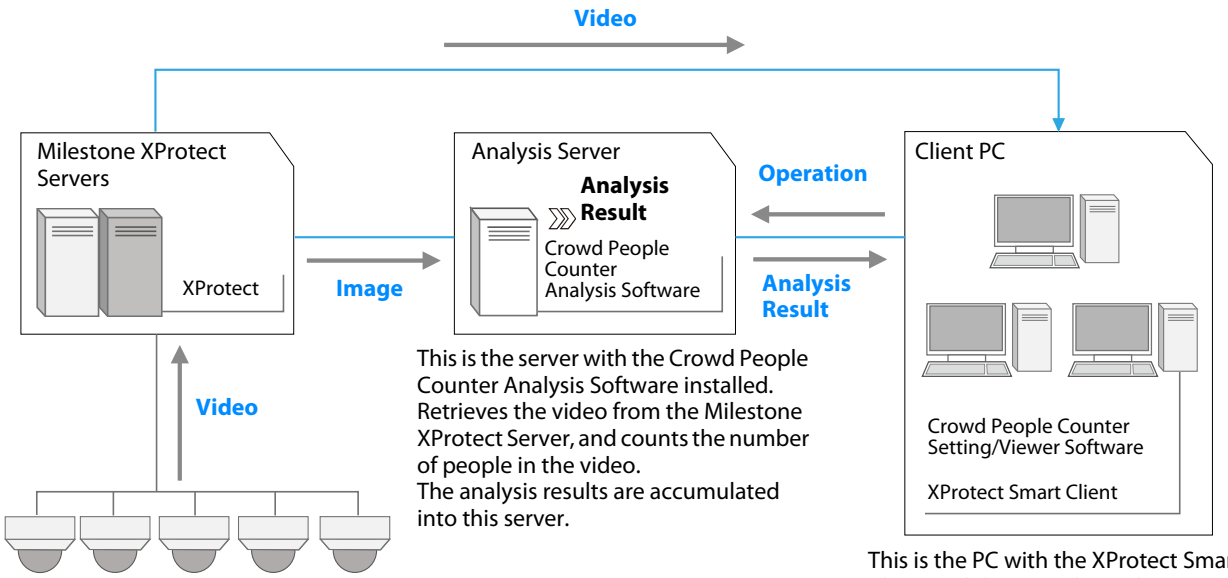
Important

Perform a test under the actual environment before beginning operation.



■ System Configuration

This software is separated into two parts; the analysis side (Crowd People Counter Analysis Server) running on the Analysis Server and the setting/viewer side (Crowd People Counter Viewer) running on the Client PC. Using this software along with the Milestone XProtect, the following systems can be configured.



This is the server with the Crowd People Counter Analysis Software installed. Retrieves the video from the Milestone XProtect Server, and counts the number of people in the video. The analysis results are accumulated into this server.

This is the PC with the XProtect Smart Client and the Crowd People Counter Setting/Viewer Software installed. This PC performs operations such as setting and executing the count and checking the analysis results.

Note

- Able to install Milestone XProtect, Analysis Software, Setting/Viewer Software, and XProtect Smart Client on a single Analysis Server.
- The available operations with this software vary according to the privileges of the user logging in to XProtect Smart Client. For details, refer to “Privileges” (p. 15).

■ Function Overview

- Count people in live video.

Counts people in real time in displayed live video (p. 31).
Also, automatically counts people according to a specified schedule (p. 37).

- Count people in recorded video (p. 39).

Counts people at a specified date and time in recorded video.

- Check the status of the count status of all the cameras.

Lists the cameras currently counting and the cameras scheduled to be counted on the schedule.

- Display the count result on video (p. 32).

The count results are displayed on the video as the number of people or density (number of people per unit area) while the live video count is being executed.

- Graph count results (p. 53).

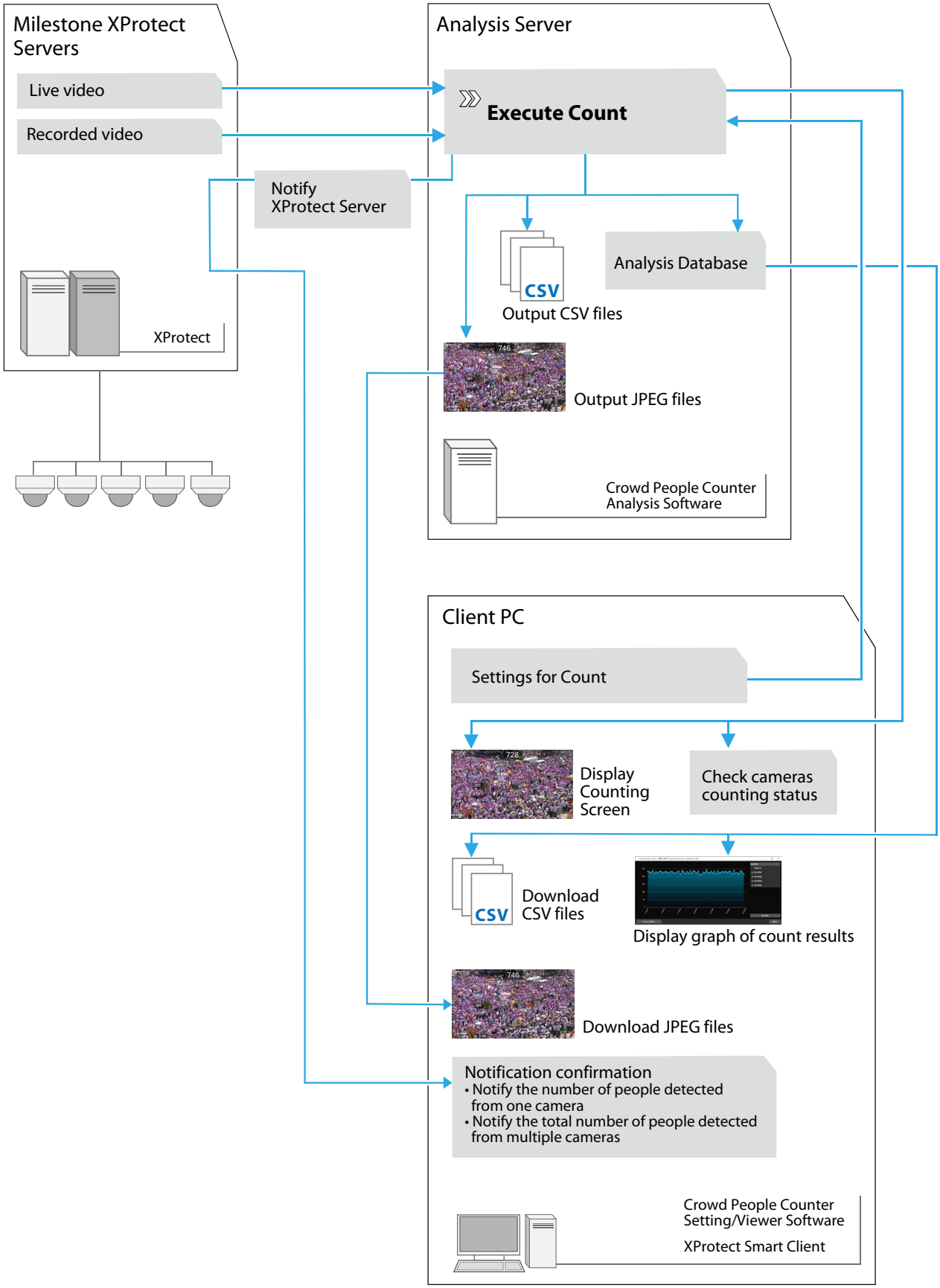
The count results are aggregated and shown in a graph during the count. In addition, by specifying the capture date and time of the video in which the count was run, the results will be graphed. Furthermore, the video during the count will be displayed by clicking on the graph.

- Output the count results as a CSV file/JPEG file

Count results can be outputted to the Analysis Server as a CSV file or a JPEG file during the count (p. 19).
In addition, the CSV file or the JPEG file of the count results can be downloaded to the Client Server (p. 59).

- Notify the XProtect Server according to the count results (p. 61).

Notify the XProtect Server when the number of detected people exceeds a certain number, or below a certain number. Moreover, it is possible to notify when the sum of detected people by multiple cameras exceeds a certain number, or below a certain number.



Note

When used along with the Moving Object Mask for Milestone XProtect (sold separately), this software is enabled to count the number of people while silhouetting them and other moving objects. For information on using these software together, refer to “Notes When Using this Software with Moving Object Mask for Milestone XProtect” (p. 76).

Operating Environment

■ System Requirements

Recommended PC Specifications	[For Analysis Server] CPU: Intel Core-i7-6700 or greater* Memory: 16 GB or more* [For Client PC] CPU: Intel Core-i7-4770 or greater (3.4 GHz or greater) Memory: 8 GB or more
Operating System	Windows 10 Pro/Windows 10 Enterprise 64-bit Windows Server 2012 Standard 64-bit Windows Server 2012 R2 Standard 64-bit Windows Server 2016 Standard 64-bit
Supported XProtect Server	Milestone XProtect Corporate 2018 R1/2018 R2/2018 R3/2019 R1/2019 R2/2019 R3/2020 R1/2020 R2/2020 R3 Milestone XProtect Expert 2018 R1/2018 R2/2018 R3/2019 R1/2019 R2/2019 R3/2020 R1/2020 R2/2020 R3 Milestone XProtect Professional+ 2018 R1/2018 R2/2018 R3/2019 R1/2019 R2/2019 R3/2020 R1/2020 R2/2020 R3 Milestone XProtect Professional 2018 R1/2018 R2/2018 R3/2019 R1/2019 R2 Milestone XProtect Express+ 2018 R1/2018 R2/2018 R3/2019 R1/2019 R2/2019 R3/2020 R1/2020 R2/2020 R3
Supported XProtect Client	Milestone XProtect Smart Client 64-bit 2018 R1/2018 R2/R2018 R3/2019 R1/2019 R2/2019 R3/2020 R1/2020 R2/2020 R3 Milestone XProtect Smart Client for Express and Professional 64-bit 2019 R2
Software	[For Analysis Server] .NET Framework 4.6.1 or later SQL Server Express 2016 Visual C++ 2015 Runtime Library [For Client PC] .NET Framework 4.5.2 or later
Display Language	Japanese/English/French/Italian/German/Spanish - Linked to the language settings of Milestone XProtect Smart Client. Displayed in English for other languages than listed above.

* In the case of simultaneously executing five analysis. The specifications required vary according to the number of analysis to be executed.

■ Input Data Requirements

Supported Cameras	Milestone XProtect Compliant
Input Video	Live/recorded video from network cameras registered to Milestone XProtect Maximum resolution: 5472 x 3648

■ Limitations

- Depending on the input video, the number of people in the video may not be properly counted. It is also possible that non-human objects may be incorrectly counted.
- The analysis speed can be affected under the following conditions;
  - When there are other programs running simultaneously
  - When multiple counts are running simultaneously
  - If the video size is large and the size of the person shown in the video is small.

- Synchronize the time for Milestone XProtect Server, Analysis Server and the Client PC in advance.
- If the time changes during the analysis due to the daylight saving time set in the OS of the Analysis Server, the software may not run correctly, or the analysis results may not be correct.
- It is recommended to operate this software in a LAN environment.
- When updating the XProtect Smart Client, first uninstall the Setting/Viewer Software and then the XProtect Smart Client. Then install the new XProtect Smart Client, followed by the Setting/Viewer Software in this order.
  If this procedure is not followed, it may not be possible to use the Setting/Viewer Software.

Note

For the latest information on this software (compatible cameras, operating environment, etc.), refer to the Canon website.

Installation

It is required to install this software to the Analysis Server and the Client PC respectively.

Install the same version of the software on the Analysis Server and Client PC.

■ Installation to the Analysis Server

Important

When updating from Version 1.0 to Version 1.1, log in to the Analysis Server with the same user name as when Version 1.0 was installed. Installation is not possible if logging in with a different user name.

1 Confirm that all other applications have been closed in the Analysis Server.

2 Double click the [CrowdPeopleCounterAnalysisServerSetup.exe] icon

The installation screen is displayed.

Important

If the installation screen for the SQL Server comes up during the installation, follow the installation steps as required. Do not cancel the SQL Server installation or the software may not install properly.

Note

- If the [User Account Control] screen is displayed, click [Yes] or [Continue].
- When using the Windows Server, Media Foundation or Desktop Experience will also be installed onto the system, when installing this software.

3 Follow the on-screen instructions to proceed with the installation, then click [Finish] in the installation completion screen.
The installation has been completed.

Important

If prompted to select whether to use an existing database, select [Enable] if wanting to continue using the count results stored in the analysis database. Select [Disable] to delete the stored count results.

Note

- After completing the installation, perform license authentication (p. 13).
- To uninstall the analysis software, select "Start" >"Settings" > "Apps" > "Apps & features". Then select [Crowd People Counter Analysis Server] on the screen that appears, and click "Uninstall".

■ Installation to the Client PC

In the case multiple Client PCs are used, perform the following procedures for all Client PCs.

Note

- To install this software, it is necessary that XProtect Smart Client is installed in advance.
- Close the XProtect Smart Client before installing to the Client PC or uninstalling.

1 Confirm that all other applications have been closed in the Client PC.

2 Double click the [CrowdPeopleCounterViewerSetup.exe] icon.

The installation screen is displayed.

Note

If the [User Account Control] screen is displayed, click [Yes] or [Continue].

3 Follow the on-screen instructions to proceed with the installation, then click [Finish] in the installation completion screen.
The installation has been completed.

Note

To uninstall the Setting/Viewer Software, select "Start" >"Settings" > "Apps" > "Apps & features". Then select [Crowd People Counter Viewer] on the screen that appears, and click "Uninstall".

License Authentication

This software requires license authentication in the Analysis Server.

The following process explains the method to achieve license authentication, on computers with this software installed and connected to the internet.

For details on the license authentication, for example license authentication for computers which the software has been installed on and yet cannot be connected to the internet, refer to the “Software License Registration Guide”.

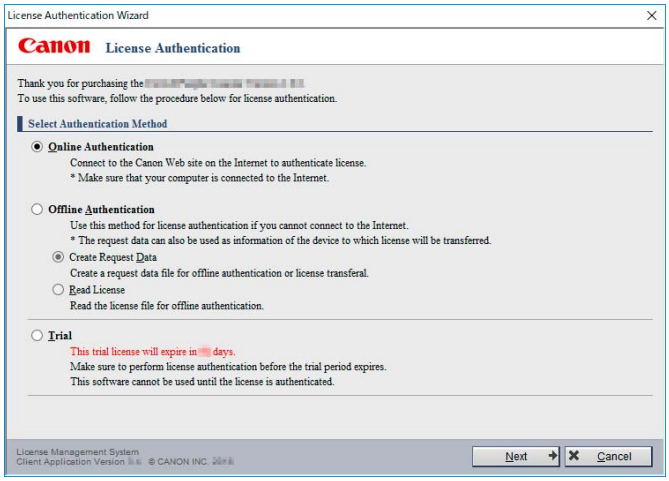
Note

License authentication is not necessary in the Client PC.

1 In the Analysis Server, click [Start] > [Webview Livescope] > [Crowd People Counter License Authentication].

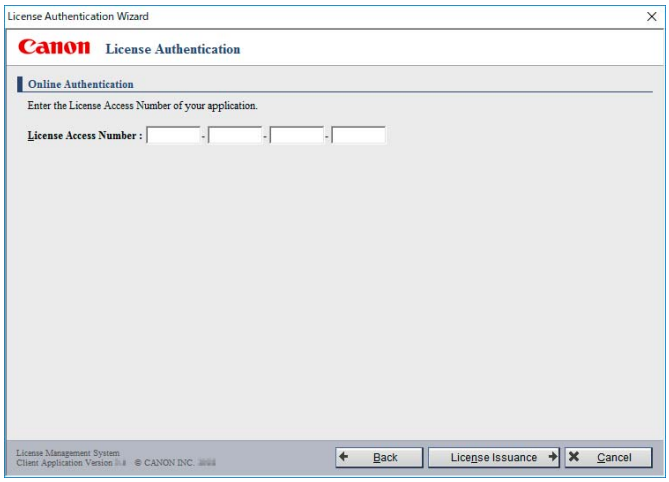
The License Authentication wizard will appear.

2 Select [Online Authentication], and click [Next].



A window to input the License Access Number will be displayed.

3 Enter the 16-alphanumeric character (4 characters x 4) license access number, and click [License Issuance].



For the license access number, please contact a Canon sales representative or its reseller partner.
When the [License Authentication Completed] window is displayed, click [Finished].

Important

This software can be used without a license if [Trial] is selected during the installation. However, there is a limit on the trial period that the software can be used. The trial period is counted from when the software is first installed on the system. The software cannot be launched again after the trial period has expired. Please authenticate the license during the trial period.

Note

- With one license, it is possible to perform the count on one camera. It is necessary to add licenses for counting on two or more cameras simultaneously. If there are multiple licenses, perform authentication for each license as described in the procedure above.
- By performing license authentication, the count is enabled.

Privileges

The available operations with this software vary according to the privileges of the user logging in to XProtect Smart Client. “Administrators” and “Guest Users” of this software have the following differences.

Administrator can use all the functions of this software, while the Guest User can only refer to the analysis result.

Important

It is recommended that multiple Administrators do not log in simultaneously. In the case when multiple users are signed in as the Administrator and simultaneously access the Analysis Server, the last setting will be reflected in the results.

According to the authentication method and privileges for XProtect Smart Client, the privilege of this software is set to either Administrator or Guest User.

Authentication Method for XProtect Smart Client Log in	User	Privilege of this Software
Windows Authentication	User added as a Windows “administrator”*1	Administrator
	User added as a “standard user” on Windows*2	With XProtect Smart Client configuration privileges: Administrator
		Without XProtect Smart Client configuration privileges: Guest User
Basic Authentication	User added with XProtect Management Client*3	Guest User

*1 Since a user added as a Windows “administrator” has XProtect Smart Client configuration privileges by default, the user can basically use this software as is as an Administrator.

*2 For a user added as a “standard user” on Windows, it is necessary to specify in XProtect Management Client whether or not the user has XProtect Smart Client configuration privileges. Whether a user is an Administrator or Guest User of this software changes depending on whether or not the user has configuration privileges. In addition, it is necessary to add in advance a user as a “Windows user” to “Roles” in XProtect Management Client (“Users” for some editions of Milestone XProtect) in order to log in to XProtect Smart Client.

*3 A user added with XProtect Management Client can only use this software as a Guest User. In addition, it is necessary to add in advance a user as a “Basic user” to “Roles” in XProtect Management Client (“Users” for some editions of Milestone XProtect) in order to log in to XProtect Smart Client.

Note

- How to add users and configure privileges varies depending on the Milestone XProtect edition. For details, refer to the Milestone XProtect user manual.
- Depending on the Milestone XProtect edition, use XProtect Management Application instead of XProtect Management Client for configuration.
- For details on enabled operations by Administrator and Guest User respectively, refer to “Button Explanations” (p. 16).

Button Explanations

This software can be set and operated from the XProtect Smart Client in the Client PC.
Start the XProtect Smart Client and move the mouse pointer on the image, and the following buttons will appear.

Note

- Buttons marked with ● are displayed only when logged in as the Administrator.
- If multiple XProtect Smart Clients are run simultaneously on the same Client PC, the buttons will be displayed on the first screen only.

(1) Crowd People Counter ●
Counts the number of people being shown on the live video (p. 31).

(2) Schedule ●
Sets the schedule for when to automatically count the number of people.
To count the number of people in the recorded video, specify the date and time when the video was captured (p. 37).

(3) Graph View
Graphs the count results. From the graph, it is also possible to view the image when counting (p. 53).

(4) Download Analysis Results
Downloads the CSV file or JPEG file analysis results from the Analysis Server to the Client PC (p. 59).

(5) Multiple Camera Notification ●
Sets to send a notification to Milestone XProtect Server when the total number of people counted from multiple cameras exceeds a certain number, or below a certain number (p. 65).

(6) Execution Status ●
Lists the cameras for which the count is ongoing and those for which the count is scheduled (p. 51).

(7) Change Display
Switches the display of the video being counted and the live video (p. 32).

(8) Counter Settings ●
Makes settings for counting (p. 23) settings for output data (p. 19), and settings for displaying count results in density (p. 33).

(9) Connection Settings
Makes settings for connecting the Analysis Server, Milestone XProtect Server, and Client PC. When logging in as a Guest User, only settings to connect the Analysis Server to the Client PC is enabled (p. 18).

Pre-Setting

Before conducting the count, configure settings for connection, file saving, etc. beforehand.

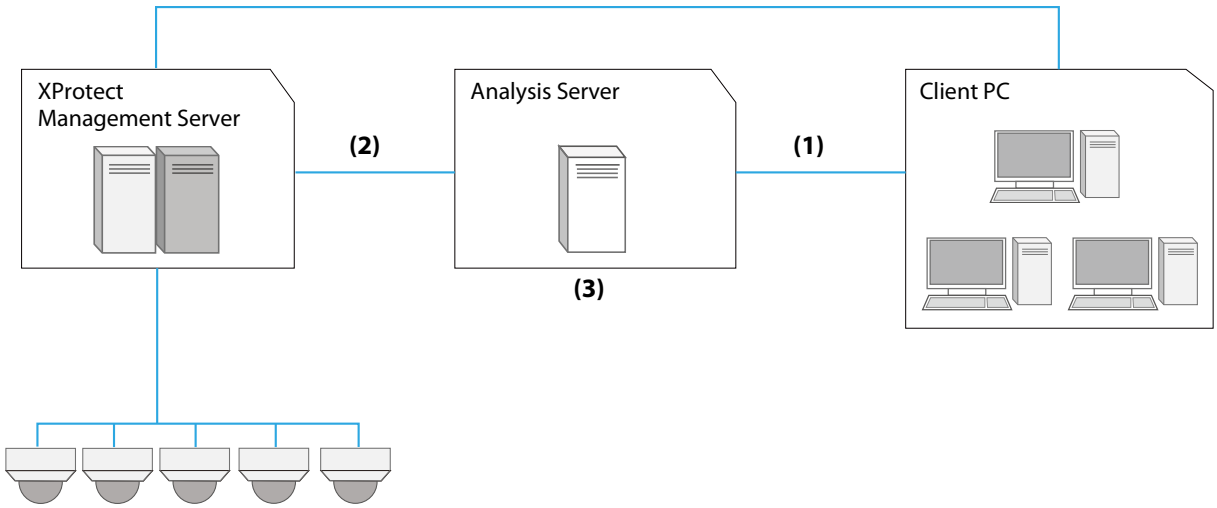
Setting Overview

Configure the settings in the following order:

(1) Connection setting for the Client PC and Analysis Server

(2) Connection setting for the XProtect Management Server and Analysis Server

(3) Output setting for the Analysis Server



Be sure to set (1) and (2). For details, refer to “Connection Settings” (p. 18).

Configure (3) as required. For details, refer to “Output Settings to Analysis Server” (p. 19).

Note

Only perform the counter settings (p. 23) after performing these settings.

Connection Settings

Connecting the Client PC, Analysis Server, and XProtect Management Server.

Important

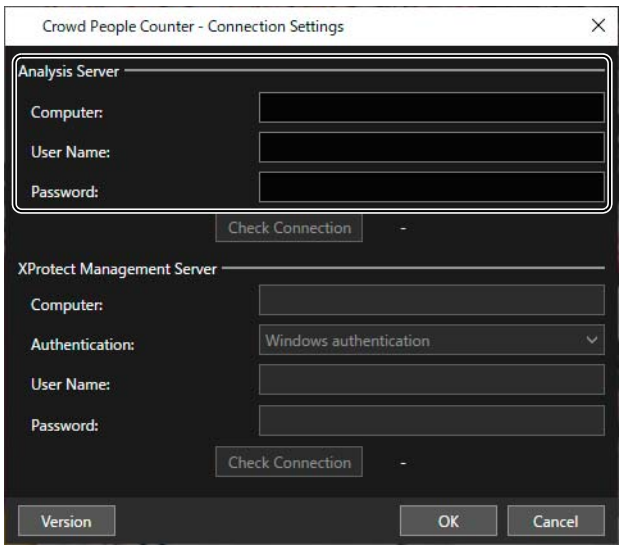
Administrator's privilege is required for connecting Analysis Server and XProtect Management Server.

1 From the Client PC, log in to the XProtect Smart Client as the Administrator.

2 Open the setting screen by clicking the connection settings button [ ] on the tool bar in any camera's screen.

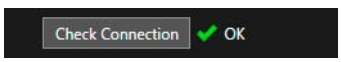
3 Enter the computer name, user name, and password for the [Analysis Server].

Enter the Analysis Server's computer name and the user information to log in to Windows of the Analysis Server.



4 Click [Check Connection].

If [OK] is displayed, the connection between the operating Client PC and the Analysis Server is correct.



Note

When [OK] is displayed in the [Check Connection], it will be possible to enter items in the [XProtect Management Server].

5 Enter computer name, authentication, user name, and password for the [XProtect Management Server].

Enter the computer name of the XProtect Management Server and user information enabling to log in as the Administrator for Milestone XProtect.

6 Click [Check Connection].

If [OK] is displayed, the connection between the Analysis Server and the XProtect Management Server is correct.

7 Click [OK] on the screen's lower area.

The settings are reflected and the Analysis Server, the XProtect Management Server, and Client PC are connected.

> **Important**
>
> In order to have the settings reflected, it is necessary to have the [Check Connection] results as [OK].

■ Connecting the Second Client PC and More

When there are more than two Client PCs, it is necessary to connect each Client PC to the Analysis Server. Follow the steps below for all the Client PCs.

1 Log in to the XProtect Smart Client as a Guest User from the Client PC.

2 Repeat the same steps 2 to 4 as performed for the first Client PC.

3 Click [OK] at the bottom of the screen.

The settings are reflected and the Analysis Server, the XProtect Management Server, and Client PC are connected.

Output Settings to Analysis Server

When performing the count, the results are stored on the Analysis Server as an analysis database.

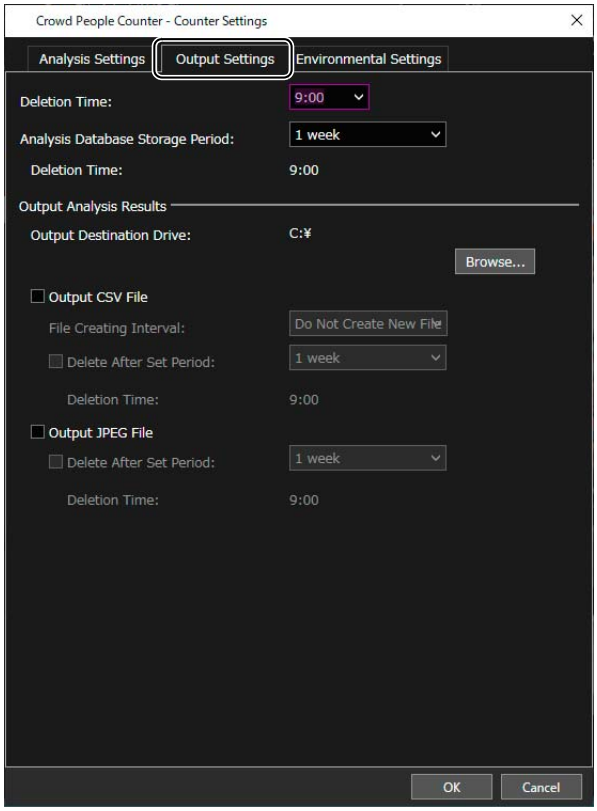
Set the period for storing the analysis database in the [Output Settings] tab from the [Counter Settings] screen. Analysis databases are stored for up to one year and are automatically deleted after that. While the analysis database is saved, it is possible to display a graph from the count result or download the file of the count result to the client PC. Also, when counting is performed, the results can be outputted to the Analysis Server as a CSV file or JPEG file. Outputting a CSV file or JPEG file can be used for long-term storage of count results, etc.

1 From the Client PC, log in to the XProtect Smart Client as the Administrator.

2 Click the counter settings button [] on the tool bar in any one of the camera screen.

The [Counter Settings] screen will open.

3 Click the [Output Settings] tab.



4 Set the [Deletion Time] and [Analysis Database Storage Period].

On the set scheduled time of the [Deletion Time] every day, older count results than the set time will be deleted, while keeping only the count results during the period set in the [Analysis Database Storage Period]. The analysis database can be saved up to one year based on the set scheduled time of the [Deletion Time].

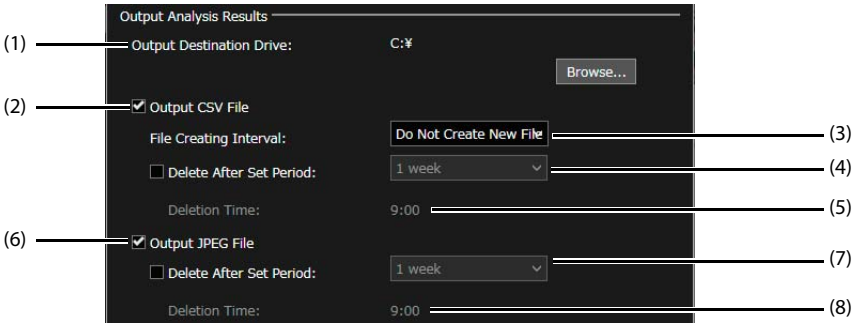
Important

- The [Deletion Time] applies to the capturing time of the video and not to the time when the count occurred.
  For example, if the [Analysis Database Storage Period] set for [1 year] and the [Deletion Time] is for [18:00], when the date and time is September 10, 2019 at 18:00, all the count results of video recorded back before September 10, 2018 18:00 will be deleted.
  Note that when counting people in the recorded video recorded before the Analysis Database Storage Period, the count results may be deleted at the Deletion Time of that day counting is performed.
- To balance the load, it is recommended to set a deletion time to avoid the time when other processing such as analysis is performed.
  Immediately after shortening the storage period, such as from one year to one day, many count results are deleted, increasing the load on the Analysis Server.

Note

When [1 month], [2 months], [3 months] or [6 months] is selected, and the corresponding month does not contain the same date, it will be based on the end of the month. For example, if it is March 31, and [Analysis Database Storage Period] is set to [1 month], data until February 28 will be deleted. If the [Analysis Database Storage Period] is set to [2 months], the data before January 31 will be deleted.

5 Settings to save the count results to a CSV file or JPEG file.



(1) [Output Destination Drive]
When outputting the CSV file or JPEG file count results to the Analysis Server, a drive to save the file needs to be selected. Click [Browse] to display the possible drives for the Analysis Server and choose the selection.

Important

- It is recommended to use a drive other than the C drive (drive on which the operating system is installed)for [Output Destination Drive].
- Do not use removable disks, such as external disks or network drives, as output drives.

(2) [Output CSV File]
When checked, a CSV file for the count results will be outputted.

(3) [File Creating Interval]
It is possible to switch the output destination CSV file at regular intervals. This can be set, when wanting to check the analysis results in order from the completed output file, or to prevent the size of the CSV file from becoming too large. For example, if analysis is performed for 10 minutes and is set to [1 min.], 10 CSV files describing the analysis results for every 1 minute will be outputted. If set to [Do Not Create New File], only one CSV file containing all analysis results will be outputted.

(4) [Delete After Set Period]
By checking and selecting a period, the output CSV file will be deleted after a certain period has passed.

(5) [Deletion Time]
Displays a time schedule to delete the CSV file.

(6) [Output JPEG File]
When checked, a JPEG file for the count results will be outputted.

(7) [Delete After Set Period]
By checking and selecting a period, the output JPEG file will be deleted after a certain period has passed.

(8) [Deletion Time]
Displays a time schedule to delete the JPEG file.

Note

- The deletion time for CSV file and JPEG file will be the same as set in step 4.
- Refer to step 4 for the [Deletion Time]. However, in the case of a CSV file, the deletion time is applied to the last frame of the counted video. For example, if one CSV file is outputted by counting the images taken from 00:00 on September 10, 2019 to 00:00 on September 12, 2019, and the storing period is [1 day], if the deletion time is [03:00], this CSV file will be deleted at 03:00 on September 13, 2019.

6 Click [OK].

Settings will be saved.

Important

If there is insufficient space on the Analysis Server when the files are set to be stored, the following will occur:

- If setting the CSV file or JPEG file to be deleted after a certain period: Files are deleted in the order of old to new.
- If the CSV file or JPEG file is not set to delete after a certain period: The analysis will stop.

Note

The settings on the [Output Settings] tab apply to all cameras.

Counter Settings

Set the conditions for counting people. Settings must be made for each camera.

Important

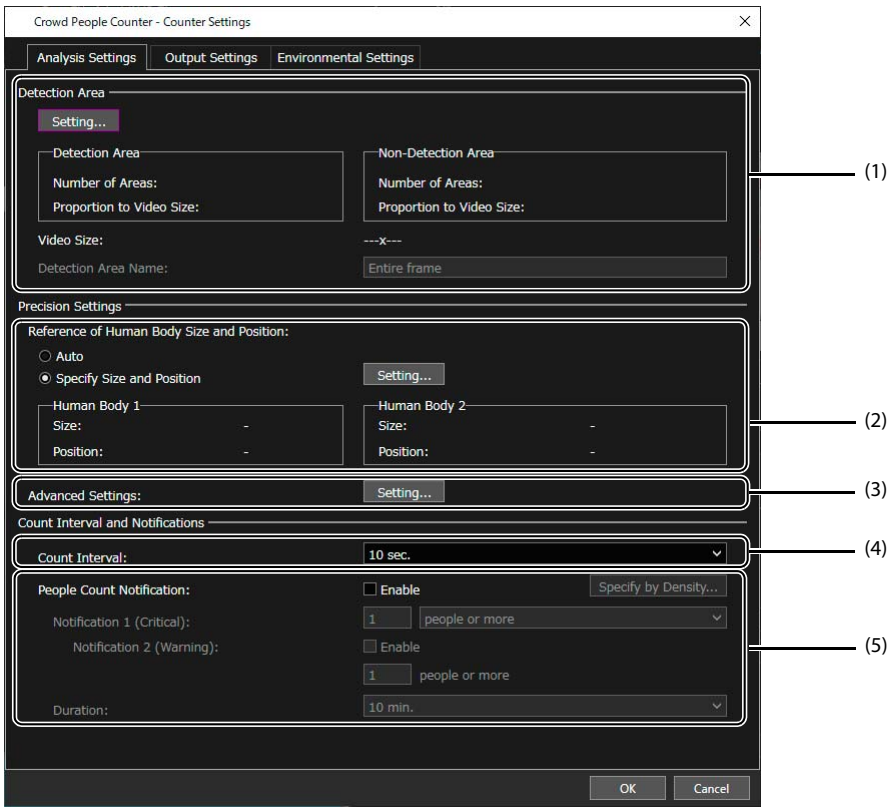
Refer to “Pre-Setting” (p. 17) and perform connection settings and output settings for the Analysis Server in advance. Unless the settings have been completed, the count cannot be conducted.

Setting the Count

1 From the Client PC, log in to the XProtect Smart Client as the Administrator.

2 Click the counter settings button [ ] on the tool bar in the screen of the camera for which the count is to be made.
The [Counter Settings] screen will be displayed.

3 Set each item in the [Analysis Settings] tab.



(1) [Detection Area]
Sets a specific area in a video to count. Also sets a specific area in a video not to count. For details, refer to “Setting Detection Areas and Non-Detection Areas” (p. 25).
Unless the area is set, people are counted in the entire screen.

(2) [Reference of Human Body Size and Position]
Sets the human body size and position as reference for detection. Be sure to perform this setting.
When selecting [Specify Size and Position], it is necessary to click [Setting] and manually set the human body size and position as reference. For details, refer to “Setting the Reference of Human Body Size and Position” (p. 28).

(3) [Advanced Settings]
Settings related to the count result when there is no person in the video. For details refer to “When the count result does not become 0 in a video without a person” (p. 76).

(4) [Count Interval]
Specifies the time interval to count people. For example, if [10 sec.] is selected, people will be counted once every 10 seconds. For details on the timing to perform the count, refer to “Count Timing” (p. 24).

(5) [People Count Notification]
By selecting the [Enable] check box in [People Count Notification] and entering the number of people, the Milestone XProtect Server will be notified when the number of people larger or smaller than the set value is continuously being counted during a certain time.
For details of notification settings, refer to “Notifying the Milestone XProtect Server” (p. 61).

4 Click [OK].

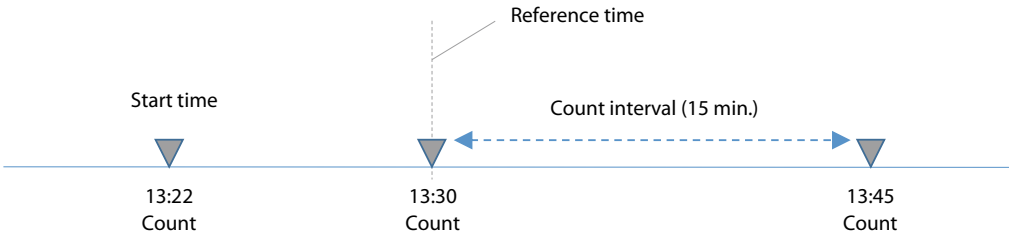
Settings will be saved.

Note

- Perform the settings in the [Analysis Settings] tab for each camera.
- The [Analysis Settings] tab settings are used in the counting for live video (p. 31). It is also used as the default setting for the counting triggered by the schedule (p. 37).
- For the counting triggered by the schedule, [Detection Area], [Count Interval], and [People Count Notification] can be changed for each schedule. If the settings are changed in the [Analysis Settings] tab, the changes will not be reflected in the pre-registered schedules.
- If the settings are changed while the counter is running, the new settings are reflected when the running count ends and counting is started again.
- It is also possible to view the count result as density on the screen. For details, refer to “Displaying Count Results in Density” (p. 33).

■Count Timing

When the count is executed, it will count once immediately after start. After that, it counts at times separated by count intervals, starting from 00:00:00. This is referred to as “Reference Time”.
For example, if the [Count Interval] is set to [15 min.] and count starts at 13:22, a count is performed once at 13:22, immediately after the start, and after that, count will be performed at the reference time, 13:30, 13:45, 14:00 and so on.



Setting Detection Areas and Non-Detection Areas

By setting the detection area, the number of people in the area can be counted. On the other hand, by setting the non-detection area, the number of people in the area are not counted. Set the detection areas and non-detection areas as needed.

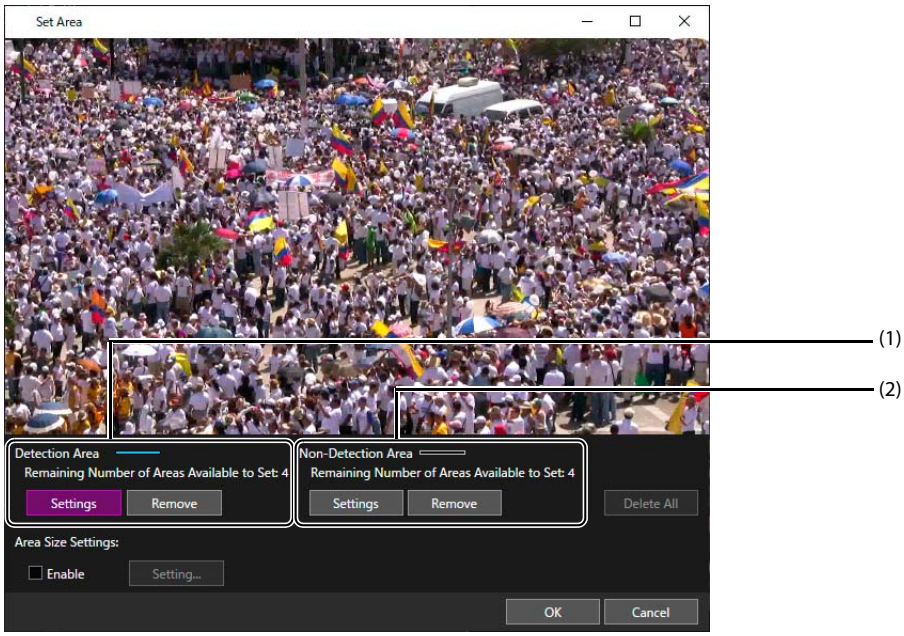
1 In the [Analysis Settings] tab of the [Counter Settings] screen, click [Setting] for [Detection Area].

The scene when the [Settings] is clicked will be displayed as a still image on the [Set Area] screen.

Note

When using a recorded video to set the detection area, view the [Counter Settings] screen on the "Playback" tab of the XProtect Smart Client.

2 Click [Settings] of [Detection Area] or [Non-Detection Area].

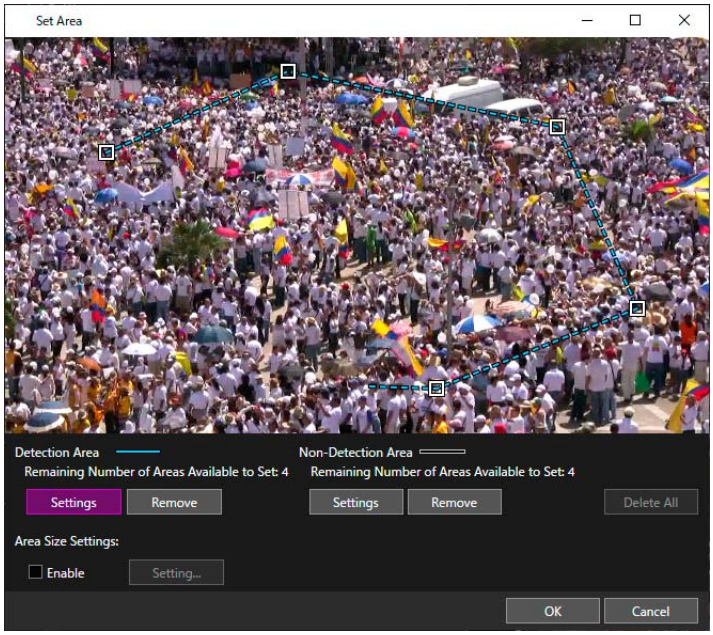


(1) Set the Detection Area
(2) Set the Non-Detection Area

To add detection areas, click [Settings] of [Detection Area]. To add non-detection areas, click [Settings] of [Non-Detection Area]. Detection areas can be added or edited when [Settings] is selected (purple).

3 Click on the image to surround the area to be set as the detection area or non-detection area.

An area can be set using a polygon with three to eight points. Each time the image is clicked, a [□] appears on the image as a point, and a dotted line is drawn between the points. Each time a right click is made, the clicked point is deleted. By clicking the first point, the polygon closes, displaying the area with a solid line. The area number is displayed on the line.



Note

- The heads of the persons in the detection area are counted.
- Detection area is displayed in blue, while non-detection area is in black.
- If detection area and non-detection area are overlapped, non-detection area is prioritized.
- An area cannot be placed over another area of the same type.
- Detection area and non-detection area can be set up to 4 for each. The remaining number of areas available to set is displayed on the above of the [Settings] of [Detection Area] and [Non-Detection Area].
- Numbers 1 to 4 are assigned to the detection areas in the order in which they were set, and are displayed above the area line. Numbers are used for area size information (p. 34), graph display (p. 53), and count results (p. 73) described in CSV files.
- For the process to edit or delete detection areas, refer to “Editing an Area” (p. 27) or “Removing an Area” (p. 28).

4 Click [OK].

The settings are saved and the [Set Area] screen closes. The number of the detection areas set and non-detection areas set, the video size of the input video, and the proportion of the detection area to the video size will be displayed on the [Analysis Settings] screen.

Note

- If the video size of the input video is changed, the size of the set area(s) also changes. Reset the detection area(s), if the camera's video size settings are changed.
- The values displayed in [Proportion to Video Size] and [Video Size] are updated when opening the [Set Area] screen and click [OK].

5 Enter an arbitrary name for [Detection Area Name].

Add an arbitrary name to the detection area and non-detection area set (at most 8 areas).
Set [Detection Area Name] using a name within 15 characters. It is forbidden to use the following characters: /, \, <, >, *, ?, " ,| , : , ; or _.

Important

When setting a detection area or non-detection area, be sure to also set [Detection Area Name]. This name will be used later for graphing the count results and for the CSV file output. It is recommended to use a name indicating the place where the video is captured, for example, to easily recall which area it was set in.

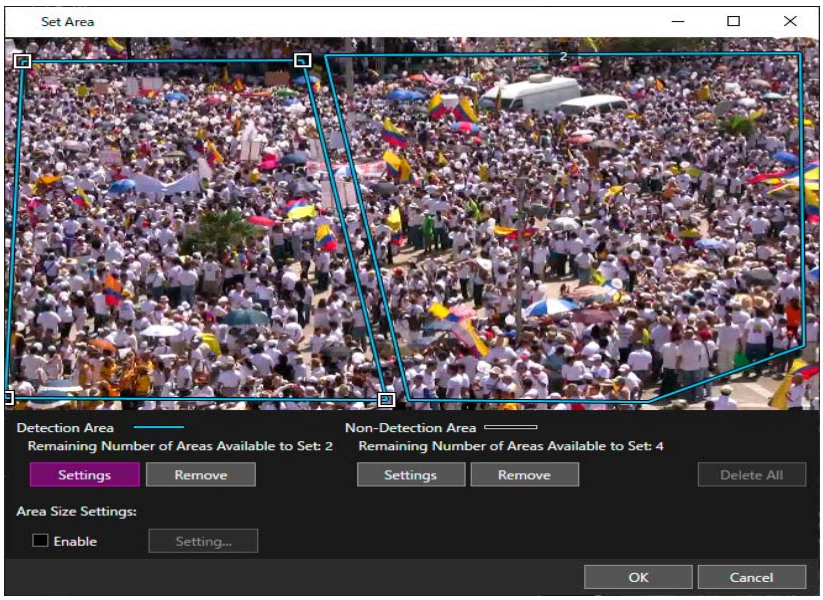
■ Editing an Area

1 Click [Settings] of [Detection Area] or [Non-Detection Area] in the [Set Area] screen.

When [Settings] is selected (purple), the set areas can be edited.

2 Click in the detection area to be edited.

When moving the mouse pointer into the detection area, the area will be outlined with a bold line. If clicked within the area, the points of the detection area will appear.



3 Drag a point.

Click and drag the points, and the shape of the polygon can be edited.

Note

Points cannot be added or removed. In order to change the number of points, remove the area and set a new.

■ Removing an Area

1 Click [Remove] of [Detection Area] or [Non-Detection Area] in the [Set Area] screen.

When [Remove] is selected (purple), the set areas can be removed.

2 Click in the area to be removed.

When moving the mouse pointer into the area, the area will be outlined with a bold line. Click the area to remove.

Note

For removing all the detection areas and non-detection areas in one operation, click [Delete All]. [Delete All] can be enabled when any [Remove] is enabled.

Important

Numbers 1 to 4 are assigned to the detection areas in the order in which they were set, however, if a detection area is deleted, numbers are reassigned to the remaining detection areas. Therefore, depending on the detection area deleted, the number can be differently assigned. Because the detection area number is used in the area size information (p. 34), graph display (p. 53), and count results (p. 73) described in CSV files, when a detection area is deleted, confirm the numbers on the remaining detection areas.

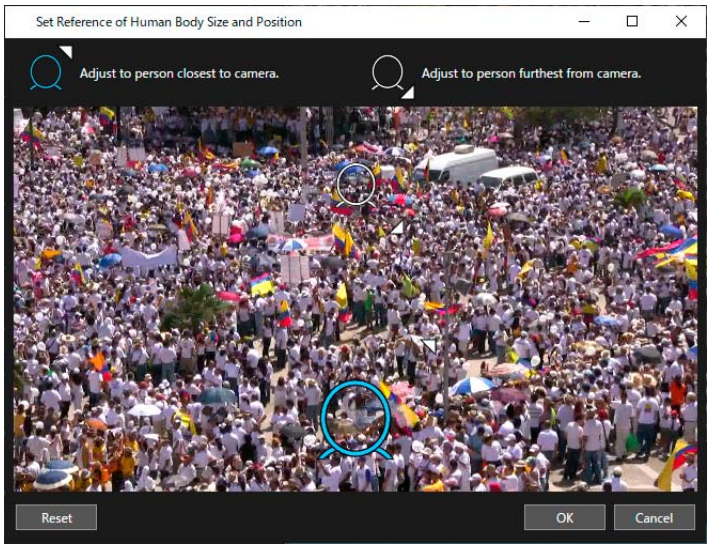
Setting the Reference of Human Body Size and Position

This software counts the number of people assuming that the human body size in the video becomes smaller from front to back. Here, the setting of human body size and position, the reference for the analysis, is explained. Reference of human body size and position can be set manually or automatically.

■ Setting the Reference of Human Body Size and Position Manually

It is recommended to set the reference human body size and position with persons on the top and bottom edge of the video. When using a recorded video for settings, view the [Counter Settings] screen on the “Playback” tab of the XProtect Smart Client.

1 In the [Analysis Settings] tab of the [Counter Settings] screen, under [Reference of Human Body Size and Position], select [Specify Size and Position] and click [Setting].



The scene when the [Settings] is clicked will be displayed as a still image on the [Set Reference of Human Body Size and Position] screen.
Two [ ] appear on the image.

2 Move each one of the two [◯] respectively by clicking and dragging to place the icon on the person to be the reference.

Drag the blue [◯] (the one with the [◹] in the upper right corner) over a person appearing large at the bottom of the image.
Drag the white [◯] (the one with the [◿] in the lower right corner) over a person appearing small at the top of image.

Set the reference of the human body size by choosing a person appearing large and a person appearing small in the image. Try to select the person close to the top and the other to the bottom.

3 Click and drag the [◹] or [◿] in order to adjust the size and the position of the [◯] according to the width of the person's head.

Important

- The size of [◯] must be adjusted accurately to the width of the person's head. Otherwise the count may not be accurate.
- In case there are any distortion of the image towards the edges that may come from the lens, choose a position free from distortion.

Note

- The displayed image can be enlarged/reduced by changing the size of the [Set Reference of Human Body Size and Position] screen. It can also be done by moving the mouse wheel.
- By clicking [Reset], the size and the position of the [◯] return to the default setting.

4 Click [OK].

The [Set Reference of Human Body Size and Position] screen closes. The information set for the human body size and the position is displayed in the [Counter Settings] screen.

Note

If the video size of the camera is changed, reset the human body size and the position.

■ Setting the Reference of Human Body Size and Position Automatically

In the [Analysis Settings] tab of the [Counter Settings] screen, selecting [Auto] under [Reference of Human Body Size and Position] enables to set the reference of human body size and position automatically.

Important

- By selecting [Auto] in [Reference of Human Body Size and Position], the reference of human body size and position is set automatically by judging from the size of the people in the image at the start of the analysis. Therefore, the restart of an analysis after an interruption or the relaunch of the Analysis Server may change the reference of human body size and position each time. In addition, when only a few people are found in the image at the start of the analysis, human body size and position may not be set properly.
- In the following cases, it is recommended to select the [Specify Size and Position] and manually set the reference of human body size and position.
  - Only a few people at start of analysis
  - When analysis is stopped/restarted repeatedly under the same settings
  - When the assumed result was not obtained after executing the analysis; for example, the counted number of people were fewer than expected.

Counting People in Live Video

Counts people in live video being displayed in the live view of XProtect Smart Client.

Important

The count is executed by the settings set in the “Counter Settings” (p. 23).

1 From the Client PC, log in to the XProtect Smart Client as the Administrator.

2 Click the Crowd People Counter button [ ] on the tool bar in the screen of the camera for which the count is to be made.

The count will start. The Crowd People Counter button changes to [ ] during counting.
For details on the screen that appears during counting, refer to “Screen Display during Counting” (p. 32).

Note

- To end counting, click the Crowd People Counter button.
- Even when the XProtect Smart Client is closed during counting, the counting will continue as long as the Analysis Server is running.
- To automatically count people at a specified time or in a recorded video, refer to “Counting People Using the Schedule Function” (p. 37).

Screen Display during Counting

During counting, “Counting people” will appear in the upper right of the camera screen.

When this occurs, using the Change Display button [], it is possible to switch between displaying live video and the video being counted. Each time the Change Display button is clicked, the video is changed in the order of live video > video during counting > video during counting with a colored dot indicating that the person has been detected.

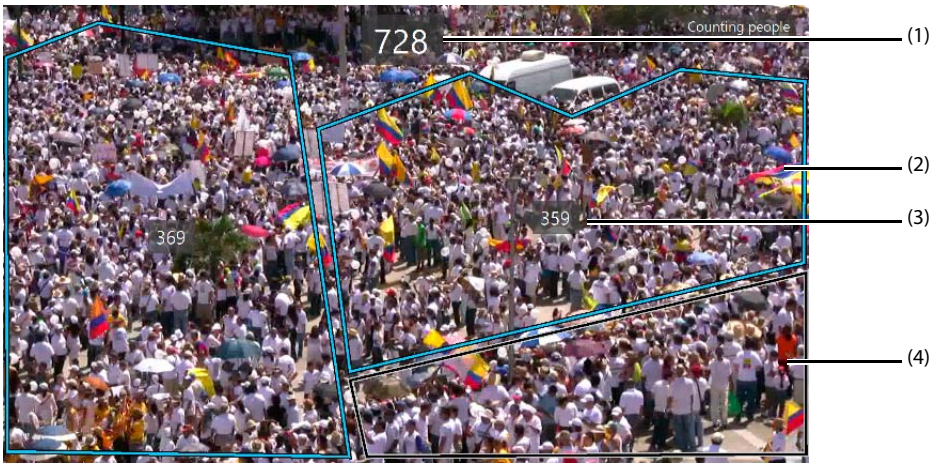
Note

When the density display setting is enabled, videos are changed in the following order of live video > video during counting (people count display) > video during counting (density display) > video during counting with a colored dot indicating that the person has been detected. For details on setting the density display, refer to “Displaying Count Results in Density” (p. 33).

- Live video

“Counting people” appears in the upper right of the camera screen.

- Video during count (people count display)



(1) Counted number in the entire screen or in all the detection areas

(2) Set detection area

(3) Number of people per detection area

(4) Set non-detection area

- Video during counting with the colored dots added to indicate people being detected

(1) Counted number in the entire screen or in all the detection areas

(2) Set detection area

(3) Set non-detection area

(4) A colored dot indicating that the person has been detected

(5) Number of people detected in each detection area

Important

During the count of multiple images of resolution higher than 1920 x 1080, enlarging the size of the XProtect Smart Client window will increase the load to the Client PC, which may delay the displaying or make the operation unstable. In such a case, shrink the window size of the XProtect Smart Client or reduce the number of views displaying the count results.

Note

- It may take time to change the display after clicking the Change Display button [ ]. The text "Changing Display" is displayed in the lower right corner of the screen.
- During counting of a recorded video, only “Counting people” is displayed at the upper right of the screen. The Change Display button [ ] cannot be used.
- Regarding “Counted number in the entire screen or in all the detection areas”, if no detection area is set, the counted number in the entire screen is shown. When detection areas are set, the total number of people that are counted in each area is shown.
- If a video with the colored dots indicating detected persons is displayed, the video will be updated at the interval set in [Count Interval].
- A colored dot shows that the person has been detected but it is only a rough reference and the number of dots may not match that of the people counted.
- If the Moving Object Mask for Milestone XProtect is installed, video with the colored dots indicating detected persons appears only when logged in to XProtect Smart Client as an Administrator (p. 15).

Displaying Count Results in Density

Use the change display button [ ] to display the count results in density (number of people per unit area) (p. 32). It is necessary to enable the density display (p. 33) and set the area size (p. 34) in advance.

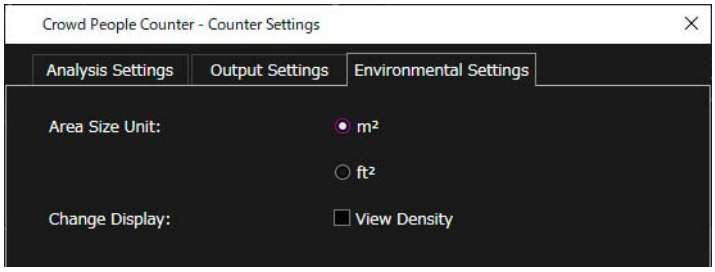
■Enabling Density Display

1 From the Client PC, log in to the XProtect Smart Client as the Administrator.

2 Click the counter settings button [] on the tool bar in any one of the camera screen.
The [Counter Settings] screen will open.

3 Click the [Environmental Settings] tab.

4 In [Area Size Unit], select either [m^2] or [ft^2].



5 In [Change Display], check [View Density].

6 Click [OK].
Settings will be saved.

Note

The settings on the [Environmental Settings] tab apply to all cameras.

■Entering the Area Size Information

Enter the area size information. Confirm the area size of the location set as the detection area in advance.

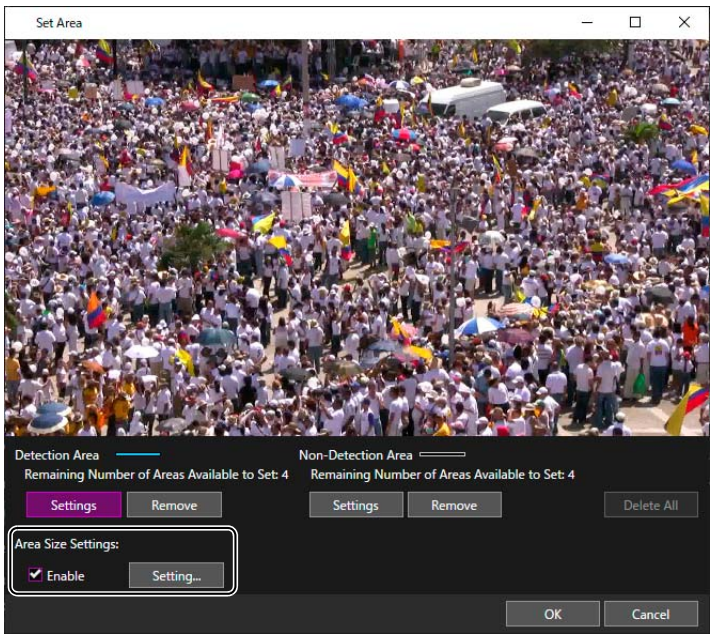
1 From the Client PC, log in to the XProtect Smart Client as the Administrator.

2 Click the counter settings button [] on the tool bar in the screen of the camera for which the count is to be made.
The [Counter Settings] screen will be displayed.

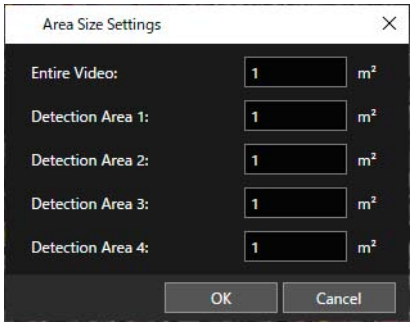
3 Click the [Analysis Settings] tab.

4 Click [Setting] for [Detection Area].

5 On the [Set Area] screen, check [Enable] under [Area Size Settings] and click [Setting].



6 Enter the area size of the detection area on the [Area Size Settings] screen.



Important

- Enter the area size for each detection areas set. If detection area is not set, enter [Entire Video]. Entering “0” is not allowed.
- The value entered in [Entire Video] is not used when one or more detection areas are set.
- If the detection and non-detection areas overlap, enter an area size that does not include the non-detection area.

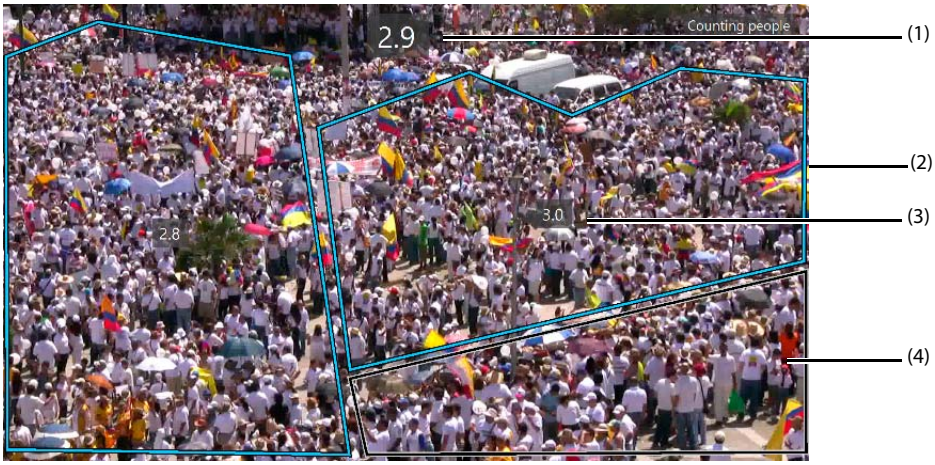
7 Click [OK] to close the screen.

8 Click [OK] to close the [Set Area] screen.

9 Click [OK] to close the [Counter Settings] screen.

■Display Screen during Counting

When the density display setting is enabled, it is possible to click the change display button [] to display the next video.



(1) Density of the entire screen or of all detection areas

(2) Set detection area

(3) Density in each detection area

(4) Set non-detection area

Note

- Density is expressed as a number with one decimal place. The second decimal place and lower is rounded down.
- When the area size settings is not enabled, the density value is not displayed and [Area size is not set.] is displayed at the bottom right of the screen.
- For details on using the change display button [], refer to “Screen Display during Counting” (p. 32).

Counting People Using the Schedule Function

Sets a schedule and counts people in live video.
It is also possible to count people in a video recorded at a specific date and time.

Important

- Follow the directions in “Counter Settings” (p. 23) and configure settings in advance.
- It is possible to set up to 50 schedules for an Analysis Server. Also, up to five schedules can be set for one camera.

Counting People in Live Video

Automatically counts people in live video. It is possible to count at the scheduled date and time, or count regularly at the same time everyday.

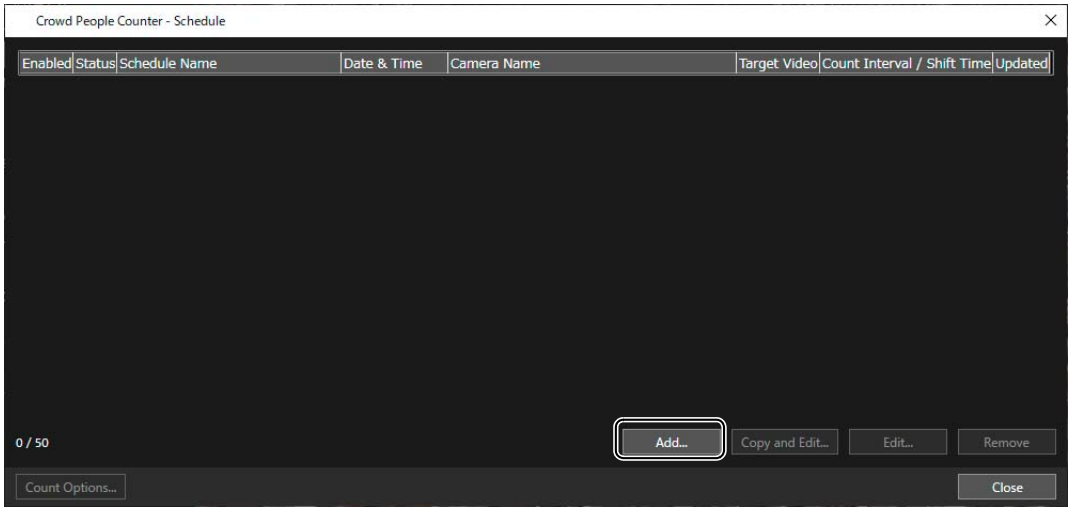
Important

When the count is running on a number of cameras at the same time, the Analysis Server can be overloaded and may take time to count. In this case, it is possible to reduce the load on the Analysis Server by slightly shifting the timing of the count for each camera. For details, refer to “Counting with Multiple Cameras in the Same Time Frame” (p. 43).

1 Log in to XProtect Smart Client as an Administrator from the Client PC.

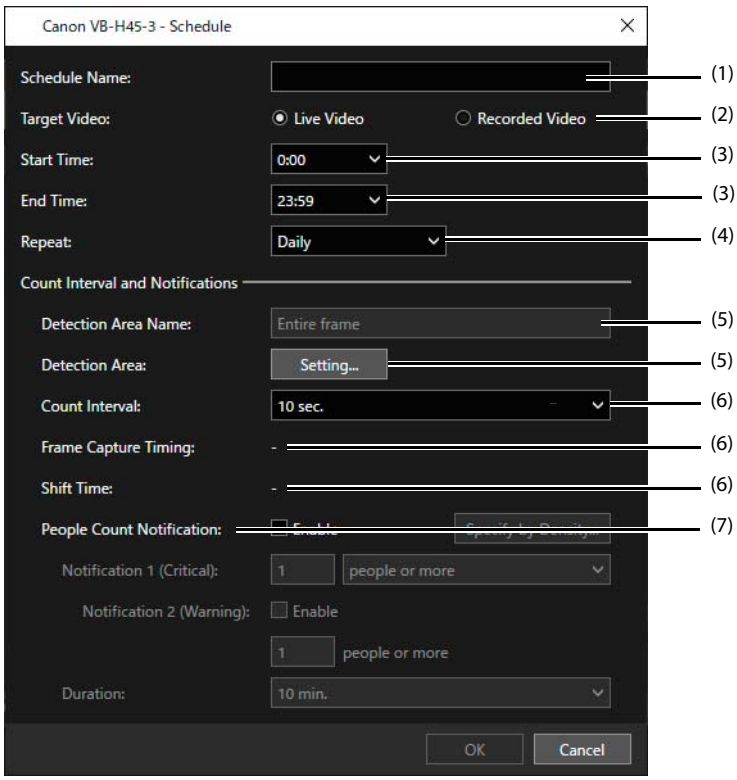
2 Click the Schedule button [ ] on the toolbar in the screen of the camera for which the count is to be made.
The schedule list screen will appear. For details on the schedule list screen, refer to “Editing/Removing Schedules” (p. 41).

3 Click [Add].



The [Schedule] screen will appear.

4 Enter each item.



(1) [Schedule Name]
Enter an arbitrary schedule name.
Set [Schedule Name] using a name within 15 characters. It is forbidden to use the following characters: /, \, <, >, *, ?, " ,| , : or ;.

(2) [Target Video]
Select [Live Video].

(3) [Start Time]/[End Time]
Set respectively the start time and end time for counting.
Select a time by clicking, or enter the time using 24-hour time format <HH:mm>. It is possible to specify the crossing into a new day as an end time, such as by setting a late night time slot.

> **Important**
>
> If using [Count Options], care should be taken about the start time set. For details, refer to “Notes on Count Start Time” (p. 49).

(4) [Repeat]
[Do not repeat]: Only runs the set schedule once.
[Daily]: Runs the set schedule daily.

(5) [Detection Area]
The detection areas configured in “Setting the Count” (p. 23) are reflected. To change the areas, click [Setting] and change the settings. For details on setting methods, refer to “Setting Detection Areas and Non-Detection Areas” (p. 25).
After setting a new detection area, enter an arbitrary name for [Detection Area Name] to distinguish it from others.

(6) [Count Interval], [Frame Capture Timing], [Shift Time]
The values set in the “Setting the Count” (p. 23) are reflected to the [Count Interval]. Make changes as necessary.
For cameras registered in [Count Options], the set count interval, frame capture timing, and shift time from group 1 count execution timings are displayed.

(7) [People Count Notification]
The values set in the “Setting the Count” (p. 23) are reflected. Make changes as necessary. For details on setting up notifications, refer to “Notifying the Milestone XProtect Server” (p. 61).

5 Click [OK].

Schedule is set and reflected to the schedule list.

6 Click [OK] in the schedule list screen.

The screen closes.

Important

- [Detection Area], [Count Interval], and [People Count Notification] set in the [Schedule] screen are only valid for that schedule. The settings cannot be reflected to the [Counter Setting] screen (p. 23).
- Analysis Server must be running at the set date and time to run a schedule.
- When there are multiple counts scheduled to run at the same time, the count with the higher priority (p. 42) will run first.

Note

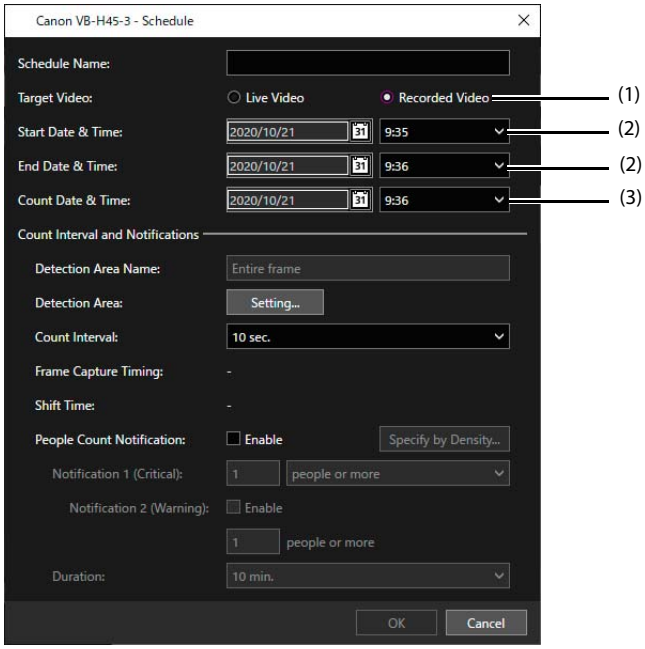
- To edit or remove a schedule, refer to “Editing/Removing Schedules” (p. 41) for details.
- For details on the screen that appears during counting, refer to “Screen Display during Counting” (p. 32).
- [Detection Area], [Count Interval] and [People Count Notification] can be changed for each schedule, but the settings cannot be reflected in the [Counter Settings] screen (p. 23). Also, even if the settings are changed in the [Counter Settings] screen, the changes will not be reflected in the pre-registered schedules.
- When running a schedule, the run history will be saved as a text file. For details on the saved file, refer to “Contents of Output File” (p. 72).

Counting People in Recorded Video

Counts people in recorded video. Execute the count at the set date and time in the recorded video for the specified period.

1 Follow the steps 1 to 3 of “Counting People in Live Video” (p. 37) to display the [Schedule] screen.

2 Enter each item.



(1) [Target Video]
Select [Recorded Video].

(2) [Start Date & Time]/[End Date & Time]
Set the start and end date and time of the captured video to be counted.
Click the calendar [] to specify the date.
Select a time by clicking, or enter the time using 24-hour time format <HH:mm>.

(3) [Count Date & Time]
Specify the date and time to count.

Note

- If a past date and time is specified for the [Count Execution Date and Time], counting starts as soon as the schedule is saved.
- For items other than (1) to (3), refer to step 4 of "Counting People in Live Video" (p. 37).

3 Click [OK].

Schedule is set and reflected to the schedule list.

4 Click [OK] in the schedule list screen.

The screen closes.

Important

- [Detection Area], [Count Interval], and [People Count Notification] set in the [Schedule] screen are only valid for that schedule. The settings cannot be reflected to the [Counter Setting] screen (p. 23).
- Analysis Server must be running at the set date and time to run a schedule.
- When there are multiple counts scheduled to run at the same time, the count with the higher priority (p. 42) will run first.

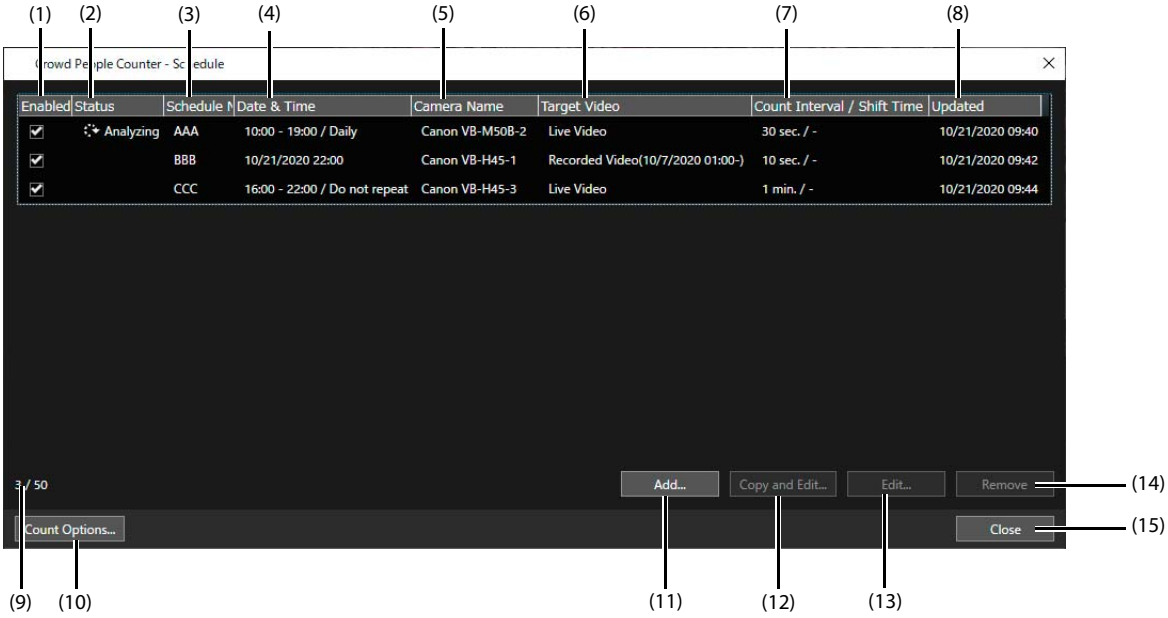
Note

- To edit or remove a schedule, refer to "Editing/Removing Schedules" (p. 41) for details.
- For details on the screen that appears during counting, refer to "Screen Display during Counting" (p. 32).
- [Detection Area], [Count Interval] and [People Count Notification] can be changed for each schedule, but the settings cannot be reflected in the [Counter Settings] screen (p. 23). Also, even if the settings are changed in the [Counter Settings] screen, the changes will not be reflected in the pre-registered schedules.
- When running a schedule, the run history will be saved as a text file. For details on the saved file, refer to "Contents of Output File" (p. 72).

Editing/Removing Schedules

By clicking the Schedule button [▦], a list of existing schedules will appear. It is possible to edit or remove existing schedules from this screen.

■ Contents for the Schedule List



(1) [Enabled]
Enables/disables the schedule. When a schedule is added, [Enabled] is automatically checked. If unchecked, the schedule will not run. Unchecking a schedule currently running will stop the count.

(2) [Status]
Indicates the schedule status.
[Analyzing]: Counting being executed.
[Waiting]: Cannot start counting as there are sessions with higher priority already running.
No icon: The schedule has not yet reached the count start time or has been disabled.

(3) [Schedule Name]
Displays the schedule name.

(4) [Date & Time]
Displays the date and time to count.

(5) [Camera Name]
Displays the camera on which the count will run.

(6) [Target Video]
Displays whether live or recorded video will be targeted for counting.
For recorded video, date and time set to [Start Date & Time] will be displayed.

(7) [Count Interval / Shift Time]
Displays the count interval. For cameras registered in [Count Options], the shift time set from the group 1 count execution timing is displayed (p. 43).

(8) [Updated]
Displays the date and time of the schedule that was most recently edited.

(9) Registered Schedules
Displays the number of registered schedule events out of the maximum of 50.

(10) [Count Options]
When the number of cameras performing the count at the same time is large and the load on the Analysis Server is large, the timing of performing the count for each camera can be shifted. For details, refer to “Counting with Multiple Cameras in the Same Time Frame” (p. 43).

(11) [Add]
Used to create new schedules.

(12) [Copy and Edit]
If an existing schedule is selected and [Copy and Edit] is clicked, [Schedule] screen will appear with the settings of the selected schedule. By clicking [OK] after editing, a new schedule is set.

Note

- The [Frame Capture Timing] and [Shift Time] settings are not reflected.
- For cameras registered in [Count Options] (p. 45), [Count Interval], [Frame Capture Timing], and [Shift Time] are displayed with the settings reflected from the [Count Options].

(13) [Edit]
Select an existing schedule and click [Edit] to display the [Schedule] screen to edit contents. Double-clicking an existing schedule can also enable to edit it.

Important

- It is not possible to change [Target Video] ([Live Video] or [Recorded Video]).
- If a running schedule that has [Repeat] set to [Daily] is edited, it will be reflected in the next counting session. For a schedule with the [Repeat] set to [Do Not Repeat] and for recorded video, the edited contents will not be reflected to the count.

(14) [Remove]
If an existing schedule is selected and [Remove] is clicked, the selected schedule is removed.

Important

If a running schedule is removed, counting will end.

(15) [Close]
Closes the screen.

Note

The following schedules remain in the list with [Enabled] unchecked when counting ends.

- Schedule with [Repeat] set to [Do not repeat] in live video
- Recorded Video Schedule

■ Prioritizing the Count Order

When trying to run counting sessions on the same date and time and exceeding the number allowed by the license, they will run in the following order starting from the one with the higher priority.

- Priority 1: Counting for live video to run by the set schedule
- Priority 2: Counting for live video to run by clicking the Crowd People Counter button [ ]
- Priority 3: Counting for recorded video

For example, if a recorded video counting session is underway, and a new live video counting session starts, the recorded video counting session will be interrupted. If this occurs, the interrupted recorded video counting session will restart when the live video counting session ends.

If multiple counting sessions of the same type are to run simultaneously, the following prioritization applies.

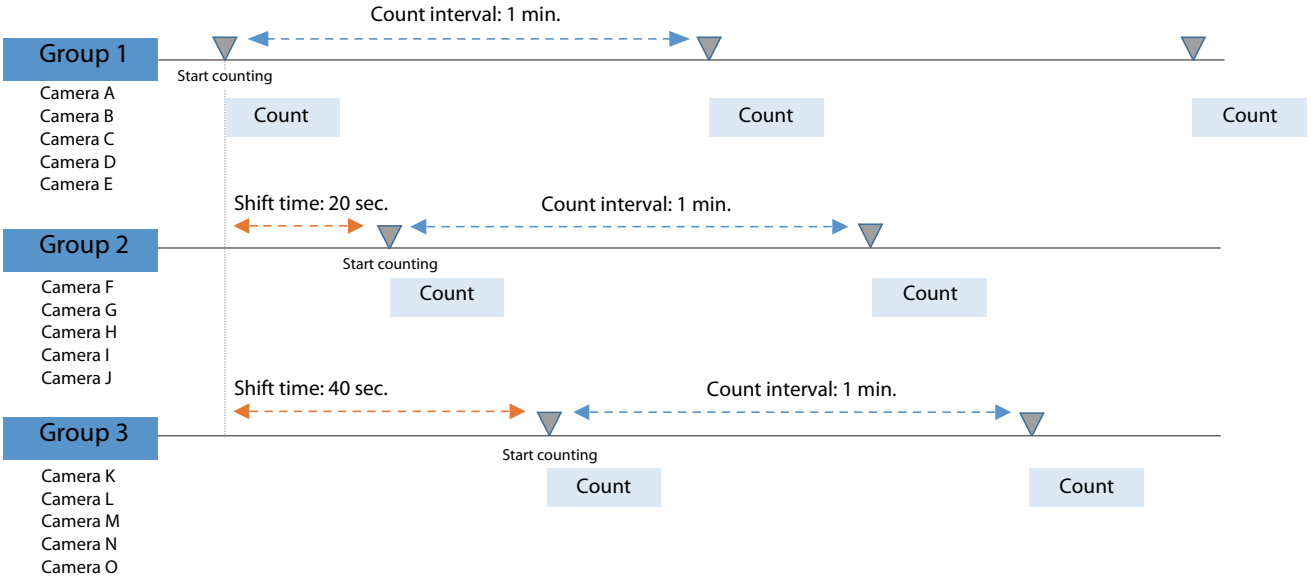
- Counting live video triggered by schedule: Priority to the count schedule set first (older schedule in [Updated])
- Counting live video triggered by clicking Crowd People Counter button [ ]: Priority to the schedule started first
- Counting recorded video: Priority to the schedule set first

Note

- Regardless of the number of licenses, only one count per camera can be executed at a time. When attempted to execute more than one count simultaneously, counts will run according to priority.
- When a counting triggered by the schedule is interrupted, counting will restart after the counting with higher priority is finished. When a counting triggered by the Crowd People Counter button [ ] is interrupted, counting will not restart even after the counting with higher priority is finished.

Counting with Multiple Cameras in the Same Time Frame

Counting with a number of cameras at the same time could increase the load on the Analysis Server, causing to take longer time for counting or become unstable. By using [Count Options], cameras are divided into groups and counting is performed by shifting the timing slightly by group. It becomes possible to count a number of cameras in the same time frame while reducing the load on the Analysis Server.
For example, when using 15 cameras divided into 3 groups of 5 cameras, counting is performed by slightly shifting the timings as shown below. The time for shifting the count timing for each group is called "Shift Time".



Important

[Count Options] can be used for counting of live video that runs on a schedule.

Note

- The number of cameras for which counting can be performed stably and simultaneously depends on the specifications of the Analysis Server. As an indication, if the Analysis Server used for counting has the recommended specifications listed in System Requirements (p. 10), use this function when counting with more than 6 cameras at the same time.
- When counting with the cameras registered by [Count Options], it is also possible to count with unregistered cameras. However, since the timing of counting may fall on the same time as for other cameras, the Analysis Server can be overloaded and may take time to count or become unstable.

■Example of a Setting Procedure

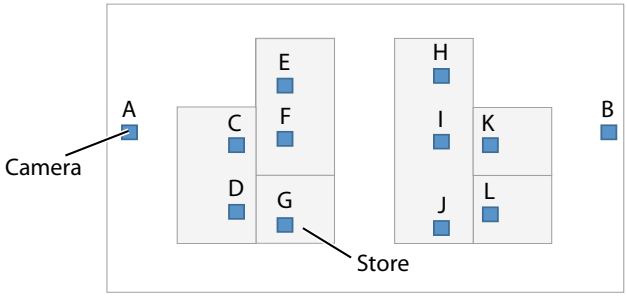
In order to use count options, for example, settings can be made following the procedure below.

Step 1: Deciding which camera to use and the schedule

Decide roughly in advance the number of cameras for counting at the same time and the schedule for counting.

Example:

- Total number of cameras to be used: 12
- Camera A to B: count from 5:00 to 23:00
- Camera C to G: count from 7:00 to 16:00
- Camera H to L: count from 11:00 to 21:00



Step 2: Setting count options (p. 45)

Set the total number of cameras, the number of simultaneous countings (maximum number of cameras able to be registered in one group), and the count interval.
This setting determines the number of groups and the shift time for each group.
The number of groups is calculated by dividing the [Number of Cameras] with the [Number of Simultaneous Operations]. For example, if the number of cameras is 12 and the number of simultaneous operations is set to 5, the number of groups will be 3.
The shift time for each group is calculated by dividing the [Count Interval] with the [Number of Groups]. For example, if [Count Interval] is 1 minute = 60 seconds, and there are 3 groups, the shift time for each group is 20 seconds.

Note

The number of simultaneous operations is usually set to five. Reduce the number if the operation is not stable, such as when the Analysis Server used has low specifications.

When the number of groups is decided, register cameras for each group.
In the example of step 1, if the total number of cameras is 12 and the number of simultaneous operations is set to 5, the number of groups will be 3. Decide which camera to be registered in which group according to the usage.

Example 1: Create groups based on least overlapping execution times

- Group 1: Camera A, C, D, K, L (5 units)
- Group 2: Camera B, E, F, H, I (5 units)
- Group 3: Camera G, J (2 units)

Example 2: Create groups based on the closeness of locations which makes it easier to see which cameras belong to each group.

- Group 1: Camera A, C, D, G (4 units)
- Group 2: Camera E, F, H, I, J (5 units)
- Group 3: Camera B, K, L (3 units)

Step 3: Registering Schedules (p. 37)

Register schedules for each camera.
If the count interval is long, it is recommended to set the [Start Time] of the schedule about 5 minutes earlier than the desired time to start. For details, refer to “Notes on Count Start Time” (p. 49).

Note

The order of the step 1 to 3 can be changed.

■Setting [Count Options]

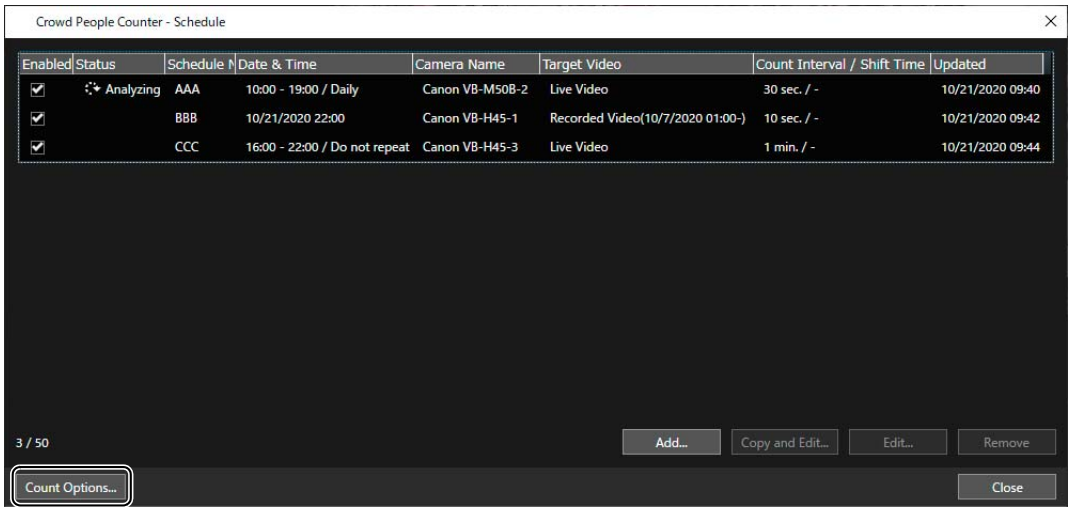
Set the total number of cameras for counting in the same time frame, the number of cameras for counting simultaneously, the count interval, etc. This setting automatically determines the number of groups of cameras and the shift time for each group. When the number of groups is determined, register cameras for each group.

1 From the Client PC, log in to the XProtect Smart Client as the Administrator.

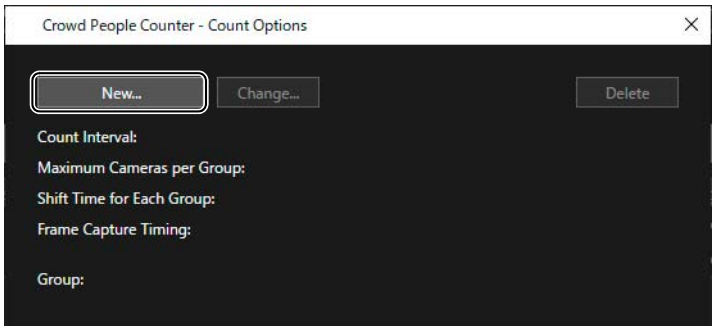
2 Click the schedule button [ ] on the toolbar in the screen of the camera for which the count is to be made.

The schedule list screen appears. For details on the schedule list screen, refer to “Editing/Removing Schedules” (p. 41).

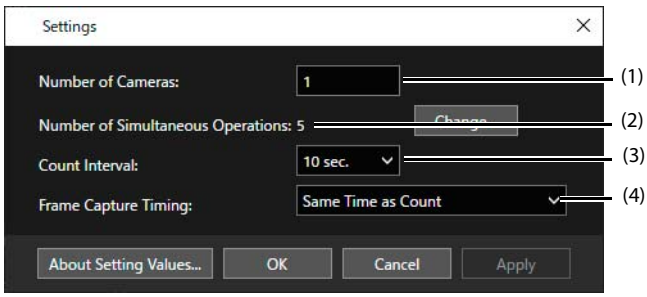
3 Click [Count Options].



4 Click [New] on the [Count Options] screen.



5 Set each item on the [Setting] screen.



(1) [Number of Cameras]
Enter the total number of cameras for counting in the same time frame.

(2) [Number of Simultaneous Operations]
Displays the number of cameras for counting simultaneously. The cameras for the number set here can be registered in one group. Usually, use the initial value of [5], and click [Change] to decrease the number if the operation is not stable.

(3) [Count Interval]
For example, by selecting [1 min.], a count is performed once per minute for each group.
The set count interval applies to all schedules registered to cameras in [Count Options]. The count interval of the set schedule will be overwritten with the value set in [Count Options].

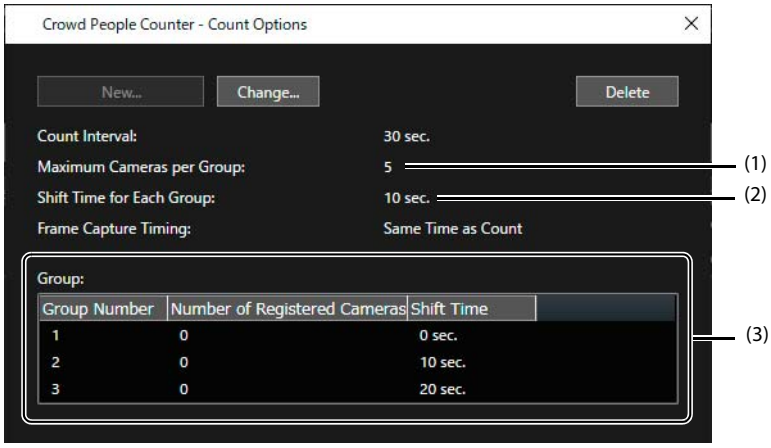
(4) [Frame Capture Timing]
Select the timing for acquisition of the frame.
[Same Time as Count]: Shifts the timing of both frame acquisition and count execution by group.
[Same Time for All Groups]: Acquires frames from all the cameras at the same time and shifts only the timing of the count execution.
For details, refer to "About Frame Capture Timing" (p. 50).

Note

By clicking [About Setting Values], the description of this feature will be displayed.

6 Click [OK].

The shift time of the cameras and the number of groups are automatically calculated and reflected in the [Count Options] screen.



(1) [Maximum Cameras per Group]
The [Number of Simultaneous Operations] value from step 5 is displayed. Indicates the maximum number of cameras that can be registered in one group.

(2) [Shift Time for Each Group]
For each group of cameras, the time for shifting the count timing is displayed.
Calculated by dividing the [Count Interval] set in step 5 with the number of groups. The remainder is rounded down.

(3) [Group]

Displays as a list, the number of groups and their contents.

The number of groups is calculated by dividing the [Number of Cameras] with the [Number of Simultaneous Operations] set in step 5. The remainder is rounded up.

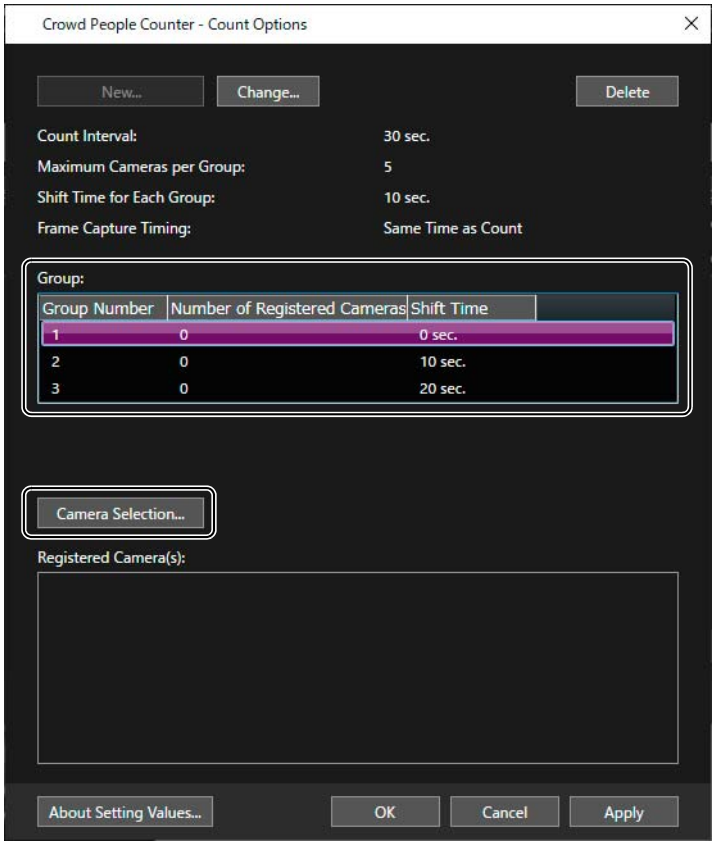
[Shift Time] indicates how many seconds after the count of Group 1 the count of other groups will be executed.

The cameras to be registered in each group are set from step 7.

Note

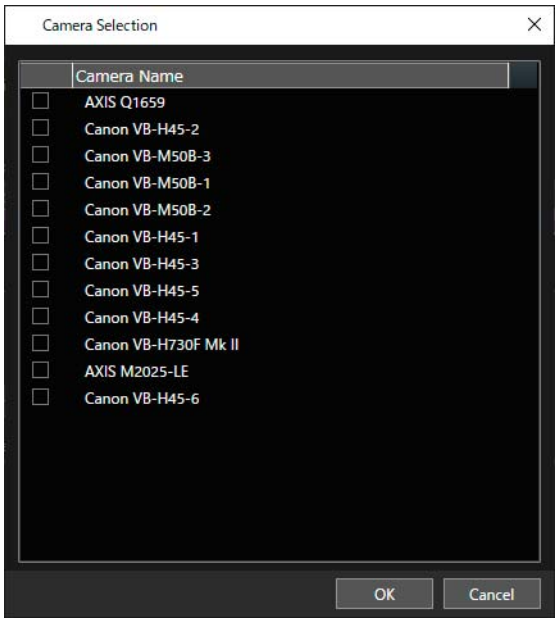
Set the [Count Interval] so that [Shift Time for Each Group] does not become less than its 1 second minimum.

7 In the [Group] list, click the line where [Group Number] is [1] (Group 1), then click [Camera Selection].



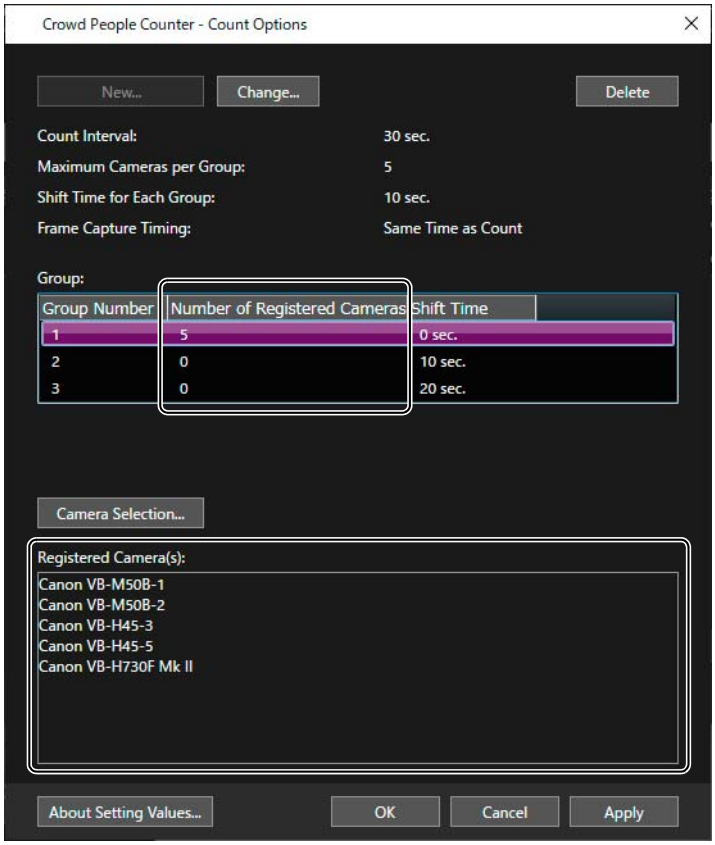
8 On the [Camera Selection] screen, select the cameras to be registered in Group 1.

Cameras can be selected up to the number of [Maximum Cameras per Group].



9 Click [OK].

The registered contents are reflected to [Number of Registered Cameras] in the list of the [Group] and [Registered Camera(s)].



10 Register the cameras for other groups in the same way as in step 7 to 9.

Note

Cameras registered in other groups cannot be selected.

11 Click [OK] when the camera has been registered to all groups.

The settings will be reflected.

Important

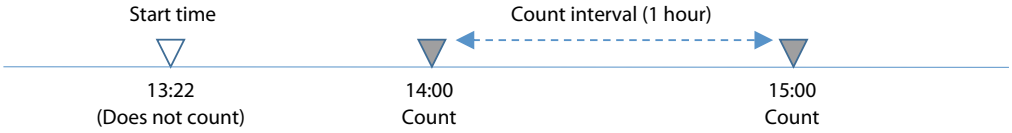
When clicking [OK] on the [Count Options] screen, a message will be displayed if any of the registered cameras are being counted by the schedule. By clicking [OK], the running count stops once, and restarts with the [Count Options] settings applied. By clicking [Cancel], the camera continues with the running count. The [Count Options] settings are applied, when the count is finished and the next schedule starts.

Note

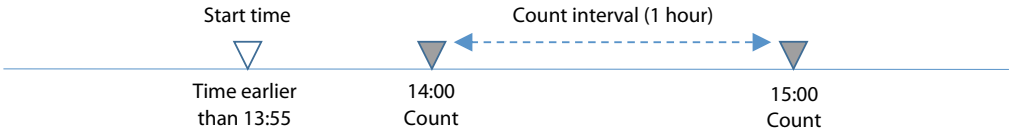
- To change the settings, click [Change] on the [Count Options] screen.
- If the number of groups is changed by changing the settings, the camera information registered in each group is reset.
- Click [Delete] when [Count Options] is not used.

■Notes on Count Start Time

For cameras registered in the count option, counting will not be performed immediately after the start of the schedule, but will be counted at the next reference time (p. 24). This is to avoid starting a count for the next group during a count for the first group.
Therefore, if a longer count interval is set, it may take time from the schedule's start time to the first count. For example, if the schedule's start time is set at 13:22 for the [Count Interval] set to [1 hour], the first time the count will begin for Group 1 cameras will be at 14:00.



When the schedule time is set for exactly 14:00, because the count is not executed right after the start, the first count for Group 1 will be executed at 15:00. In order to execute the count at the 14:00 time, the start time of the schedule has to be set at a time around 5 minutes before, 13:55 or earlier.



As in the example above, the start time of the schedule should be set at a time around 5 minutes before the reference time when the count should be executed.

■About Frame Capture Timing

In the [Count Options], timing to acquire frames can be selected from the followings.

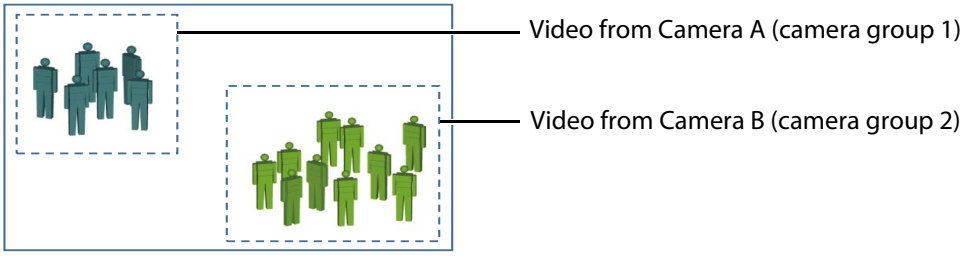
[Same Time as Count]

Shifts the timing of both frame acquisition and count execution by group, and executes both frame acquisition and count at the same time.
It can be used when there is no problem even if there is a difference in the time of acquiring the frame to be counted for each camera, such as cameras installed in different rooms. Since the count is executed at the same time as the frame acquisition, the count result in almost real time can be displayed on the live video.

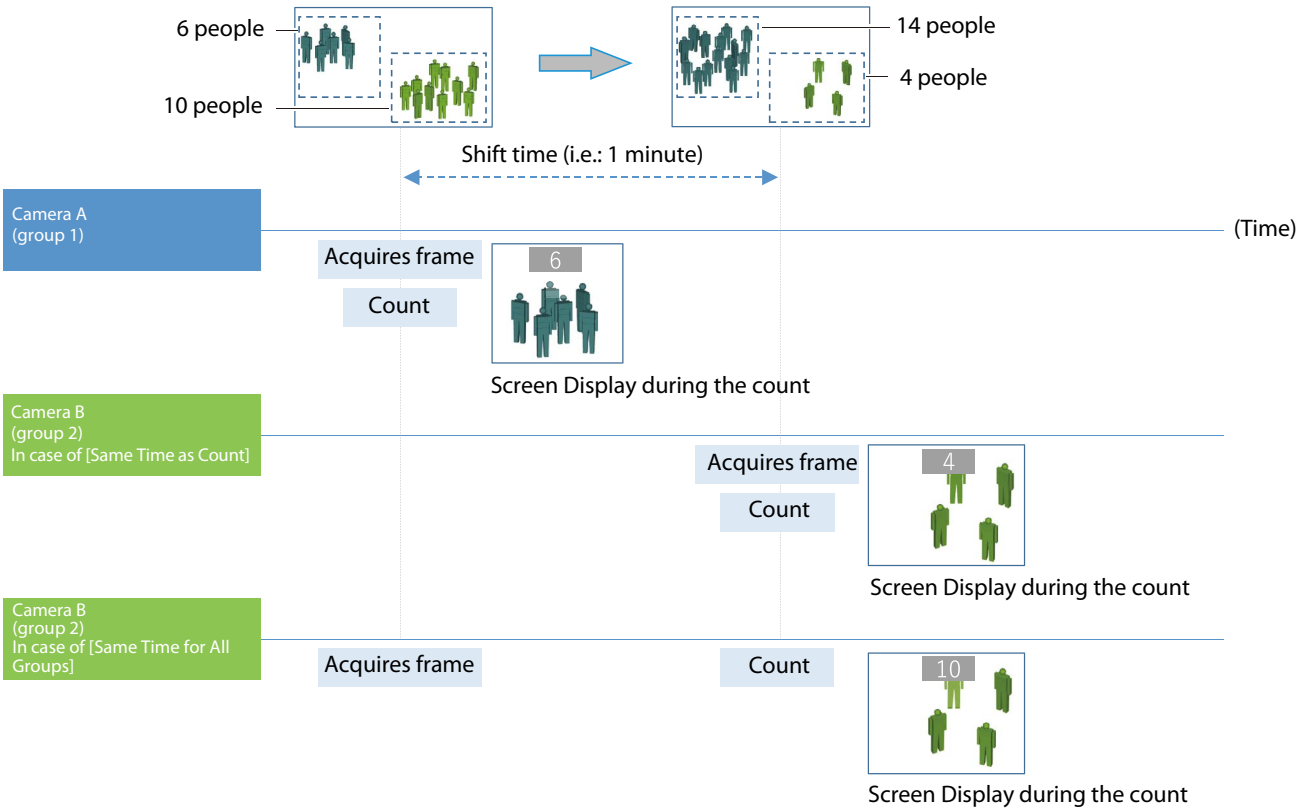
[Same Time for All Groups]

Acquires frames from all the cameras at the same time and shifts only the timing of the count execution by group. For example, it is useful to install multiple cameras in the same room, add up the count results of each camera in the output CSV file (p. 73), and count the number of people in the whole room.

For example, install "Camera A belonging to camera group 1" and "Camera B belonging to camera group 2" in one room as shown below.



The timing of frame acquisition and count execution are respectively as follows when [Same Time as Count] and [Same Time for All Groups] are selected.

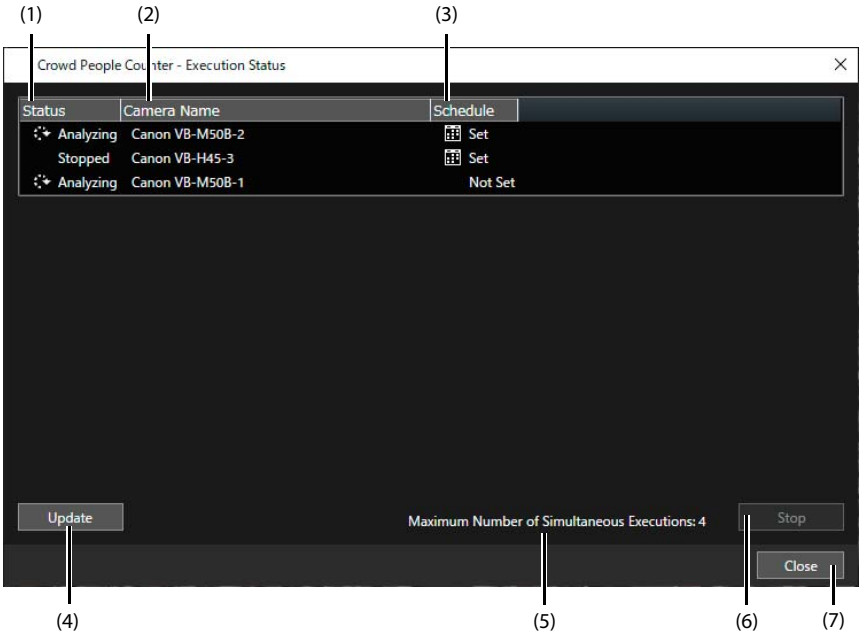


Note

When [Same Time for All Groups] is selected, there could be a delay in displaying the count result on the live video display screen depending on the camera group.

Confirming the Camera's Count Status

By clicking the Execution Status button [], a list of cameras under counting and cameras with schedules set is displayed. The counting status of each camera can be checked on this screen.



(1) [Status]
Displays counting status.
[Analyzing]: Counting being executed
[Stopped]: When the schedule is set but the start date and time is yet to come.

(2) [Camera Name]
Displays cameras under counting or those with schedules set.

(3) [Schedule]
Displays whether or not a schedule is set.
[Set]: Schedules are set.
[Not Set]: No schedule is set.

(4) [Update]
Updates the contents of view.

Note

When opening the screen, the latest status at the moment when the Execution Status button [] was clicked will be displayed. No update will be made automatically after this. Click [Update] to update the information.

(5) [Maximum Number of Simultaneous Executions]
Displays the number of licenses registered. The number of licenses possessed is the maximum number of simultaneous counting.

Note

Regardless of the number of licenses, only one count per camera can be executed at a time. When attempted to execute more than one count simultaneously, the count is executed according to the priority.

(6) [Stop]
By selecting and clicking the item under counting in the list, counting can be stopped.

(7) [Close]
Closes the screen.

Graph Display

Enables Graph Display of the result of the current ongoing count and the result of the executed count.

Important

- A graph can only be displayed on the screen. It cannot be printed or saved.
- A graph can show the number of people counted. The density (p. 33) cannot be displayed.

Displaying Graph during Live Video Count

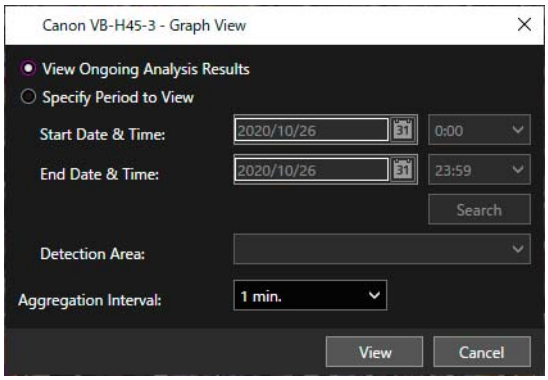
During counting in a live video triggered by the Crowd People Counter button [ ], the count result is displayed as a graph.

Note

When counting in a live video triggered by the schedule, graph cannot be displayed during counting.

1 Click the graph view button [ ] on the toolbar in the screen of the camera for which the count result is to be displayed.
[Graph View] screen appears.

2 Select [View Ongoing Analysis Results].



3 Select [Aggregation Interval].

Set the period for the people counting aggregation interval.
00 h 00 min. is the reference time. Analysis results are aggregated per period defined by the interval set starting from the reference time. For example, if the analysis starts at 10 h 37 min. with [Aggregation Interval] set at [15 min.], the first aggregation will be made with the analysis result from 10 h 37 min. till 10 h 45 min., and then from 10 h 45 min. till 11 h 00 min., from 11 h 00 min. till 11 h 15 min. and onwards.
On the graph, average count result within the aggregation interval is displayed.

4 Click [View].

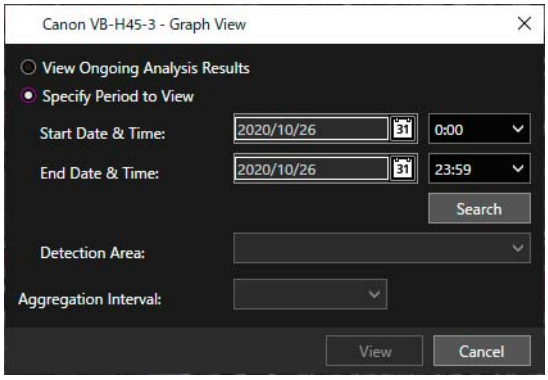
Displays a graph.

Displaying Graph for Count Results

By specifying the capture date and time, the count result is displayed as a graph.

1 Click the graph view button [ ] on the toolbar in the screen of the camera for which the count result is to be displayed.
[Graph View] screen appears.

2 Select [Specify Period to View].



3 Specify [Start Date & Time] and [End Date & Time].

Specify the capture date and time for the video to be displayed as a graph with [Start Date & Time] and [End Date & Time].
Click the calendar[ ] to specify the date.
Enter the time in <HH:mm> format using 24-hour time.

4 Click [Search].

The detection area name for the count performed within the specified date and time appears in [Detection Area].

Note

Regarding the detection area name, the name set in the step 5 of "Setting Detection Areas and Non-Detection Areas" (p. 25) is displayed.

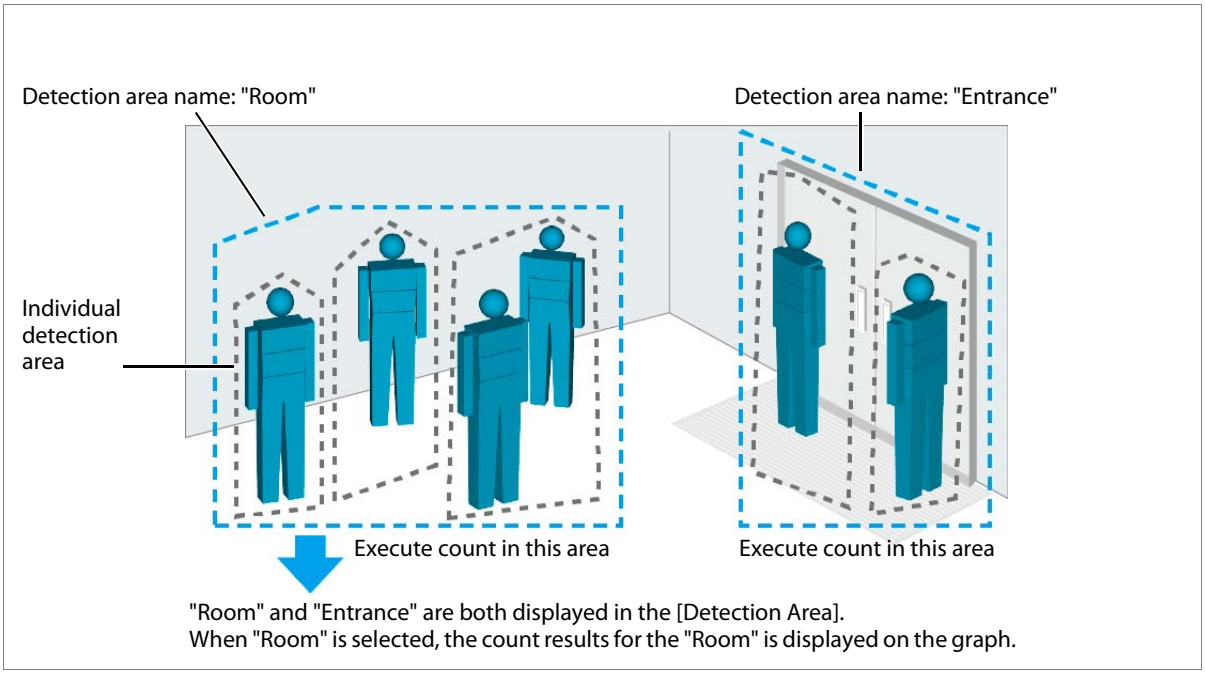
By clicking [Search], the following time is displayed in [Aggregation Interval] according to the period between [Start Date & Time] and [End Date & Time] which are set.

- When the time from [Start Date & Time] to [End Date & Time] exceeds 60 hours: [1 day]
- When the time from [Start Date & Time] to [End Date & Time] is longer than one hour but 60 hours or less: [1 hour]
- When the time from [Start Date & Time] to [End Date & Time] is longer than one minute but 1 hour or less: [1 min.]
- When the time from [Start Date & Time] to [End Date & Time] is 1 minute or less: [1 sec.]

5 Select [Detection Area] to display a graph.

Note

- When the count is performed for different detection areas set for the same recorded video ("Room" and "Entrance" are shown in the example figure below), it is necessary to specify which area the result should be graphed.



- If no count results data exists within the specified date and time, [No Data] will appear in [Detection Area]. If this occurs, set the date and time again.

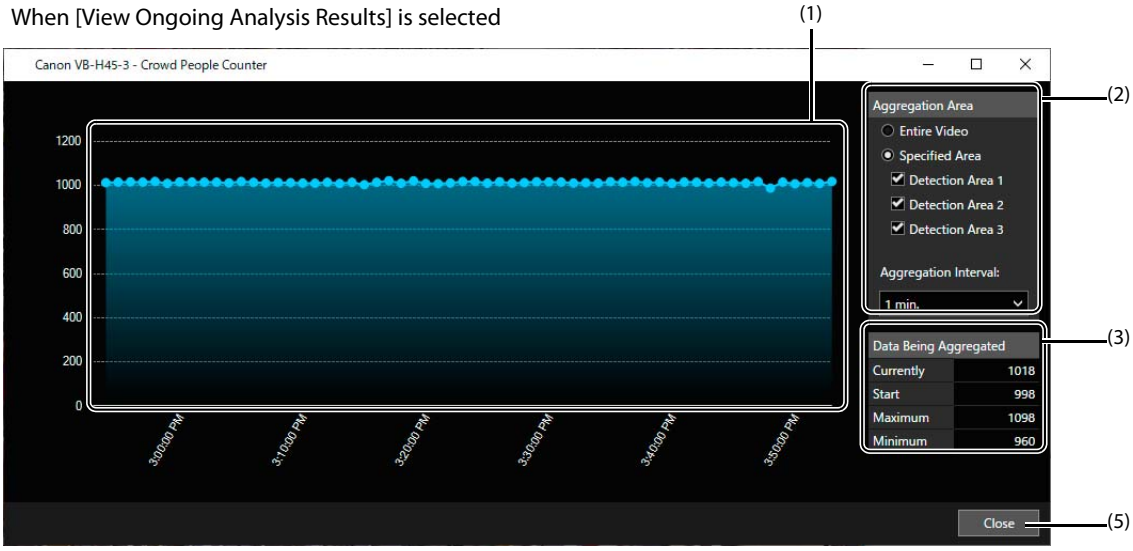
6 Click [View].

A graph will appear.

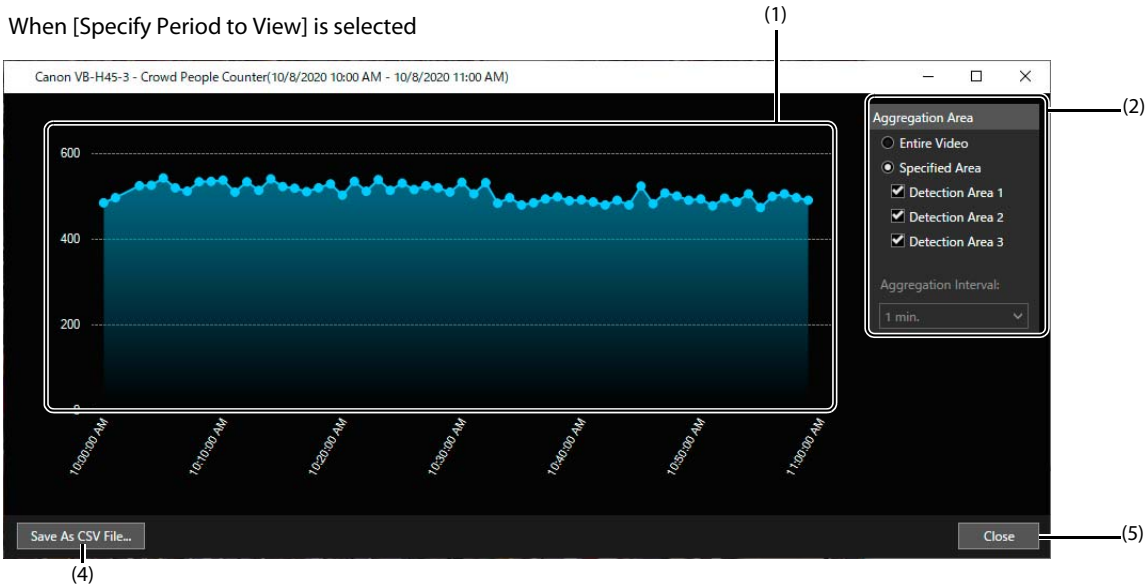
Reading the Graph

The horizontal axis shows the date and time, and the vertical axis shows the number of people for the following graphs.

When [View Ongoing Analysis Results] is selected



When [Specify Period to View] is selected



(1) Aggregated Results
The aggregated results are displayed in a polygonal line graph.
It indicates the average count result within the aggregation interval.

(2) [Aggregation Area]
Displays the detection area to aggregate.
It is possible to change the detection area and aggregation interval to be graphed.

Note

- The name of the set detection area is displayed. The detection area(s) being aggregated is displayed with a [ ] on the left side.
- [Aggregation Interval] can be changed only when [View Ongoing Analysis Results] is selected. For details, refer to “Displaying Graph during Live Video Count” (p. 53).

(3) [Data Being Aggregated]
Displays the count results within the aggregation interval.
[Currently]: Latest count result
[Start]: First count result in the aggregation range
[Maximum]/[Minimum]: Maximum/Minimum count result between the first and the latest count in the aggregation range

Note

Displayed only when [View Ongoing Analysis Results] is selected.

(4) [Save As CSV File]
The [Download Analysis Results] screen appears, the count results for the period being displayed as a graph can be outputted to a CSV file. For details on setting [Download Analysis Results], refer to "Downloading Analysis Results in CSV File or JPEG File" (p. 59).

Note

[Save As CSV File] is displayed only when [Specify Period to View] is selected.

(5) [Close]
Closes the graph.

Displaying the Image or Video from the Graph

By specifying a timespan from the graph, the image or video for which the count was made can be displayed.

Important

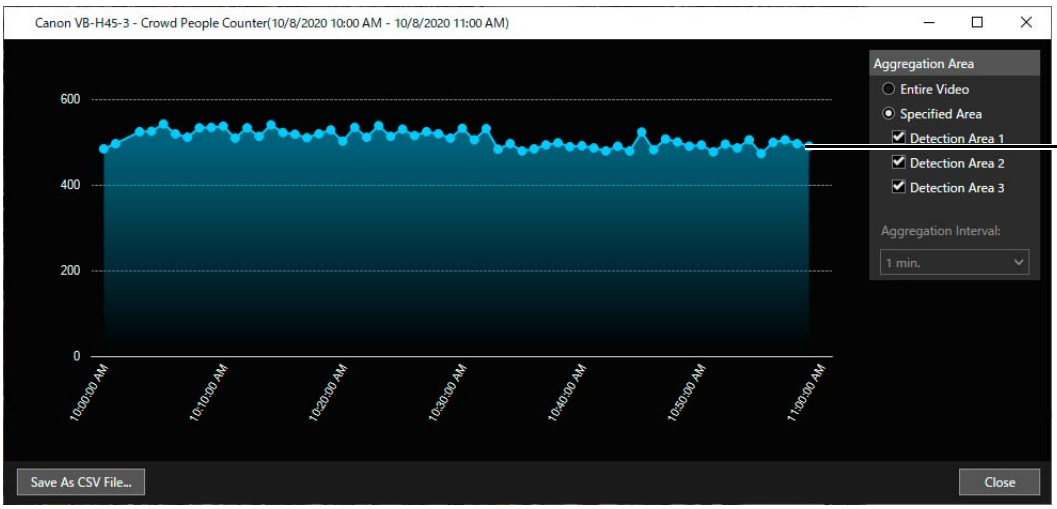
- This function can be used only when [Specify Period to View] is selected.
- To display an image from a graph, the video for which the count being executed must be recorded.

Note

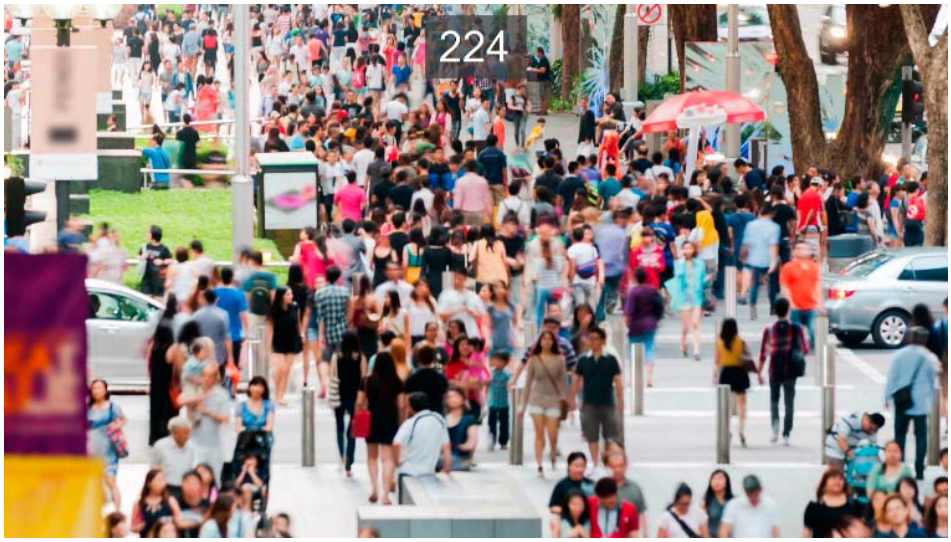
If the Moving Object Mask for Milestone XProtect is installed, this function is available only when logged in to XProtect Smart Client as an Administrator (p. 15).

1 Display a graph (p. 53).

2 Click on the line graph.



The image will appear in the XProtect Smart Client view.
The first count result within the clicked display interval will be displayed.



3 To end image display, click [Close] on the graph.

Downloading Analysis Results in CSV File or JPEG File

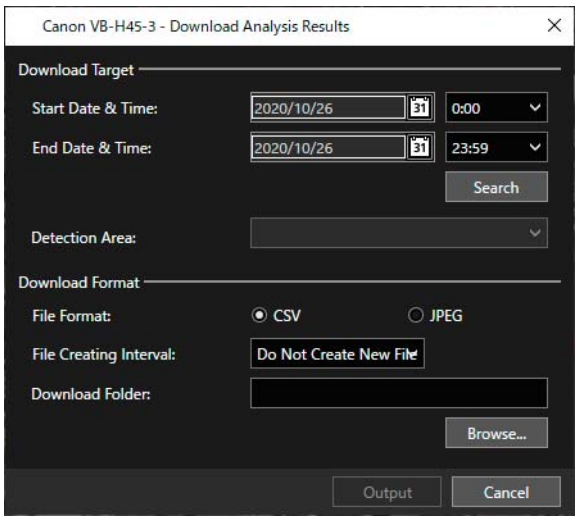
Downloads the count result saved in the Analysis Server to the Client PC as a CSV File. Also, downloads the JPEG File outputted during the count to the Client PC.

Important

To download a JPEG file, settings must be made before counting so that the JPEG file will be outputted to the Analysis Server. For details, refer to "Output Settings to Analysis Server" (p. 19).

1 Click the Download Analysis Results button [ ] on the toolbar in the screen of the camera of which the count results needs to be used.
Displays [Download Analysis Results] window.

2 Set [Start Date & Time], [End Date & Time] and [Detection Area].



For details on each item, refer to steps 3 to 5 in "Displaying Graph for Count Results" (p. 54).

3 Select [File Format].

Select the file format of the file to be downloaded between [CSV] and [JPEG].

4 When [CSV] is selected, select [File Creating Interval].

Allows for creating the CSV file to be downloaded for a given interval. This can be used to limit the size of the CSV file if needed. For example, if the interval is set to [1 min.] and count results are downloaded for 10 minutes, ten CSV files with count results of each 1 minute will be downloaded.
If [Do Not Create New File] is set, all of the count results will be downloaded to a single CSV file.

Note

It is also possible to enter the download destination directly.

5 Click [Browse] in [Download Folder] to select a download folder for the file on the displayed screen.

6 Click [Output].

Downloads the file to the selected download folder.

Note

- For details on CSV file contents and folder/file names, refer to “Contents of Output File” (p. 72).
- When the [Download Analysis Results] screen is displayed from the graph (p. 56), the date and time and the detection area set in the graph view will automatically be set.
- If the Moving Object Mask for Milestone XProtect is installed, the downloading of JPEG file is available only when logged in to XProtect Smart Client as an Administrator (p. 15).

Notifying the Milestone XProtect Server

It is possible to notify the Milestone XProtect Server when the counted number of people exceeds the set threshold or when it falls below the threshold. The XProtect Smart Client confirms the contents of the notification.

There are two methods in which to send this notification.

- Notifying for one camera (p. 63)

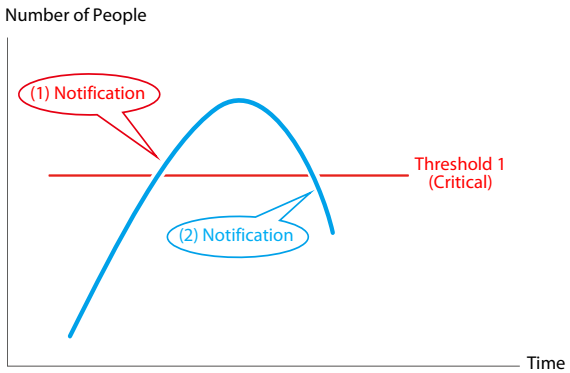
Notification according to the number of people detected by one camera. Set by the [Counter Settings] screen (p. 23) or by the [Schedule] screen (p. 37).

- Notifying for multiple cameras (p. 65)

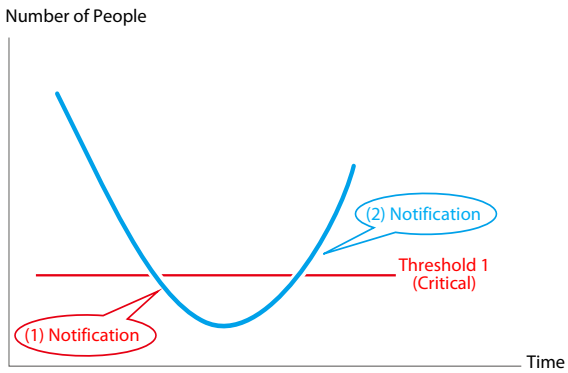
Notification according to the total number of people detected by multiple cameras. Set by the [Multiple Camera Notification] screen.

It is possible to set up to two thresholds. Notification will be sent at the following timing set.

- When one threshold is set

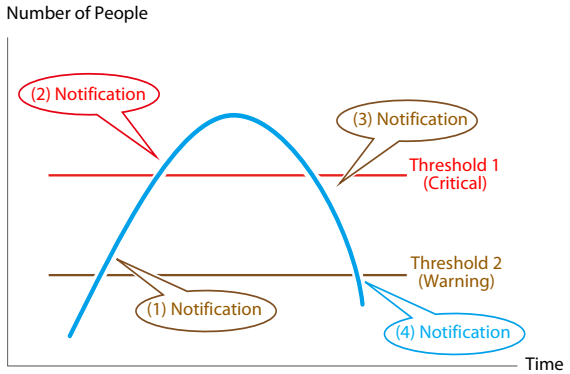


Notifying on threshold and above
(1) When the count reaches Threshold 1 or above.
(2) When the count returns to normal status.

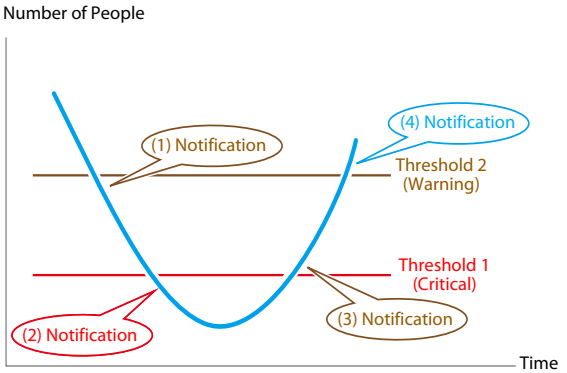


Notifying on threshold and below
(1) When the count goes to Threshold 1 or below.
(2) When the count returns to normal status.

- When two thresholds are set



Notifying on threshold and above
(1) When the count reaches Threshold 2 or above.
(2) When the count reaches Threshold 1 or above.
(3) When the count goes below Threshold 1.
(4) When the count returns to normal status.



Notifying on threshold and below
(1) When the count goes to Threshold 2 or below.
(2) When the count goes to Threshold 1 or below.
(3) When the count goes above Threshold 1.
(4) When the count returns to normal status.

Important

In order to notify the Milestone XProtect Server of the number of people is either above or below the threshold, it is necessary to set the alarm in the XProtect Smart Client beforehand. For details, refer to the “Setting the XProtect Management Client” (p. 62).

Setting the XProtect Management Client

Set in order to notify the Milestone XProtect Server.
Use the XProtect Management Client for the settings.

1 Enable the analytics event function in the XProtect Management Client.

Note

Set the port to be used to 9090. It is also necessary to add the information of the port which the analytics event function will use for the Windows firewall in the Milestone XProtect Management Server. For details, refer to the Milestone XProtect manual.

2 Register analytics events.

The following 8 types of analytics events can be registered. Register the required event according to the purpose.
Set the event names as the following:

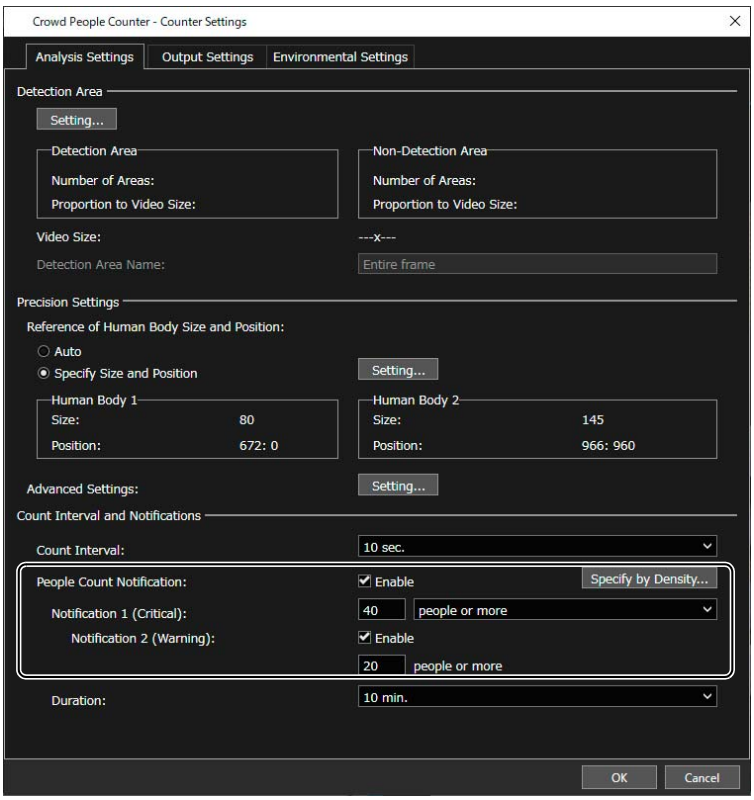
Use	Status		Analytics Event Name
	For notification on threshold and above	For notification on threshold and below	
When notifying the result from one camera	Count reached Threshold 2 or above.	Count went to Threshold 2 or below.	CrowdPCWarningEvent
	Count reached Threshold 1 or above.	Count went to Threshold 1 or below.	CrowdPCCriticalEvent
	Count went below Threshold 1.	Count went above Threshold 1.	CrowdPCWarning2Event
	Returned to normal status.	Returned to normal status.	CrowdPCNormalEvent
When notifying the results from multiple cameras	Count reached Threshold 2 or above.	Count went to Threshold 2 or below.	CrowdPCWarningEvent_CameraGroup
	Count reached Threshold 1 or above.	Count went to Threshold 1 or below.	CrowdPCCriticalEvent_CameraGroup
	Count went below Threshold 1.	Count went above Threshold 1.	CrowdPCWarning2Event_CameraGroup
	Returned to normal status.	Returned to normal status.	CrowdPCNormalEvent_CameraGroup

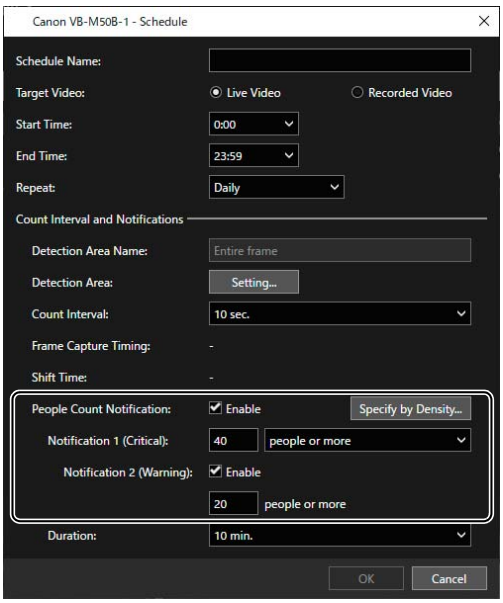
3 For each of the analytics events registered in step 1, each alarm needs to be defined.

Define alarms individually for each analytics event.

Notifying for One Camera

The Milestone XProtect Server is notified when the number of people detected by one camera exceeds the set threshold or falls below the threshold for a certain period of time.
Settings are made possible in the [Counter Settings] screen (p. 23) or the [Schedule] screen (p. 37).





1 Check [Enable] in [People Count Notification].

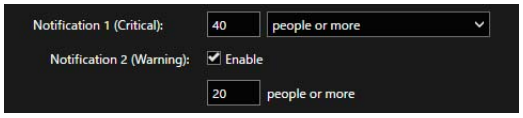
2 Enter threshold number of people for [Notification 1 (Critical)].

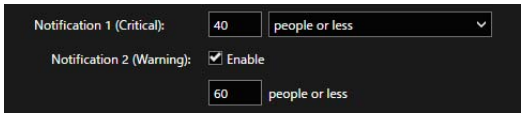
3 Select [people or more] or [people or less].

4 If necessary, check [Enable] in [Notification 2 (Warning)] and enter the number of people.
Under this setting, two thresholds can be set for notification. For example, it is possible to receive the first notification when setting for 30 people or above, then receiving another notification when 50 people or above is set.

Note

- When selecting [people or more], enter the lower number in the [Notification 2 (Warning)]. When selecting [people or less], enter the larger number in the [Notification 2 (Warning)].





- By clicking [Specify by Density], it is possible to specify the number of people per unit area as a threshold. For details, refer to “Using Density as Threshold” (p. 64).

5 Select [Duration].

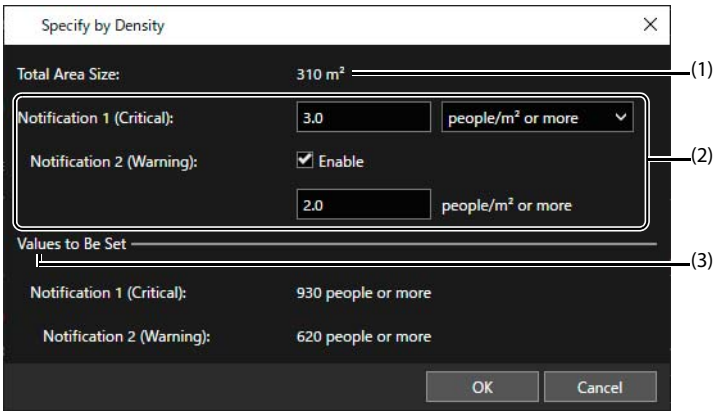
Set the desired notification duration of the number of people above or below threshold. For example, when setting the [Notification 1 (Critical)] for 50 persons and above, and [Duration] for [10 min.], the notification will be sent when 50 persons or above are detected for a duration of 10 minutes or more.

■Using Density as Threshold

By clicking [Specify by Density] on the [Counter Settings] screen (p. 23) or [Schedule] screen (p. 37), thresholds can be set using density (number of people per unit area).

Important

[Specify by Density] is available when the area size settings is enabled in the detection area settings. For details, refer to “Entering the Area Size Information” (p. 34).



(1) [Total Area Size]
Displays the total area size of all the detection areas. If the detection area is not set, area size of the entire screen is displayed. The area size uses the value set in “Entering the Area Size Information” (p. 34).

(2) [Notification 1 (Critical)], [Notification 2 (Warning)]
Enter the number of people per unit area, up to the first decimal place, in the [Notification 1 (Critical)].
Depending on the settings on the [Environmental Settings] tab (p. 33), "people/m^2" or “people/ft^2” is displayed as the unit.
If necessary, in [Notification 2 (Warning)], check [Enable] and enter a number.

(3) [Values to Be Set]
The total number of people of threshold for the entire screen is automatically calculated and displayed from the entered threshold and the [Total Area Size] value. By clicking [OK] to close the screen, the number shown will be set as the number of people to notify.

Notifying for Multiple Cameras

The Milestone XProtect Server is notified when the total number of people detected by multiple cameras exceeds the threshold or falls below the threshold for a certain period of time.

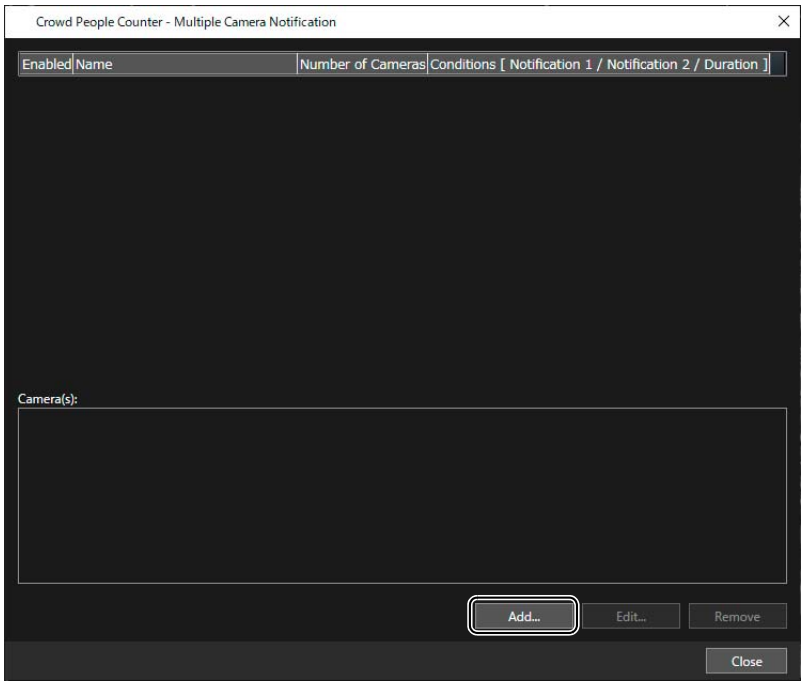
Note

- The notification of multiple cameras is possible during the count from live video.
- Refer to the "Total Number of People Detected from Multiple Cameras" (p. 68) for calculating the number of people.
- All cameras needs to be set previously in the Counter Settings (p. 23).

1 Click Multiple Camera Notification [ ].

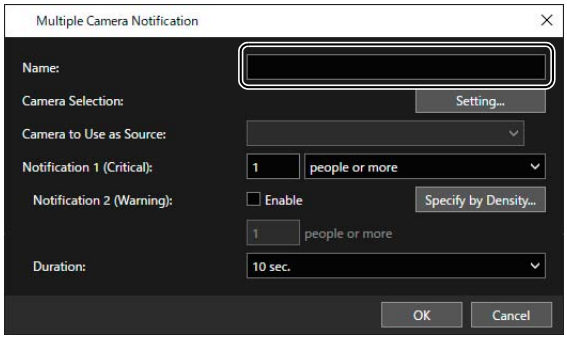
[Multiple Camera Notification] list screen will be displayed.

2 Click [Add].

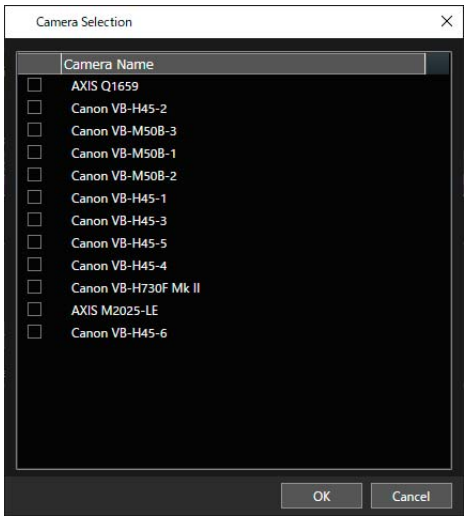


[Multiple Camera Notification] window is displayed.

3 Enter a desired name in [Name].



4 Click [Setting] in [Camera Selection] and check target camera on the [Camera Selection] screen.



List of cameras that are registered to Milestone XProtect are shown.
It is possible to select from 2 to 50 cameras.

5 Click [OK].

6 Select [Camera to Use as Source].

From the selected camera, choose a camera name to be displayed in the XProtect Smart Client alarm manager screen. Refer to “Viewing Notification” (p. 70) for details on how to view the alarm manager screen.

7 Set the number of notifications and duration.

Set by following the steps 2 to 5 in “Notifying for One Camera” (p. 63).

Note

If specifing the threshold by density, enter the [Total Area Size] manually.

8 Click [OK].

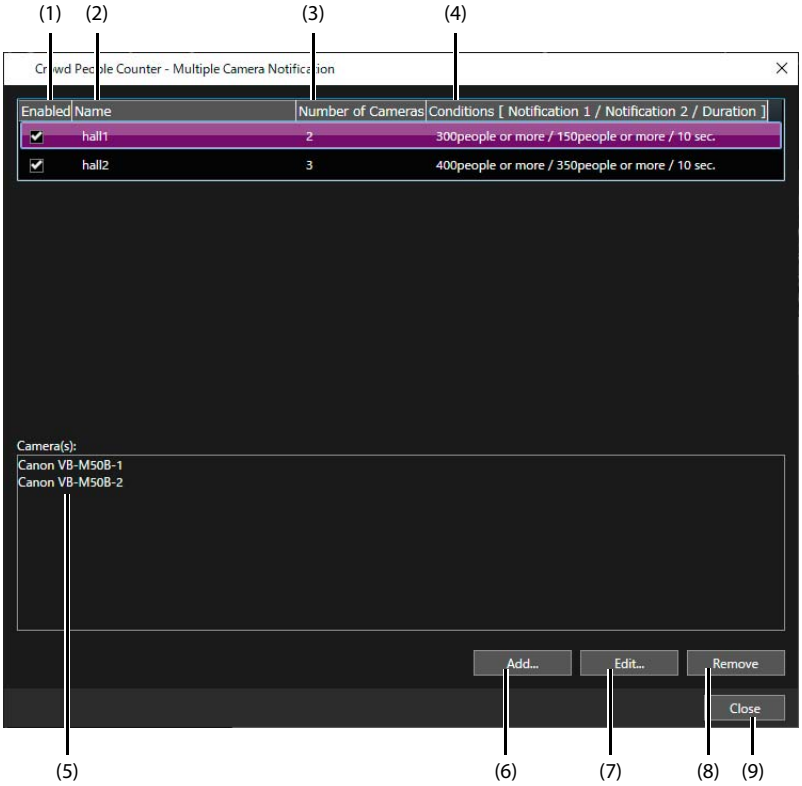
Settings will be registered and displayed in the list.

Note

For the setting of multiple camera notification, a maximum of eight can be registered.

■ [Multiple Camera Notification] list screen

[Multiple Camera Notification] list screen displays the registered multiple camera notifications.



(1) [Enabled]
Switches the setting from Enable/Disable. Uncheck the box when settings are not used.

(2) [Name]
Displays the set name.

(3) [Number of Cameras]
Displays the number of the targeted cameras.

(4) [Conditions [Notification 1/Notification 2/Duration]]
Displays the set threshold and duration.

(5) [Camera]
When selecting a pre-registered notification setting, the camera selected by that setting is displayed.

(6) [Add]
Creates a new multiple camera notification setting.

(7) [Edit]
By selecting a pre-registered notification setting and clicking [Edit], the [Multiple Camera Notification] screen is displayed and editing can be done.

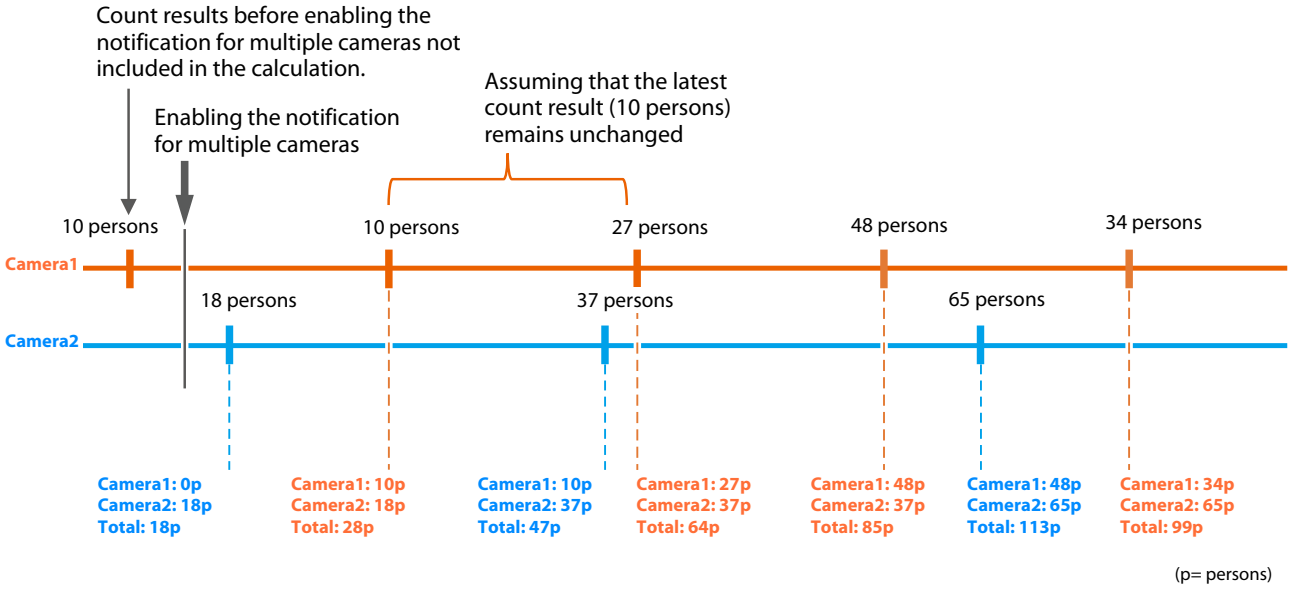
(8) [Remove]
By selecting a pre-registered notification setting and clicking [Remove], the notification will be deleted.

(9) [Close]
Closes the screen.

■ Total Number of People Detected from Multiple Cameras

The total amount of people detected by multiple cameras are calculated by the following:

- Uses the count result after the multiple camera notification becomes enabled. The count result before the notification became enabled are not included in the calculation.
- When the count occurred with any camera, the count results of each camera at that time are added.
- If it detects the number of people who have counted, it will consider that number of people until the timing of the next count. For example, if at a certain point the count result was at 10 people, it will consider that 10 people still there until the next count.

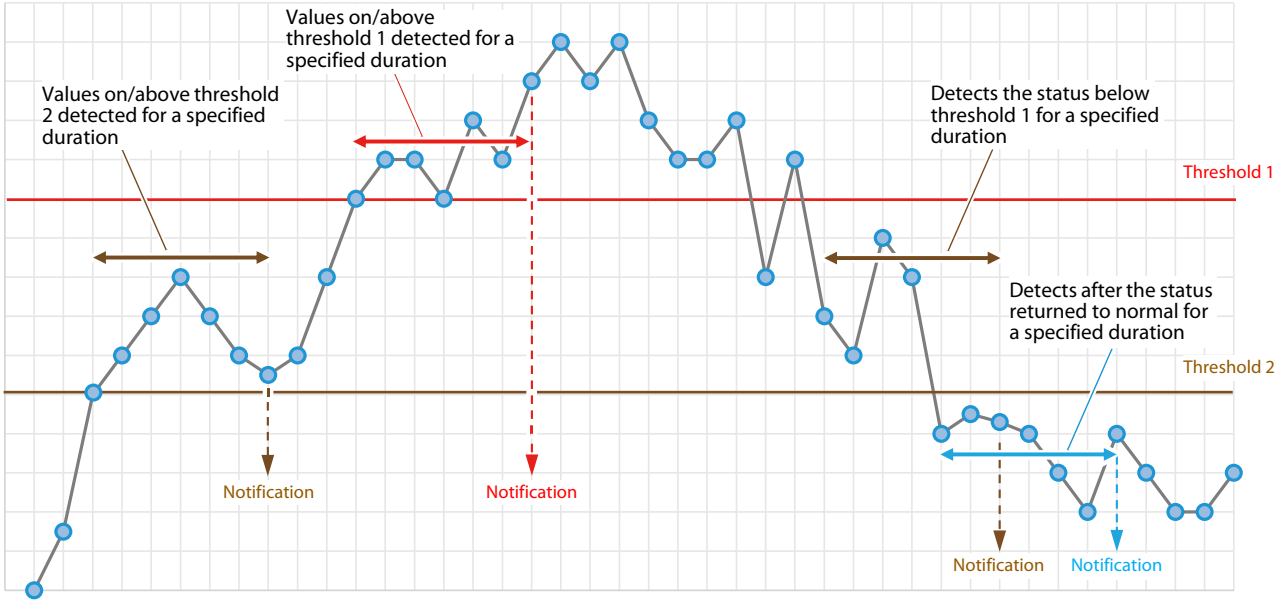


Important

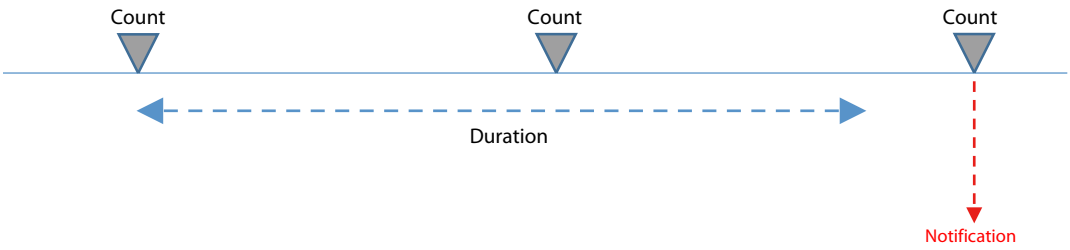
- When setting the notification for [people or more], it will notify when more than one camera is counting, including the source camera (camera that was set in the step 6 [Camera to Use as Source] of the “Notifying for Multiple Cameras”). When setting the notification for [people or less], it will notify when all the target cameras are performing the count.
- In the case where the count takes longer than 70 minutes, the previous count's number of people detected becomes invalid.

Notification Timing

Notifies once when the number of persons detected reaches the threshold and above, or below, for the specified duration or more. Then, it notifies once again when it detects that the number of people has returned to normal for the specified duration or more. Notifies each time the status changes.
If there are two thresholds, it notifies for each threshold as mentioned above.
The following figure shows an example of when two thresholds are set with the setting for [people or more].



Notification is done at the count timing.
If the duration is shorter than the count interval, or if the duration elapses and the count execution timing deviates, it will notify at first count after the duration elapses.



Note

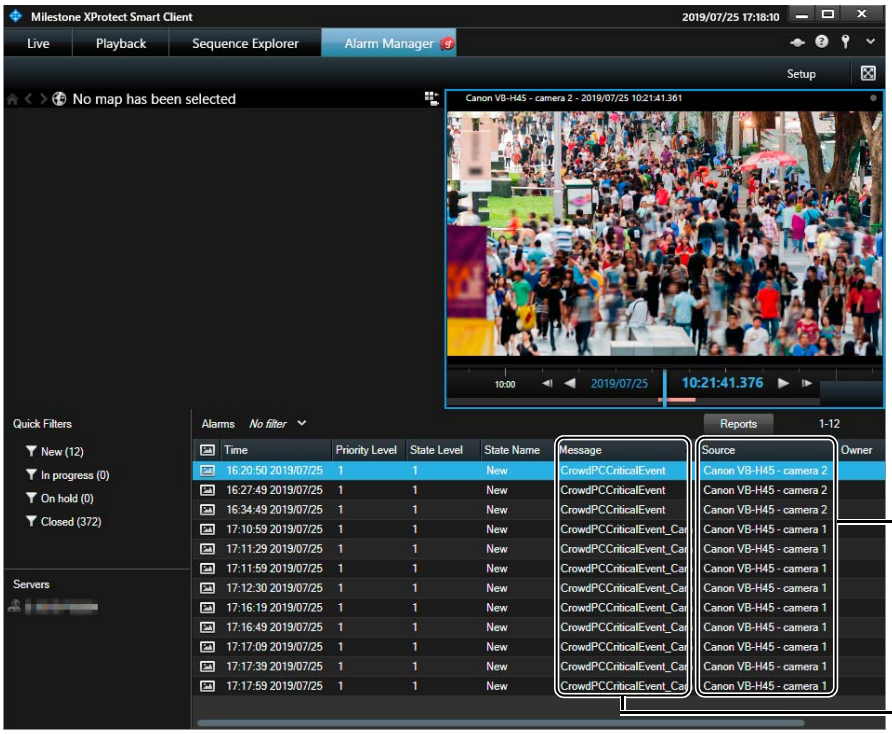
If [people or more] is set and two thresholds are set, when the count immediately goes from a normal status to Threshold 1 or above (before the duration elapses in the state of Threshold 2 and above), it will not be notified of the “Count reached Threshold 2 or above”. Also, when the status goes from Threshold 1 and above to immediately back to normal status (before the duration elapses in the state of the count below Threshold 1), notification will not be sent of “Count went below Threshold 1”. Same goes for when the [people or less] setting.

Viewing Notification

Contents of the notification can be confirmed by the “Alarm Manager” tab in XProtect Smart Client.

Note

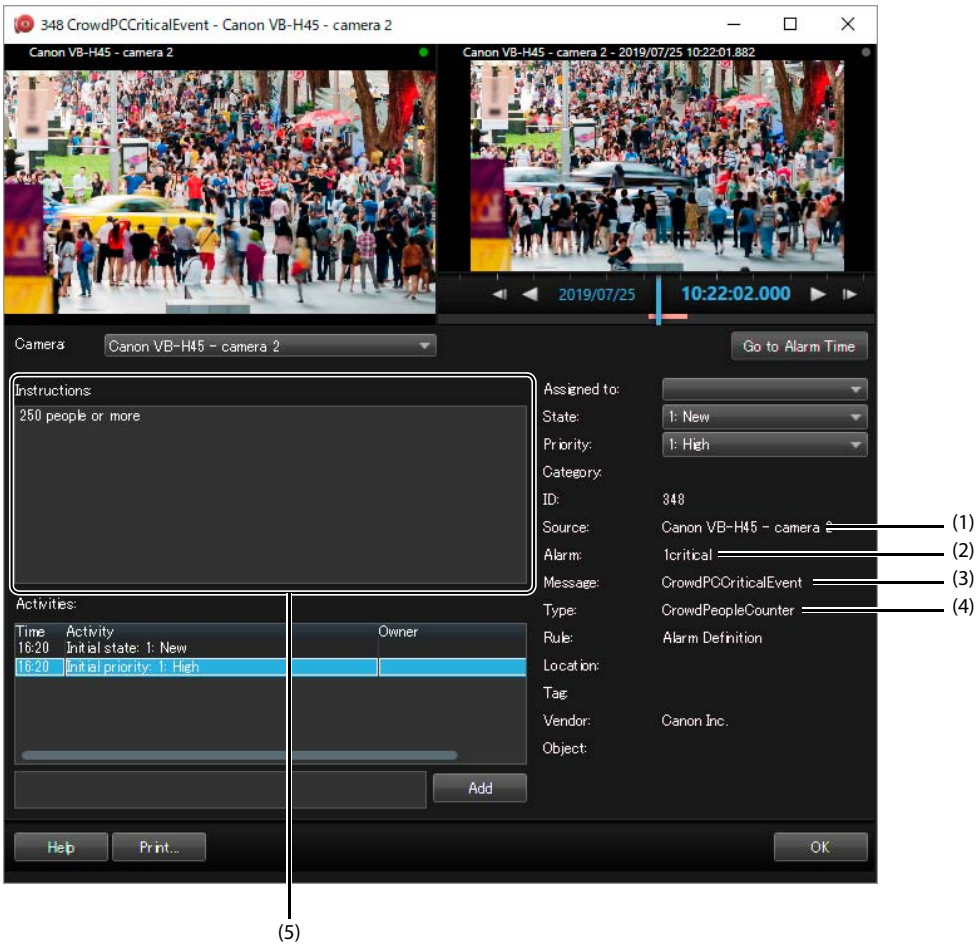
It is possible to change the view position and view contents in the “Alarm Manager”. The explanation is done using a default screen as an example.



(1) Message
The analytics event name set in the “Setting the XProtect Management Client” (p. 62) is displayed.

(2) Source
The camera name which alarm occurred from is displayed. In the case the multiple camera notification is set, the camera name set for [Camera to Use as Source] in step 6 (p. 66) of “Notifying for Multiple Cameras” is displayed.

Furthermore, when double clicking the alarm, the following screen is displayed.



(1) Source
The camera name which alarm occurred from is displayed. In the case the multiple camera notification is set, the camera name set for [Camera to Use as Source] in step 6 (p. 66) of “Notifying for Multiple Cameras” is displayed.

(2) Alarm
The alarm name set in the Alarm Definition is displayed.

(3) Message
The analytics event name set in the “Setting the XProtect Management Client” (p. 62) is displayed.

(4) Type
“CrowdPeopleCounter” is displayed.

(5) Instructions
The following contents is displayed:

- When the setting is set for [people or more], “xx people or more” is displayed when the count reaches the threshold and goes above, and when the count goes back to normal status, it will display “less than xx people”. When the setting is set for [people or less], “xx people or less” is displayed when the count goes to the threshold or below, and when the count goes back to normal status, it will display “more than xx people” (“xx” is the value set for the threshold).
- Name set in [Name] from step 3 (p. 65) of the “Notifying for Multiple Cameras”
- Camera name selected in step 4 (p. 66) of the “Notifying for Multiple Cameras”

Contents of Output File

Count results, as CSV file or JPEG file, are outputted to the download folder set in “Output Settings to Analysis Server” (p. 19) and “Downloading Analysis Results in CSV File or JPEG File” (p. 59). Also, schedule run history in CSV file will be outputted to the Analysis Server.

Folder Names and File Names

The folder names and file names of the location to be outputted are as follows.

- CSV file output to Analysis Server

Folder Name	Count in live video by Crowd People Counter button []	<specified drive>\CrowdPeopleCountOutput\Manual\<camera name>_<camera GUID>\<count start date and time>
	Count with schedule	<specified drive>\CrowdPeopleCountOutput\Schedule\<camera name>_<camera GUID>\<count start date and time>
File Name	[File Creating Interval] set to [Do Not Create New File]	<detection area name>_<data output start date and time>_result.csv
	[File Creating Interval] set to other than [Do Not Create New File]	<detection area name>_<file creation date and time>_result.csv

- JPEG file output to Analysis Server

Folder Name	Count in live video by Crowd People Counter button []	<specified drive>\CrowdPeopleCountOutput\Manual\<camera name>_<camera GUID>\<count start date and time>\<file output year month and day>
	Count with schedule	<specified drive>\CrowdPeopleCountOutput\Schedule\<camera name>_<camera GUID>\<count start date and time>\<file output year month and day>
File Name		<detection area name>_<frame date and time>.jpg

- Run history of schedule outputted to Analysis Server
  Details of the count run with schedule (p. 37) are outputted in a CSV format.

Folder Name	<specified drive>\CrowdPeopleCounterOutput\ScheduleLog
File Name	ScheduleLog.csv

- CSV file downloaded to Client PC

Folder Name		<path to the download folder specified>\<camera name>_<camera GUID>\<file output date and time>
File Name	[File Creating Interval] set to [Do Not Create New File]	<detection area name>_<data output start date and time>_result.csv
	[File Creating Interval] set to other than [Do Not Create New File]	<detection area name>_<file creation date and time>_result.csv

- JPEG File downloaded to Client PC

Folder Name	<path to the download folder specified>\<camera name>_<camera GUID>\<file output date and time>\<file output year month and day>
File Name	<detection area name>_<frame date and time>.jpg

Note

- When the area is not set, the <detection area name> will be displayed as "Entire frame".
- <data output start date and time> indicates the date and time of the first data in the CSV file. In case of a file downloaded to the Client PC, [Start Date & Time] set following the step 2 in"Downloading Analysis Results in CSV File or JPEG File" (p. 59) is indicated.
- <frame date and time> indicates the shooting date and time of the output frame.
- <file output date and time> indicates the date and time clicked following the step 6 in "Downloading Analysis Results in CSV File or JPEG File" (p. 59).
- <file creation date and time> indicates the analysis start date and time of each CSV file. Starting at 00:00:00, date and time is displayed according to the intervals set for [File Creating Interval].
  For example, if the [File Creating Interval] is set to [15 min.], and the analysis was started on June 30, 2019 10:37, the < File Creation date and time> would be <20190630103000>, <20190630104500>, <20190630110000>,... and so on.
- The <count start date and time >, <frame date and time>, and <file output date and time> are displayed as yyyyMMddHHmmssfff. <data output start date and time> and <file creation date and time> are displayed as yyyyMMddHHmmss. <file output year month and day> is displayed as yyyyMMdd. Where yyyy is year, MM is month, dd is day, HH is hour (24 hours), mm is minutes, ss is seconds and fff is milliseconds.
- The date and time used for <count start date and time>, <file output year month and day>, <file output date and time>, <data output start date and time>, and <file creation date and time> are based on the internal clock of the computer on which the software is running. <frame date and time> is based on the XProtect Server's internal clock.

Count Results in CSV File

The contents of the count results in CSV file are as follows.
The following contents are recorded in the CSV file that is outputted after the count.

– Line 1: Camera name

– Line 2 and on: <File path for the outputted JPEG file>, <Date & time of shooting>, <Number of people counted in the entire scene>, <Number of people counted in the detection area 1>, <Number of people counted in the detection area 2>, <Number of people counted in the detection area 3>, <Number of people counted in the detection area 4>

Output Sample

```
VB-H45
C:\CrowdPeopleCountOutput\Manual\VB-H45_a1b23c4d-12a3-1234-12b3-c4d1a2341234\20190717140711270\20190717\room1_20190717140712412.jpg,20190717140712412,445,121,173,50,92
C:\CrowdPeopleCountOutput\Manual\VB-H45_a1b23c4d-12a3-1234-12b3-c4d1a2341234\20190717140711270\20190717\room1_20190717140720012.jpg,20190717140720012,468,145,161,43,89
…
```

Note

- The part of file path will be blank in case the setting is not set to output JPEG file, and in case of CSV files downloaded to the Client PC.
- The <Date & time of shooting> represents the date and time of shooting of the frame acquired for counting and uses the time set in Milestone XProtect Server. The format is yyyyMMddHHmmssfff.
- <Number of people counted in the entire scene> describes the number of people detected in the entire video, including the part other than the detection area. However, the number of people in the non-detected area is not included.
- The density (number of people per unit area) is not described.

Schedule Run History in CSV File

In the schedule run history of the CSV file, each of the following items are outputted as a line separated by a comma.

Items	Description
[Schedule Name]	—
[Target Video]	For [Live Video]: live For [Recorded Video]: video
Results	Count executing: start Count successful: success Count failed: fail Analysis interrupted: interrupted Schedule deleted by user: remove Count not run: skip Stopped by user: stop Time ended before count started: cancel
Causes when result shows [interrupted] or [skip]	Out of License: No License. Low priority (p. 42): only one count per camera.
Camera name	—
Count start date and time	For live video: Date and time set in [Start Time] For recorded video: Date and time set in [Count Date & Time]
Count end date and time	For live video: Date and time set in [End Time] For recorded video: Date and time counting ended.
[Repeat]	[Daily]: 1 [Do not repeat]: 0 For recorded video counting: Blank
Video capture start date and time	Capture start date and time of video to be counted
Video capture end date and time	Capture end date and time of video to be counted
[Detection Area Name]	—
[Count Interval]	—
[people or more] or [people or less] for notification	[people or more]: over [people or less]: under
[Duration]	Blank if [People Count Notification] is disabled.
Number of people for [Notification 1 (Critical)]	Number of people set in [Notification 1 (Critical)] Blank if [People Count Notification] is disabled.
Number of people for [Notification 2 (Warning)]	Number of people set in [Notification 2 (Warning)] Blank if [Notification 2 (Warning)] is disabled.
ID number	Unique number assigned to each schedule

Output Sample

```
room3,live,success,VB-H45,2019-09-17T11:04:02.897,2019-09-17T11:06:00.147,1,2019-09-17T11:04:00.000,2019-09-17T11:06:00.000,enterance,10,under,10,40,60,1a2b3456-cd78-9012-e345-f6gh7ijk8l9m
```

Note

- The date and time are listed in yyyy-MM-ddTHH:mm:ss.fff format.
- Items in [ ] are set in the [Schedule] screen. For details on each item, refer to “Counting People Using the Schedule Function” (p. 37).

JPEG File

The following JPEG file is outputted.

(1) Number of people counted in the entire screen or in all the detection areas

(2) Set detection area

(3) Set non-detection area

(4) A colored dot indicating that the person has been detected

(5) Counted number in each detection area

Appendix

When the count result does not become 0 in a video without a person

This software detects subjects that looks like a person in the video and calculates the number of people as a decimal value. Therefore, because of rounding up the value after the decimal point, the count may not be 0 even when there are no people in the video. If the count results need to be 0, change the processing method of the count results.
The settings are made on the screen displayed by clicking [Setting] of [Advanced Settings] on the [Analysis Settings] tab (p. 23) in the [Counter Settings] screen.

Important

This setting is for when there are no people in the video, and is not for adjusting the total number of persons. Use the default value unless necessary.

[Detection Value for Less Than 1]

This software calculates the numbers of persons as 1.0, 0.8, 0.5, etc., depending on the likelihood of the subject being human.
By default, this number is rounded off to the first decimal point to display the count results by integer. For example, if the number is 0.5, the count result is 1 person. If [Detection Value for Less Than 1] is set to [Round down] or [Round up], the count is rounded up or down to the next whole number. The number is processed for each detection area, so when four detection areas are set, the count results increase or decrease by up to four persons.

[Noise Reduction Threshold]

Use this setting when the count does not reach 0 person even if [Detection Value for Less Than 1] is selected for [Round down]. If [Enable] is checked, value can be entered. Set the threshold value, in the range of 1 to 100 for removing the noise of detection values. The higher the value, the fewer the count results.

Important

Increasing the [Noise Reduction Threshold] value may reduce the overall count result depending on the video. Do not set an unnecessarily large value.

Notes When Using this Software with Moving Object Mask for Milestone XProtect

Moving Object Mask for Milestone XProtect (sold separately) is a software that silhouettes moving objects in the video. By using in combination with Crowd People Counter for Milestone XProtect, it enables to count the number of people while silhouetting them. However, among the functions accessible with the Guest User's privilege, the following functions will not be accessible to Guest Users.

- Displaying an image with colored dots showing the person has been detected (p. 32), when using Change Display button [].
- Displaying an image from a graph (p. 57)
- Downloading JPEG files (p. 59)

Important

These restrictions can be removed if in [Counter Settings] screen (p. 23), [Restrict View to Administrators Only] for [Other Settings] is unchecked. However, special attention is necessary, because once the restrictions are removed, Guest Users will also have access to non-silhouetted images.

Note

- [Restrict View to Administrators Only] is displayed only when Moving Object Mask for Milestone XProtect is installed.
- For details regarding the Administrator and the Guest User, refer to the manual of Moving Object Mask for Milestone XProtect.

Troubleshooting

Problem	Countermeasures
Not counting or takes time for the count result to be displayed.	When the count is running on a number of cameras at the same time, the Analysis Server can be overloaded and may take time to count or become unstable. Use [Count Options] to reduce the load on the Analysis Server by shifting the timing of the count for each camera (p. 43).
Count result of a recorded video is deleted.	• Count results are deleted when the set storage period is expired. For CSV files and JPEG files outputted when the count was performed, it is possible to configure so that the files are not deleted automatically. For the setting method, refer to "Output Settings to Analysis Server" (p. 19). • The date and time of the deletion of count results, CSV files, and JPEG files applies to the capturing date and time of the video used for the count and not on the date and time when the count was performed. Therefore, if the count is performed for videos that were recorded before the set storage period, the deletion will take place according to the next Deletion Time after the count is performed.
CSV file or JPEG file is deleted before the set storage period expires.	When there is not enough space remaining in the Analysis Server, even before the set storage period expires, files are deleted in the order of old to new. In such a case, increase the space of the Analysis Server.
Analysis stopped.	When CSV files and JPEG files are set not to be deleted automatically, and the space of the Analysis Server becomes insufficient, analysis stops. In such a case, increase the space of the Analysis Server.
No notification.	There is no notification if settings for XProtect Management Client are not made. For the details of the setting method, refer to "Setting the XProtect Management Client" (p. 62).
No notification when notification for multiple cameras is set.	• When setting the notification for [people or more], it will notify when more than one camera is counting, including the camera that was set for [Camera to Use as Source] in step 6 (p. 66) of "Notifying for Multiple Cameras". Check if the camera set as [Camera to Use as Source] performs the count. • When setting the notification for [people or less], it will notify when all the target cameras are performing the count. Check if all the target cameras are performing the count.
The count result does not become 0 in a video without a person.	This software detects subjects that looks like a person in the video and calculates the number of people as a decimal value. Therefore, because of rounding up the value after the decimal point, the count may not be 0 even when there are no people in the video. If the count results need to be 0 people, change the processing method of the count results (p. 76).
Installation fails when updating from Version 1.0 to Version 1.1.	When updating from Version 1.0 to Version 1.1, log in to the Analysis Server with the same user name as when Version 1.0 was installed. Installation is not possible if logging in with a different user name.
After canceling the uninstallation of the setting/viewer software (Crowd People Counter Viewer), the installation screen was displayed.	Close the installation screen that appears. The uninstall is cancelled.
SQL Server installation fails.	• If the SQL Server installation was canceled in the middle and cannot complete it, restart the Analysis Server and try the installation again. • If the SQL Server installation failed, check the SQL Server logs. The log file is located at: C:\Program Files\Microsoft SQL Server\130\Setup Bootstrap\Log

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