Network Camera

User's Guide

Software Version 1.2

Before operating the unit, please read this manual thoroughly
and retain it for future reference.

SNC-CH110/CH210
SNC-DH110/DH110T/DH210/DH210T

IPELA HD

Table of Contents

Overview

Features

- High quality streaming, maximum image size (2048 × 1536 (SNC-CH210/DH210/DH210T)/ 1280 × 960 (SNC-CH110/DH110/DH110T)).
- High-quality HD (720P) live images from camera can be monitored at a maximum frame rate of 30 fps.
- Exmor CMOS sensor for high quality streamed images. (SNC-CH210/DH210/DH210T)
- Dual streaming for transmission of images with different angles of view. (Stream Squared function)
- Backlight compensation function enables clearer images for streaming in a bright environment.
- NR enables clearer images for streaming in the low lightness environment.
- Three video compression modes (video codecs) JPEG/MPEG4/H.264 are supported.
- Single codec mode and dual codec mode are available.
- Motion detection, camera tampering detection and alarm functions.
- Up to 5 users can view images from one camera at the same time.
- Date/time can be superimposed on images.
- PoE (Power over Ethernet) compliant.

How to Use This User's Guide

This User's Guide explains how to operate the Network Camera from a computer.
The User's Guide is designed to be read on the computer display.
This section gives tips on making the most of the User's Guide-read it before you operate the camera.

Jumping to a related page

When you read the User's Guide on the computer display, you can click on a sentence to jump to a related page.

Software display examples

Note that the displays shown in the User's Guide are explanatory examples. Some displays may be different from the ones that appear in actual use.

Printing the User's Guide

Depending on your system, certain displays or illustrations in the User's Guide, when printed out, may differ from those that appear on your screen.

Installation Manual (printed matter)

The supplied Installation Manual describes the names and functions of parts and controls of the Network Camera, connection examples, how to set up the camera, and precautions. Be sure to read the Installation Manual beforehand.

System Requirements

The following computer environment is necessary for the computer to display images and the controls of the camera.
(Nov. 2010)

CPU

Intel Core 2 Duo, 2 GHz or higher

Memory

1 GB or more

OS

Microsoft Windows XP, Windows Vista (32bit version only), Windows 7 (32-bit version only)
Authorized editions:
    Windows XP: Professional
    Windows Vista: Ultimate, Business
    Windows 7: Ultimate, Professional

Microsoft DirectX 9.0c or higher

Web Browser

Microsoft Internet Explorer Ver. 6.0, Ver. 7.0, Ver. 8.0
Firefox Ver.3.5 (Plug-in free viewer only)
Safari Ver.4.0 (Plug-in free viewer only)
Google Chrome Ver.4.0 (Plug-in free viewer only)

Display

SNC-CH210/DH210/DH210T:
1600 × 1200 pixels or higher
(2560 × 1600 pixels or higher is recommended)

SNC-CH110/DH110/DH110T:
1600×1200 pixels or higher

The Preparation section explains what the administrator has to prepare for monitoring images after installation and connection of the camera.

Assigning the IP Address to the Camera

To connect the camera to a network, you need to assign a new IP address to the camera when you install it for the first time.
You can assign an IP address in two ways:
• Using SNC toolbox stored in the supplied CD-ROM (see this page)
• Using the ARP (Address Resolution Protocol) commands (see page 89)

This section explains how to assign an IP address to the camera using the SNC toolbox and how to configure the network.

Before starting, connect the camera, referring to "Connecting the Camera to a Local Network" in the supplied Installation Manual.
Consult the administrator of the network about the assigned IP address.

Notes

• SNC toolbox may not operate correctly if you use a personal firewall or antivirus software in your computer. In that case, disable the software or assign an IP address to the camera using another method. For example, see "Assigning the IP Address to the Camera Using ARP Commands" on page 89.
• If you are using Windows XP Service Pack 2 or later, Windows Vista or Windows 7, disable the Windows Firewall function; otherwise, SNC toolbox will not operate correctly. For the setting, see "Configuring Windows Firewall" in "When using Windows XP Service Pack 2 or later" on page 9, "Configuring Windows Firewall" in "When using Windows Vista" on page 11, or "Configuring Windows Firewall" in "When using Windows 7" on page 14.

Assigning an IP address using SNC toolbox

1 Insert the CD-ROM in your CD-ROM drive.
A cover page appears automatically in your Web browser.
If it does not appear automatically in the Web browser, double-click the index.htm file on the CD-ROM.

When you are using Windows Vista, the "Auto play" pop-up may appear. For details, see "Installing software" in "When using Windows Vista" on page 10.

2 Click the **Setup** icon of **SNC toolbox**.
The "File Download" dialog opens.

When you are using Windows XP Service Pack 2 or later, Windows Vista or Windows 7, a message regarding the active contents may appear. For details, see "Installing software" in "When using Windows XP Service Pack 2 or later" on page 8, "Installing software" in "When using Windows Vista" on page 10, or "Installing software" in "When using Windows 7" on page 13.

3 Click **File Open**.

Note

If you click **Save** on the "File Download" dialog, you will not be able to perform set up correctly. Delete the downloaded file, and click the **Setup** icon again.

4 Install SNC toolbox on your computer using the wizard.
If the Software License Agreement is displayed, read it carefully and click **Accept** to continue with the installation.

5 Start SNC toolbox.

When you are using Windows Vista, the message "User Account Control – An unidentified program wants access to your computer" may appear. In this case, click "Allow".

6 Click **Search**.
SNC toolbox detects the network cameras connected to the local network and lists them.
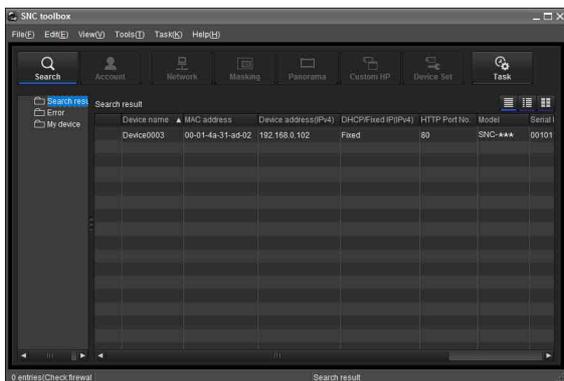
Tip

The factory setting of the camera network is DHCP mode.

7 Select a camera you want to assign an IP address from the list and click **Network**.
The account settings screen is displayed.
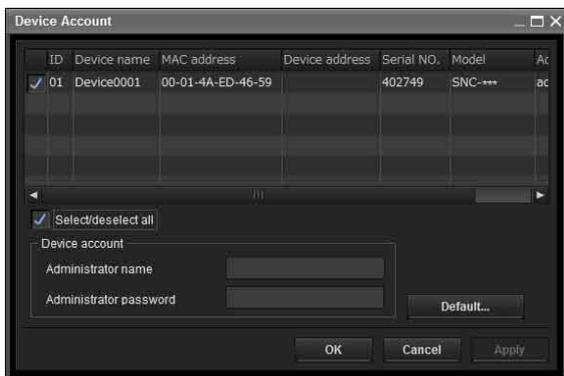
8 Register the name and password of the administrator and click **OK**.
The factory settings for both items are "admin".
The **Network Setting** screen is displayed.
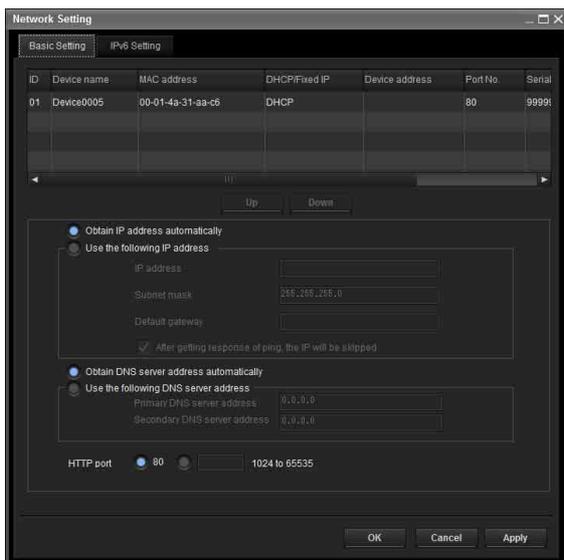
9 Set the IP address.

To obtain the IP address automatically from a DHCP server:
Select **Obtain an IP address automatically**.
The IP address, Subnet mask and Default gateway are assigned automatically.

Note

When you select **Obtain an IP address automatically**, make sure that the DHCP server is operating on the network.

To specify the IP address manually:
Select **Use the following IP address**, and type the IP address, Subnet mask and Default gateway in the relevant boxes.

10 Set the DNS server address.

To obtain the DNS server addresses automatically:
Select **Obtain DNS server address automatically**.

To specify the DNS server addresses manually:
Select **Use the following DNS server address**, and type the Primary DNS server address and Secondary DNS server address in the relevant boxes.

11 Set the HTTP port No.
Normally, select **80** for the HTTP port No. To use another port number, type a port number between 1024 and 65535 in the text box.

Note

When using a port number other than **80**, check with the network administrator first.

12 Confirm that all items are correctly set, then click **OK**.
If "Setting OK" is displayed, the IP address is correctly assigned.

13 When setting is finished, to access the camera directly, double-click the camera name in the list.
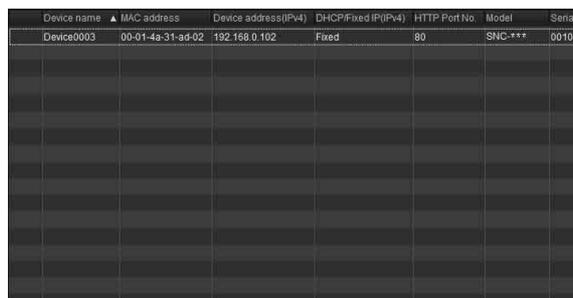
The viewer screen of the network camera is displayed on the Web browser.

Display sample

If the IP address is not set correctly, the viewer does not appear after step 13. In that case, try to set the IP address again.

When using Windows XP Service Pack 2 or later

Installing software

A warning message regarding the active contents may appear when you install software such as SNC toolbox from CD-ROM. In this case, operate as follows:

Example: In case of SNC toolbox

If message "Internet Explorer" appears, click **Yes**.

If the message "File Download – Security Warning" appears, click **Run**.

Note

If you select **Save** in the "File Download – Security Warning" dialog, you will not be able to perform the installation correctly. Delete the downloaded file, and click the **Setup** icon again.

If the message "Internet Explorer – Security Warning" appears, click **Run**.

The software installation starts.

Installing ActiveX Control

During installation of ActiveX Control, the "Information Bar" or "Security Warning" message may appear. In this case, operate as follows:

If the message "Information Bar" appears, click **OK**.

If the information bar appears, click on the bar and select **Install ActiveX Control…**.

If "Internet Explorer – Security Warning" appears, click **Install**.

The installation of ActiveX Control starts. When installation is completed, the main viewer or the Motion detection menu appears.

Configuring Windows Firewall

SNC toolbox may not operate correctly depending on the configuration of Windows Firewall. (No cameras are shown in the list even if they are detected.) In this case, confirm the Windows Firewall configuration as follows:

Example: In case of SNC toolbox

To turn Windows Firewall off

1 Select **Control Panel** from the **Start** menu of Windows.

2 Select **Security Center** of the working field.

3 Select **Off** in the Windows Firewall dialog.
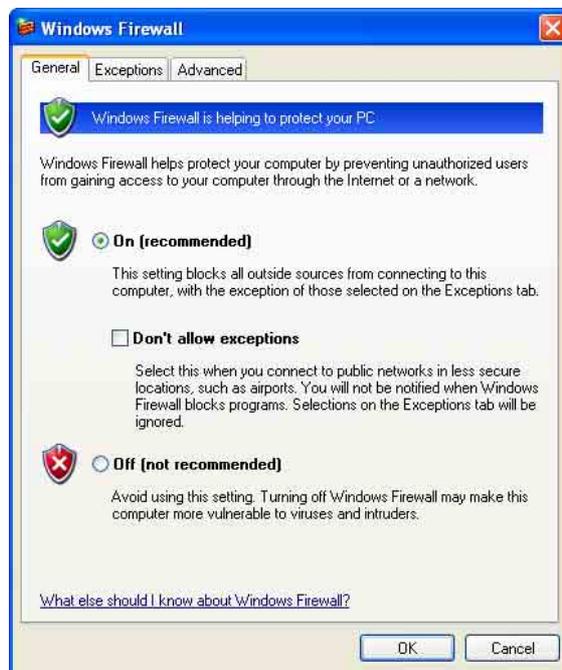
The camera will be displayed in the list.

To turn Windows Firewall on

1 Select **Control Panel** from the **Start** menu of Windows.

2 Select **Security Center** of the working field.

3 Select **Exceptions** in the Windows Firewall dialog.

4 Click **Add Program…**.
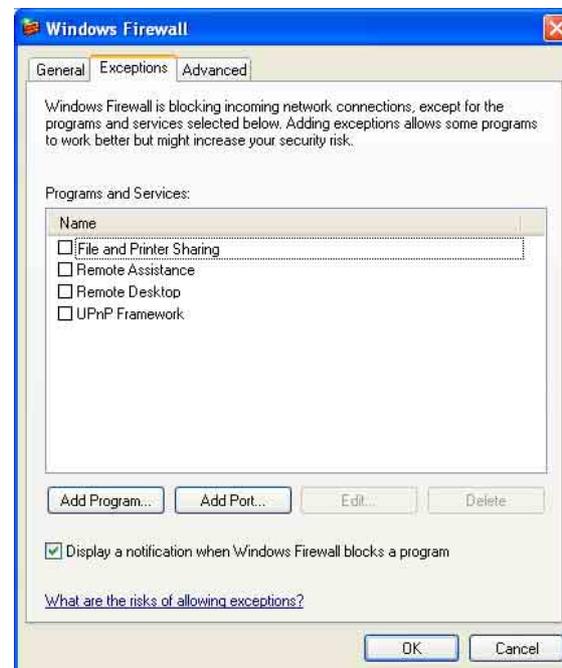
5 In the Add Program dialog, select SNC toolbox and click **OK**.

SNC toolbox is added to the Programs and Services list.

6 Click **OK**.
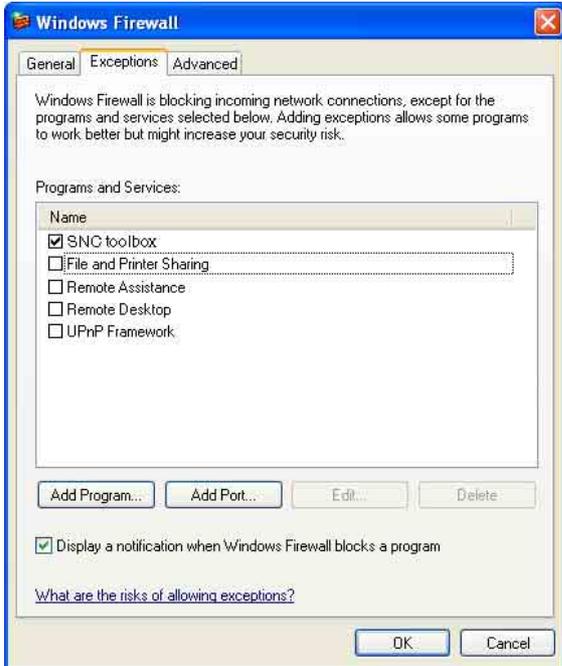
When the above procedure is completed, the camera connected in the local network are displayed in SNC toolbox.

When using Windows Vista

Installing software

A warning message regarding the active contents may appear when you install software such as SNC toolbox from the CD-ROM. In this case, operate as follows:

Example: In case of SNC toolbox

If the pop-up "AutoPlay" appears when a CD-ROM is inserted into the CD-ROM drive, click **Install or run program**.

Note

If you click **Open folder to view files**, the Web browser will not open automatically. In this case, double-click the "index.htm" file in the CD-ROM.

If the "Internet Explorer" message appears, click **Yes**.

If the "File Download – Security Warning" message appears, click **Run**.

Note

If you select **Save** in the "File Download – Security Warning" dialog, you will not be able to perform installation correctly. Delete the downloaded file, and click the Setup icon again.

If the message "Internet Explorer – Security Warning" appears, click **Run**.

If the message "User Account Control – An unidentified program wants access to your computer" appears, click **Allow**.

The software installation starts.

Starting the software

When you start software such as SNC toolbox, the message "User Account Control – An unidentified program wants access to your computer" may appear. In this case, click **Allow**.

Installing ActiveX Control

During installation of ActiveX Control, the information bar or "Security Warning" may appear. In this case, operate as follows:

If the message "Information Bar" appears, click **Close**.

If the information bar appears, click on the bar and select **Install ActiveX Control…**.

If the message "User Account Control – Windows needs your permission to continue" appears, click **Continue**.

If the "Internet Explorer – Security Warning" message appears, click **Install**.

Installation of ActiveX Control starts. When installation is completed, the main viewer or Motion detection menu appears.

Configuring Windows Firewall

SNC toolbox may not operate correctly depending on the configuration of Windows Firewall. (No cameras are shown in the list even if they are detected.) In this case, confirm the Windows Firewall configuration as follows:

Example: In the case of SNC toolbox

To turn Windows Firewall off

1 Select **Control Panel** from the **Start** menu of Windows.

2 Click **Windows Firewall**.

3 Select **Turn Windows Firewall on or off**.
"User Account Control – Windows needs your permission to continue" may appear. In this case, click **Continue**.

4 Select **Off** in the **General** tab.
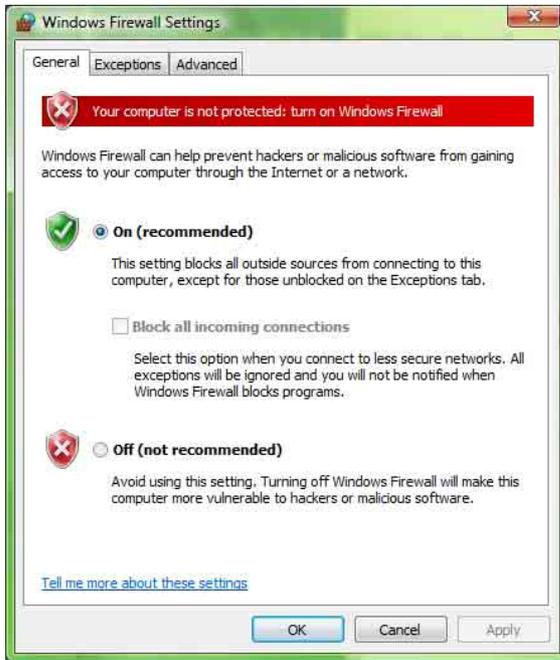
The cameras will be displayed in the list.

To turn Windows Firewall on

1 Select **Control Panel** from the **Start** menu of Windows.

2 Click **Windows Firewall**.

3 Select **Turn Windows Firewall on or off**.
If the message "User Account Control - Windows needs your permission to continue" appears, click **Proceed**.

4 Select **Exceptions** in the Windows Firewall dialog.

5 Click **Add Program…**.

6 If the Add Program dialog appears, select SNC toolbox and click **OK**.

SNC toolbox is added to the Program or port list.

7 Click **OK**.
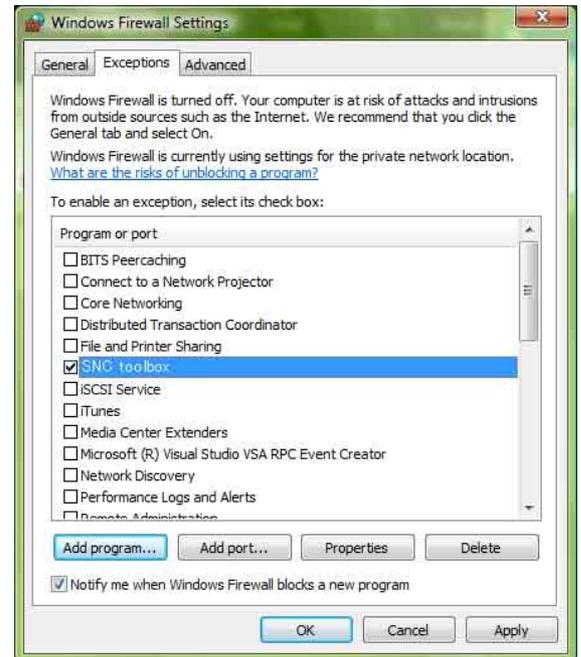
When the above procedure is completed, the cameras connected in the local network are displayed in SNC toolbox.

When using Windows 7

Installing software

A warning message regarding the active contents may appear when you install software such as SNC toolbox from the CD-ROM. In this case, operate as follows:

Example: In case of SNC toolbox

If the pop-up "AutoPlay" appears when a CD-ROM is inserted into the CD-ROM drive, click **Install or run program from your media**.

Note

If you click **Open folder to view files**, the Web browser will not open automatically. In this case, double-click the "index.htm" file in the CD-ROM.

If the message "Internet Explorer" appears, click **Yes**.

If the message "File Download - Security Warning" appears, click **Run**.
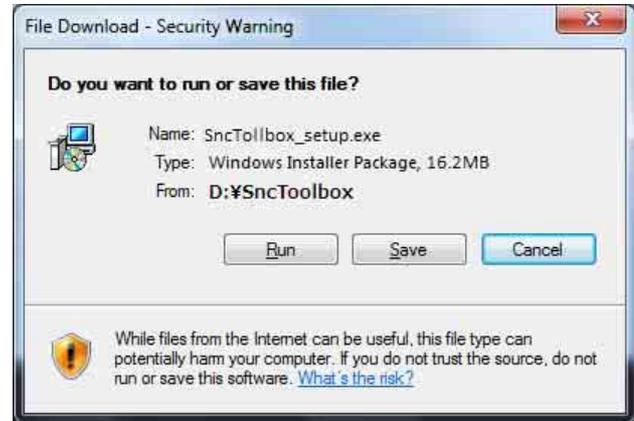
Note

If you select **Save** in the "File Download - Security Warning" dialog, you will not be able to perform installation correctly. Delete the downloaded file, and click the Setup icon again.

If the message "User Account Control - Do you want to allow the following program from an unknown publisher to make changes to this computer?" appears, click **Allow**.

The software installation starts.

Installing ActiveX Control

During installation of ActiveX Control, the information bar or "Security Warning" may appear. In this case, operate as follows:

If the information bar appears, click on the bar and select **Install This Add-on for All Users on This Computer...**.
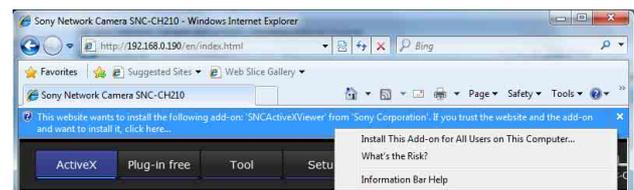
If the message "User Account Control - Do you want to allow the following program to make changes to this computer?" appears, click **Allow**.

The installation of ActiveX Control starts. When installation is completed, the main viewer or the Motion detection menu appears.

## Configuring Windows Firewall

SNC toolbox may not operate correctly depending on the configuration of Windows Firewall. (No cameras are shown in the list even if they are detected.) In this case, confirm the Windows Firewall configuration as follows:

Example: In the case of SNC toolbox

To turn Windows Firewall off

1 Select **Control Panel** from the **Start** menu of Windows.

2 Click **Windows Firewall**.

3 Select **Turn Windows Firewall on or off**.
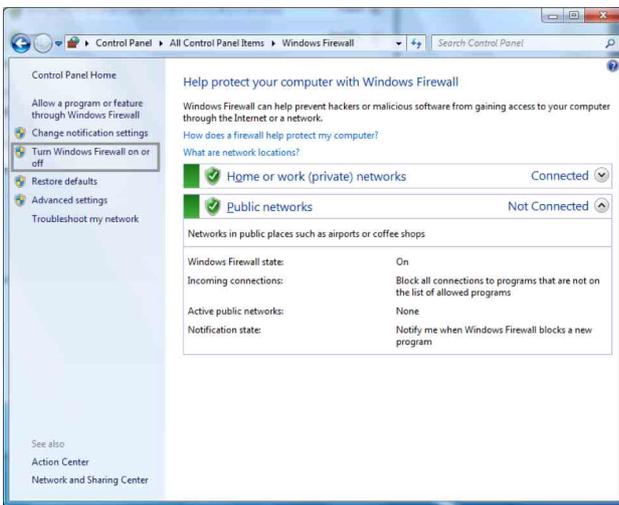
4 Select **Disable Windows Firewall**.
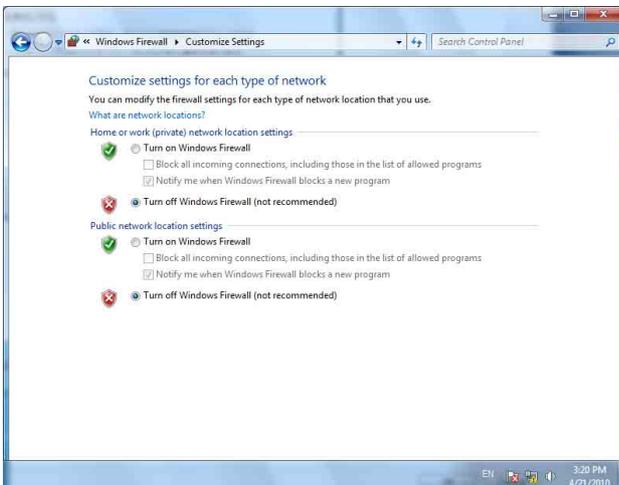
The cameras will be displayed in the list.

To turn Windows Firewall on

1 Select **Control Panel** from the **Start** menu of Windows.

2 Click **Windows Firewall**.

3 Select **Allow a program or feature through Windows Firewall**.
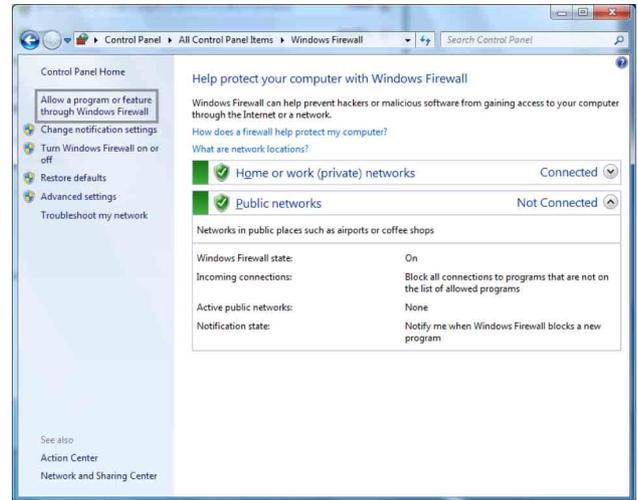
4 Select **Allow another program...**.
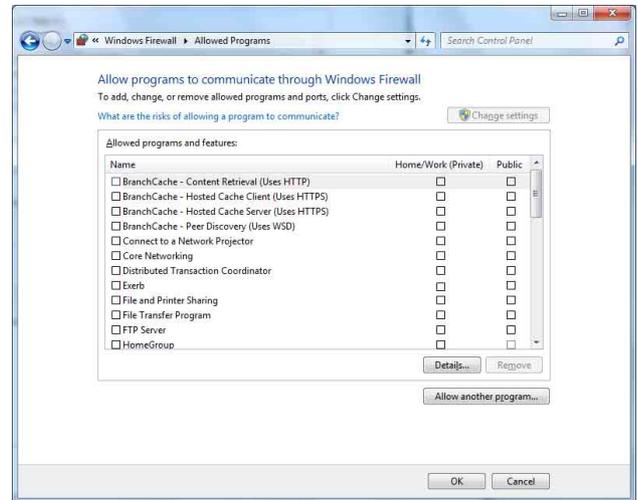
5 Add program.
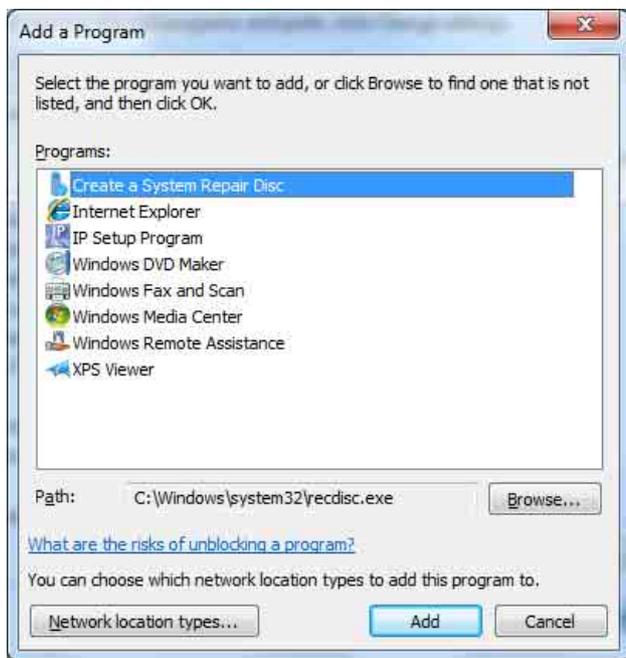
When the above procedure is completed, the cameras connected in the local network are displayed in SNC toolbox.

Accessing the Camera Using the Web Browser

After the IP address has been assigned to the camera, check that you can actually access the camera using the Web browser installed on your computer.
Use Internet Explorer as a Web browser.

1 Start the Web browser on the computer and type the IP address of the camera in the URL address bar.

The viewer window is displayed.

Display sample

> **Note**

When accessing the camera, images will not be displayed in the following conditions.
• When the maximum number of viewers exceeds 5
• The bit rate including new requests exceeds 16Mbps

Using the SSL function

> **Note**

The model on sale in China does not support the SSL function.

When Internet Explorer 6 is used

"Security Alert" dialog may appear according to the status of the certificate. In this case, click **Yes** to continue.
The viewer window is displayed (in SSL communication).

When Internet Explorer 7 or Internet Explorer 8 is used

When you enter the camera IP address, "Certificate Error" may appear according to the status of the certificate set on the camera. In this case, click **Continue to this website (not recommended).** to continue.
The welcome page appears (in SSL communication).

When "Allow HTTP connection for some clients" (page 49) is checked

To use HTTP and SSL connections separately to access, enter the following in the address box of the browser.

For HTTP connection

For SSL connection

When the viewer of the camera is displayed for the first time

"Security Warning" is displayed. When you click **Yes**, ActiveX control is installed and the viewer is displayed.

Notes

• If **Automatic configuration** is enabled in the Local Area Network (LAN) settings of Internet Explorer, the image may not be displayed. In that case, disable **Automatic configuration** and set the Proxy server manually. For the setting of the Proxy server, consult your network administrator.
• When you install ActiveX Control, you should be logged in to the computer as Administrator.
• If you are using Windows XP Service Pack 2 or later, Windows Vista or Windows 7, the information bar or "Security Warning" may appear. For details, see "Installing ActiveX Control" in "When using Windows XP Service Pack 2 or later" on page 8, "Installing ActiveX Control" in "When using Windows Vista" on page 11, or "Installing ActiveX Control" in "When using Windows 7" on page 13.

Tip

The software is optimized for Internet Explorer using medium font.

To display the viewer correctly

To operate the viewer correctly, set the security level of Internet Explorer to **Medium** or lower, as follows:

1 Select **Tools** from the menu bar for Internet Explorer, then select **Internet Options** and click the **Security** tab.

2 Click the **Internet** icon (when using the camera via the Internet), or **Local intranet** icon (when using the camera via a local network).

3 Set the slider to **Medium** or lower. (If the slider is not displayed, click **Default Level**.)

When using antivirus software, etc., on the computer

- When you use antivirus software, security software, personal firewall or pop-up blocker on your computer, the camera performance may be reduced, for example, the frame rate for displaying the image may be lower.
- The Web page displayed when you log in to the camera uses JavaScript. The display of the Web page may be affected if you use antivirus software or other software described above on your computer.

Preparation

Basic Configuration by the Administrator

You can monitor the camera image by logging in with the initial conditions set for this network camera. You can also set various functions according to the installing position, network conditions or purpose of the camera. We recommend you configure the following items before monitoring images from the camera.

Setting contents	Setting menu
Set the format of the image sent from the camera.	Video codec Tab (page 40)
Select the White Balance mode according to the installation position.	White balance (page 39)
Select the brightness of the image sent from the camera.	Exposure (page 38) Brightness (page 40)
Select the quality of the image sent from the camera.	Video codec Tab (page 40)
Select the view size of the image.	View size (page 21)
Synchronize the date and time of the camera with those of the computer.	Date & time Tab (page 35)
Make the setting for sending the monitor image attached to an e-mail.	e-Mail (SMTP) Menu (page 64)
Set the user access right for the camera.	User Menu (page 60)
Set a place to be watched beforehand.	Preset position Menu (page 61)
Prepare a panorama image.	To create a full image (page 26)

This section explains how to monitor the image from the camera using your Web browser (Internet Explorer).

The functions of the camera should be set by the Administrator. For the setting of the camera, see "Administrating the Camera" on page 32.

Administrator and User

This network camera identifies those who log in as the **Administrator** or **User**.
The **Administrator** can use all the functions of this network camera, including camera settings. The **User** can use the functions for monitoring the image from the camera, and control the camera. The **Viewer mode** setting is used to restrict the user's access rights. There are five types of users.

Each type of user can use the corresponding functions below.

Function	Administrator	User				
		Full	**Pan/Tilt**	**Preset position**	**Light**	**View**
Monitor a live image	●	●	●	●	●	●
View the date and time	●	●	●	●	●	●
Control the frame rate (JPEG mode only)	●	●	–	–	–	–
Control the image view size	●	●	●	●	●	–
Save a still image and movie in the computer	●	●	●	●	●	–
Send an image file to the FTP server	●	●	–	–	–	–
Send an image attached to an e-mail	●	●	–	–	–	–
Switch the Day/Night function mode	●	●	–	–	–	–
Switch the TCP/UDP transmission mode (Available in MPEG4/H.264 mode only)	●	●	–	–	–	–
Call the preset position	●	●	●	●	–	–
Perform the pan/tilt/zoom operation	●	●	●	–	–	–
Select the codec mode	●	●	●	●	●	–
Control the setting menu	●	–	–	–	–	–

● Usable function

– Not usable function

The access rights of the administrator and the user can be set in "Setting the User — User Menu" of the Administrator menu on page 60.

Logging in to the System

Logging in as a user

1 Start the Web browser on your computer and type the IP address of the camera you want to monitor.

| Address | http://192.168.0.100 |

The viewer is displayed.

Display sample:

Three types of viewer are available: ActiveX viewer, Plug-in free viewer and custom homepage. By default, ActiveX viewer is displayed. To switch the viewer, make changes to the Viewer menu (page 76).

> **Note**
>
> If the main viewer does not start correctly, the security level of the Internet Explorer may be set to higher than **Medium**. See "To display the viewer correctly" on page 16 and check the security level.

About Viewers

You can use the following viewers.

ActiveX viewer

This viewer can monitor the camera image in any of the **JPEG**, **MPEG4** and **H.264** video codecs.
You must install this viewer when you access the main viewer for the first time.

When you display the main viewer of the camera for the first time

When you access the network camera using ActiveX viewer for the first time, the **Security Warning** appears. Click **Yes** and install ActiveX Control. You can use all the functions of the viewer with ActiveX Control.

Plug-in free viewer

This viewer allows the user to select from three image display methods: JPEG, JPEG/Flash or ActiveX viewer.
JPEG method: JPEG images will be displayed in sequence.
JPEG/Flash method: JPEG images will be displayed in sequence. Adobe Flash is required to display the image.
ActiveX viewer method: The image can be viewed when the image display is set to **JPEG**, **MPEG4** or **H.264**.

> **Notes**
>
> • If **Automatic configuration** is enabled in the Local Area Network (LAN) Settings of Internet Explorer, the camera image may not be displayed. In that case, disable **Automatic configuration** and set the Proxy server manually. For the setting of the Proxy server, consult your network administrator.
> • When you install ActiveX Control, you should be logged in to the computer as the Administrator.

> **Tip**
>
> Every page of this software is optimized for Internet Explorer in **Medium** font.

Configuration of Main Viewer

This section explains the functions of the parts and controls of the main viewer. For a detailed explanation on each part or control, see the specified pages.

Main viewer using ActiveX viewer

Main menu

Control panel section

Monitor image section

Main menu

ActiveX

Displays the ActiveX viewer.

Plug-in free

Displays the Plug-in free viewer.

Tool

You can download system utility from here. (page 28) This operation is only available when you are logged in as administrator.

Setup

Click to display the Administrator menu. (page 32) You can operate this function only when logging in as the administrator.

Language

Set language from pull-down.

Control panel section

You can drag the panels to the monitor screen and configure them.
To return to the operation panel, drag the panel and configure the operation panel.
Click the ⊼ to hide the detail setting menu or click it again to show the menu.

Information panel
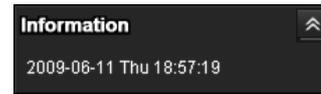
Check the date and time here.

View panel

You can change the screen mode, size of the image, image codec mode and frame rate. Also, still images and movies can be saved (movie saving can also be stopped) from here.

Screen Mode

Select Window or Full Screen.

View size

Selects the view size to be displayed.
Click **View size** list box to select the view size.
Select **x1/4** to display the images set in **Image size** of the Camera menu (page 41) in 1/4 size.
Select **x1/2** to display the images set in **Image size** of the Camera menu (page 41) in 1/2 size.
Select **x1** to display images set in **Image size** of the Camera menu. (page 41)
Select **Full** to display images according to the view size.
Select **Fit** to display images according to the view size, with fixed aspect ratio.

Image Codec

Select **Image 1** or **Image 2** for the image codec mode.

> **Note**
>
> When **Codec** of **Image 2** is set to **Off** in the Camera menu-Video codec tab, you cannot select **Image 2**.

Frame rate

(Displayed only when the camera image is in JPEG.)
Selects the frame rate to transmit images.

![capture icon] (Capture)

Click to capture a still image shot by the camera and to store it in the computer. Click ![folder icon] to open the folder to be saved.

> **Note**
>
> In the case of Windows VISTA or Windows 7, if "Enable Protected Mode" is checked in Control Panel-Internet Option-Security, still images cannot be shot.

![run icon] (Run)/![stop icon] (Stop Save Video)

Runs and stops Save Video. Click ![folder icon] to open the folder to be saved.

> **Note**
>
> In the case of Windows VISTA or Windows 7, if "Enable Protected Mode" is checked in Control Panel-Internet Option-Security, video content cannot be saved.

Camera control panel
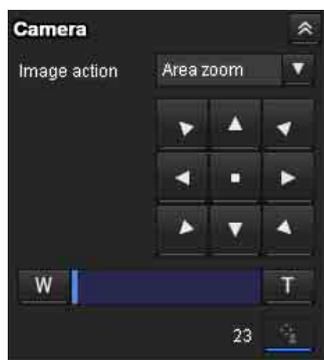
The camera control panel appears when **SolidPTZ** is set to **On**. This panel allows you to control the camera's pan/tilt/home position and zoom (page 25). In addition, you can obtain authority to operate the camera in exclusive control mode.

Image action

Select the mode of operation from **Off, Area zoom** and **Vector dragging**.

Pan/Tilt control

Click the arrow button the direction in which you want to move the camera. Keep it pressed to move the camera continuously.
To return to the home position, click ![home icon].

Zoom control

Press ![W] to zoom out, and press ![T] to zoom in.
Zooming continues while the button remains pressed.

![exclusive control icon] Exclusive control

Click this button to display the time remaining for operation authority. However, if operation authority has not been obtained, the waiting time is displayed.

> **Note**
>
> Set the **Exclusive control mode** in the System Tab of the System Menu to **On** to perform exclusive control (page 34).

Panorama panel
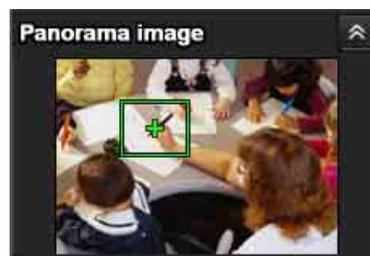
It is displayed when **SolidPTZ** is set to on.
The image will be displayed if capture full image (page 37) is clicked.
If you click on the Panorama panel, the image of that place is displayed on the monitor.

Trigger panel
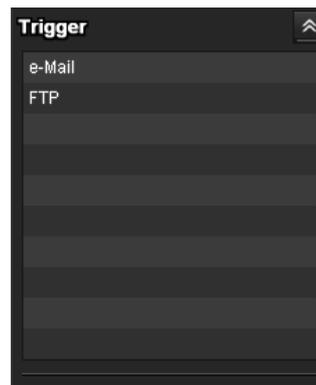
The above is displayed only when **Viewer mode** (page 60) is set to **Full**, and one or more triggers are enabled in the Trigger menu (page 71).

The configured functions are displayed as buttons on this panel.

> **Note**
>
> When the Exclusive control mode is set to on, the configured function cannot be used without operation authority.

Click the function button you want to use on the Trigger panel. The selected function is activated. The selectable functions are as follows:
• send still image files attached to an e-mail (page 27)
• send still image files to an FTP server (page 27)

Preset position panel
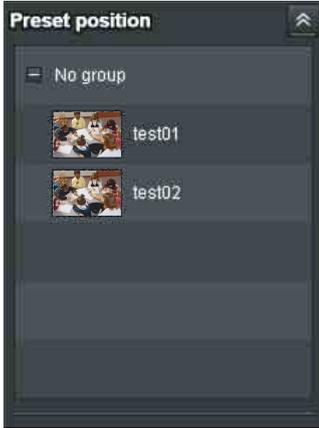
The above is displayed only when one or more preset positions are stored in memory.

The registered preset position is displayed.

If you select a thumbnail when registering a preset position, it will be displayed with a thumbnail.

Select the **Preset position** name from the list. The camera will move to the preset position that you have stored in memory using the Preset position menu.

Others panel
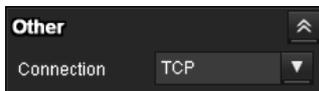
(The **Other** panel is displayed in the case of an MPEG4 or H.264 image.)

You can switch between TCP and UDP (Unicast/Multicast).

Each click switches the transmission mode of the video data between TCP mode, Unicast mode, and Multicast mode (page 27).

Monitor image

The image shot by the camera is shown here.
There are two modes for on-screen pan/tilt/zoom operation using a mouse: Area zoom mode and Vector dragging mode.
In the Area zoom mode, clicking will pan or tilt the camera towards the center of the image, and will move the camera in the direction that displays the area selected by the operator and zooms in at the same time. The operator can choose a part of the image to view and zoom in by surrounding an area with a frame by dragging the mouse.
In the Vector dragging mode, the camera pans or tilts in the dragged direction. How long you drag the mouse determines the speed. Releasing the button on the mouse after dragging stops the panning or tilting of the camera. You can also use the camera control panel bar to pan or tilt.
The zoom operation using the mouse wheel is available in all modes.

Plug-in free viewer

Main viewer using Plug-in free viewer

Display sample:

Camera list   Control bar   Monitor screen

Monitor screen

There are two modes for on-screen pan/tilt/zoom operation using a mouse: Area zoom mode and Vector dragging mode. A control bar is displayed on the screen. In the Area zoom mode, clicking will pan or tilt the camera towards the center of the image, and will move the camera in the direction that displays the area selected by the operator and zooms in at the same time. The operator can choose a part of the image to view and zoom in by surrounding the area with a frame by dragging the mouse.
In the Vector dragging mode, the camera pans or tilts in the dragged direction. How long you drag the mouse determines the speed. Releasing the button on the mouse after dragging stops the panning or tilting of the camera. You can also use the tool bar to pan or tilt.
The zoom operation using the mouse wheel is available in all modes.

Control bar

The following operation buttons are available.

▼ Setting
    You can set the streaming method, image size, frame rate, PTZ operation mode, trigger selection and image codec.

► Streaming start button
    Starts streaming. (Appears while stops streaming.)

❙❙ Streaming stop button
    Stops streaming. (Appears while streaming.)

⏎ Trigger run button
    Runs the selected trigger.
    (Displayed only when **Viewer mode** from **User menu** (page 60) is set to **Full**, and one or more triggers are enabled in the **Trigger menu** (page 71).)

P Preset
    Select a preset position to move the camera to the registered preset position.
    (Displayed only when a camera preset position is registered.)

⊡ Save still image button
    Captures still images taken by the camera and saves them to the computer.

◁)) Audio output volume slider
    Use the slider to adjust the volume. Clicking the button will stop sound output.

> **Note**
>
> This unit is not equipped with audio functions.

■ Control waiting time and control time for exclusive control

⚙ Exclusive control button

Camera list

The camera list is displayed when **Camera list** is set to **On** in the Viewer menu, and at least one camera is registered.

Using SolidPTZ function

You can operate the camera by using the SolidPTZ function, which provides panning, tilting and zooming by adjusting the position and zooming ratio from the maximum image size, without moving the camera. Maximum image size for SNC-CH110/DH110/ DH110T is 1280 × 960. For SNC-CH210/DH210/ DH210T, maximum image size is 2048 × 1536 when **resolution** is selected in **SolidPTZ Priority** (page 41), and 1024 × 768 when **Frame rate** is selected.
There are three modes of camera operation: **Area zoom mode**, **Vector dragging mode** and **PTZ Control bar**.
You can control pan/tilt and zoom in either mode.
The available functions for the camera operation modes vary according to the viewer display. The available functions are as follows:

	ActiveX viewer	Plug-in free viewer		
		JPEG	JPEG/ FLASH	ActiveX
Operation from control panel	○	×	×	×
Area zoom	○	○	○	○
Vector dragging	○	○	○	○
PTZ control bar	×	○	○	×

> **Notes**

- Pan/Tilt limitation
  The SolidPTZ function controls streaming by cropping or reducing a maximum size image.
  Thus, the more the camera zooms out, the less area to be panned or tilted, and becomes unavailable at the WIDE setting.
- Zoom
  The SolidPTZ function enables you to display an area of the cropped image from the maximum image size, when zoomed in at the TELE setting.
  And the whole area shot in the maximum image size will be displayed if the camera is zoomed out at the WIDE setting.
  The SolidPTZ function's zoom is performed digitally; therefore, some deterioration in image quality may be observed at the TELE setting.

Controlling via the control panel (Operation common to Area zoom mode and Vector dragging mode)

You can operate the camera direction, zoom, and focus by using the control panel for the monitor image currently displayed.
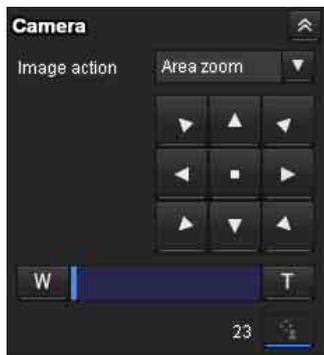
Pan/Tilt control

Click the arrow button in the direction in which you want to move the camera. Keep it pressed to move the camera continuously.
To return to the home position, click ⬚ .

Zoom control

Click W to zoom out, and click T to zoom in.
Zooming continues while the button remains pressed.

Panning and tilting by clicking the monitor image (Area zoom mode only)

Click on the monitor image, and the camera moves so that the clicked portion is positioned at the center of the display.
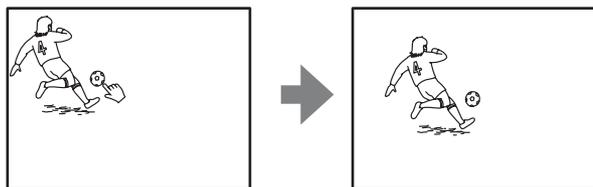
Panning, tilting and zooming by specifying the area (Area zoom mode only)

Click and hold the left button of the mouse on the monitor image, and drag the mouse diagonally to draw a red frame around the portion you want to enlarge. The camera moves so that framed portion is positioned at the center of the display and is zoomed in.
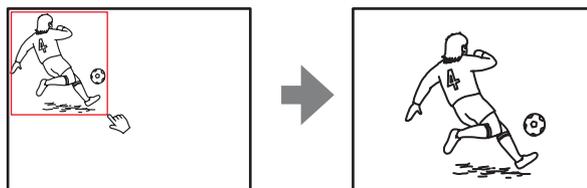
Note

When the specified area is zoomed in, the center may be shifted or some portion of the image may appear out of the monitor image section. In this case, click the point you want to move to the center or click the arrow button on the camera control panel.

Panning and tilting by dragging the screen (Vector dragging mode only)

When you click on the starting point on the image and drag to the end point, the camera pans/tilts in the direction of the arrow from the starting point to the end point. The speed of operation is determined by the length of arrow. Releasing the button on the mouse stops the panning/tilting of the camera.

Moving the camera to a preset position (Common operations in Area zoom and Vector dragging modes)

Select a preset position name from the **Preset position** panel. The camera will move to the preset position that you have stored in memory using the Preset position menu (page 61).
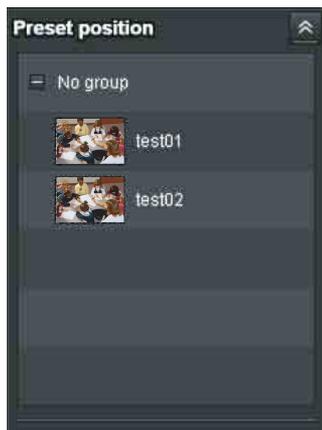
Using pan/tilt/zoom operations with the displayed control bar (PTZ Control bar only)

Pan/Tilt operations

Click the arrow of the direction you wish to move the camera. Continue clicking on the arrow to keep moving the direction of the camera.

Zoom operation

Click ▬ to zoom out, click ✚ to zoom in. The zoom operation continues while you are clicking on the button.

Controlling the Camera on a Full Image

When the camera is in controllable condition, the full image appears on the panorama panel.
The full image is the still image of entire area to be shot by the camera in reduced-sized image. By clicking on the full image, the selected location appears on the panorama panel.

To create a full image

Create the full image with **Capture full image** in the Initialize tab of the System menu. See page 37 for details.

Tip

Be sure to recreate the full image if you move the camera position, invert the image or change the layout around the camera.

To display a specified position on the monitor

1 Create the full image and display on the monitor.

2 Click the potion you want to see on the full image. The current specified position appears on the monitor screen.
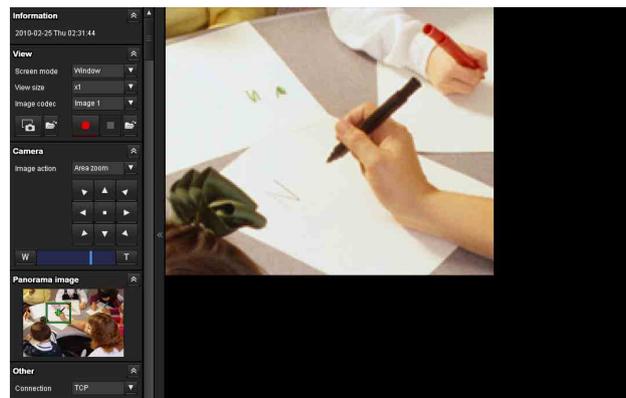
Using the Trigger Button

You can execute various functions by clicking their respective buttons on the Trigger panel.

Sending a monitor image via e-mail

You can send a captured still image by attaching it to an e-mail.
To use this function, you need to make **e-Mail (SMTP)** active and set the address in the Trigger menu of the Administrator menu properly (page 71).

1 Click **e-Mail (SMTP)** on the Trigger panel.
The still image of the time you click is captured, and your e-mail with the image file attached is sent to the specified mail address.

Sending a monitor image to an FTP server

You can send a captured still image to the FTP server. To use this function, you need to make FTP active and set the address in the Trigger menu of the Administrator menu properly (page 72).

1 Click **FTP client** on the Trigger panel.
The still image of the time you click is captured, and the image file is sent to the FTP server.

Switching TCP/UDP Transmission Mode

You can select TCP or UDP as the communication port for video data.
This function can be used when Mode (video codec mode) is set to **MPEG4** or **H.264** and the ActiveX viewer is used.

Notes

- The function may not operate correctly if you use personal firewall software or antivirus software on your computer. In that case, disable the software or select the TCP mode.
- If you are using Windows XP Service Pack 2 or later, Windows Vista or Windows 7, disable "Windows Firewall". For details, see "Configuring Windows Firewall" in "When using Windows XP Service Pack 2 or later" on page 9, "Configuring Windows Firewall" in "When using Windows Vista" on page 11, or "Configuring Windows Firewall" in "When using Windows 7" on page 14.

1 Select **TCP, Unicast** or **Multicast** from the **Connection** drop-down list in the Others panel.

TCP: This is normally selected.
When **TCP** is selected as the communication port, HTTP communication is adopted for video communication.
HTTP is the protocol used for reading the usual Web page.
In an environment capable of reading Web pages, you can watch video by selecting the TCP port.

Unicast: When **Unicast** is selected as the communication port, RTP (Real-time Transport Protocol) is adopted for video communication. Since RTP is the protocol for running video data, the video playback is smoother than when TCP (HTTP) is selected. If a firewall is installed between the camera and the computer, or depending on the network environment, video may not be played back properly when **Unicast** is selected. In this case, select **TCP**.

Multicast: This protocol is selectable when **Multicast streaming** (page 43) is **On**. When **Multicast** is selected as the transmission port, RTP (Real-time Transport Protocol) and UDP multicast techniques are adopted for video transmission. By selecting it, the network transmission load of the camera can be reduced. If a router that does not correspond to a multicast or firewall is installed between the camera and the computer, video may not be played back properly. In this case, select **TCP** or **Unicast**.

Using the System Utility

You can download system utility from the tools tab on the main menu.
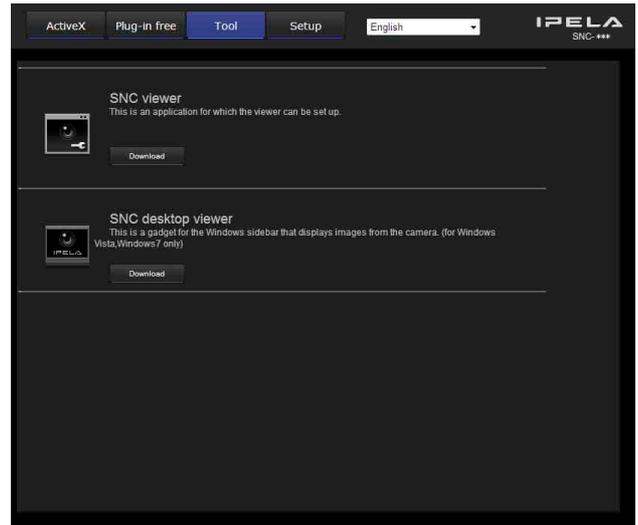
To use the utility, click **Download** to begin download.

SNC viewer

SNC viewer is an application which allows you to set the initial state of the viewer.

Installing the SNC viewer

1 Execute the downloaded SNCViewer.msi file.

2 Install the SNC viewer following the instructions on the wizard.
When the license agreement policies are displayed, agree after reading them carefully and install the SNC viewer.

Using the SNC viewer

Click **SNC viewer** in the control panel.

Connection tab
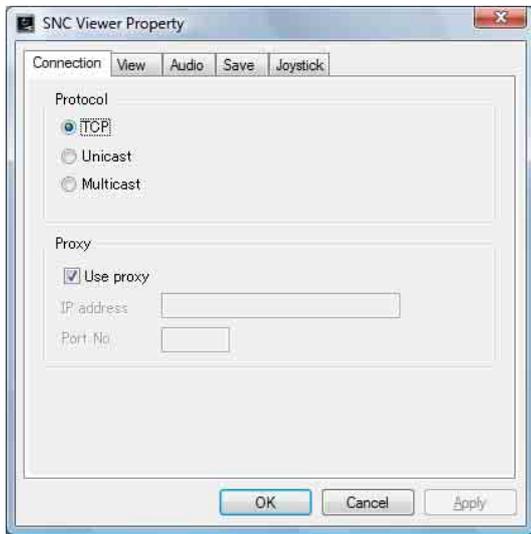
You can set the connection method.
Select the start-up connection from: **TCP**, **Unicast**, and **Multicast**.
If TCP connection is selected, you can configure proxy settings by selecting **Use proxy**.

View tab
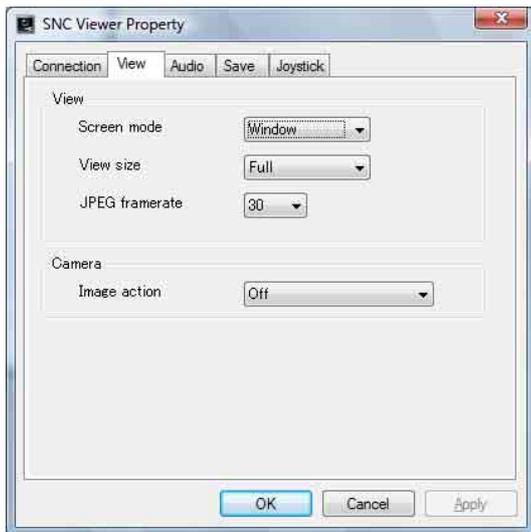
Screen mode
You can select **Window** or **Full**.

View size
You can select the view size.

JPEG framerate
You can set the frame rate for JPEG.

Image action
Select from the image operation modes **Area zoom**, **Vector dragging** and **Off**.

Audio tab

Volume
Muting: Select this option for Muting the sound at start-up.
Use the slide bar to set the volume for start-up sound output.

Mic
Muting: Select this option for Muting the microphone sound at start-up.
Use the slide bar to set the volume for start-up microphone input.

Note

This unit is not equipped with audio functions.

Operating the Camera

Save tab
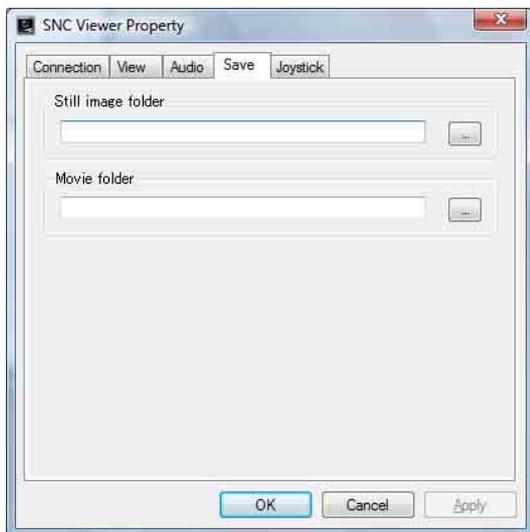
Specify a folder to save the still images and movies to.

Note

When using the operating system of Windows VISTA or Windows 7, you can not save video if "Enable Protected Mode" is checked in the Control Panel-Internet Option-Security.

Joystick tab
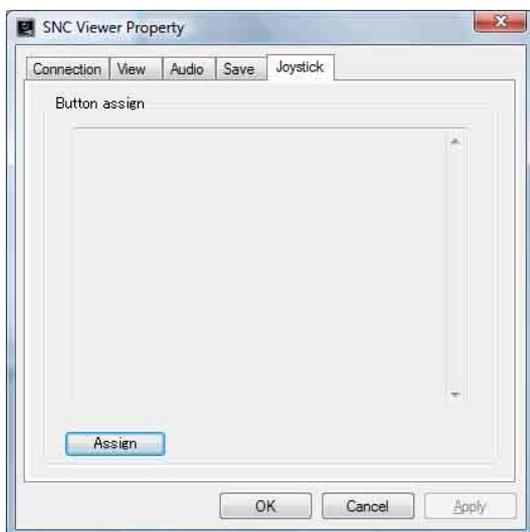
You can assign the joystick buttons here.

SNC Desktop viewer

The gadget that displays the camera image on the side bar of Windows Vista or Desktop in the case of Windows 7.

Installing the SNC desktop viewer

1 Click **Download**.
When the license agreement policies are displayed on the SNC desktop viewer download screen, agree after reading them carefully and download the SNC desktop viewer.

2 Execute the downloaded SncDesktopViewer.gadjet file.

Using the SNC desktop viewer

When installation is finished, SNC desktop viewer is displayed on the side bar of Windows Vista or Desktop in the case of Windows 7.
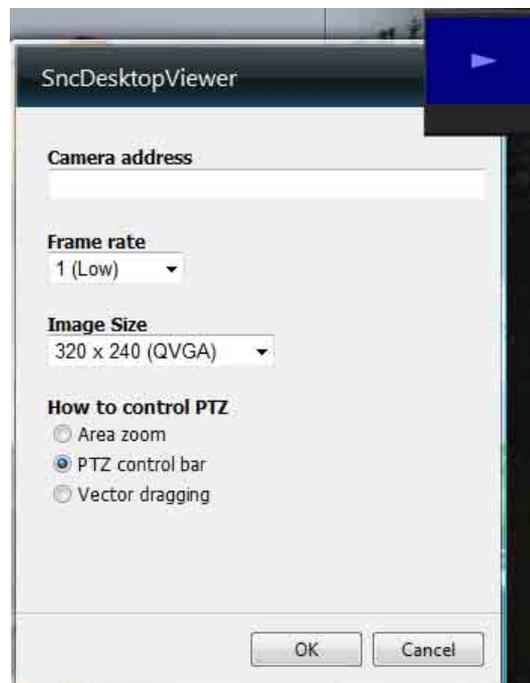
Camera address

Set the IP address for the camera to display on the Gadget.

Frame rate

Select the frame rate for the image to display on the Gadget.

Image size

Select the image size for the image to display on the Gadget.

How to control PTZ
Select the PTZ operation mode for the Gadget screen
from the options **Area zoom**, **PTZ control bar**, and
Vector dragging.

Click ⊠ (Exit) to exit Gadget.
When you click 🔍 (Set), you will see the following
setting screen.

> **Tip**
>
> The operation mode of SolidPTZ has been changed for
> this device.

This section explains how to set the functions of the camera by the Administrator.
For details about monitoring the camera image, see "Operating the Camera" on page 19.

This section explains the basic operations and each option of the Administrator menu.

Note on the display of menu options
The setting menus of this unit will clearly display only the setting options that you can currently select. Grayed out options cannot be selected.

Basic Operations of the Administrator Menu

You can use the Administrator menu to set all functions to suit the user's needs.
Click **Setting** in the viewer to display the Administrator menu.

How to set up the Administrator menu

1 Log in to the homepage to display the viewer.
For details, see "Logging in as a user" on page 20.

2 Click **Setting** on the main menu.
The authentication dialog appears. Enter the user name and password for Administrator.
The user name "admin" and password "admin" are set at the factory for the Administrator.

The Administrator menu appears.
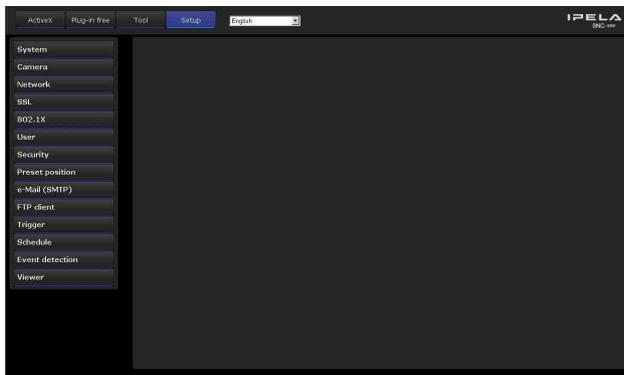
3 Click the menu name (example: System) on the left side of the Administrator menu.
The clicked menu appears.

Example: "System" menu

4 Select the required tab above the menu, and set each setting option in the tab.

Example: "Date & time" tab of "System" menu
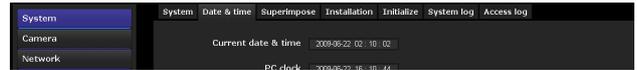
See pages 34 to 78 for details of the menu tabs and setting options.

5 After setting, click **OK**.
The settings you have made become active.

Click **Cancel** to nullify the set values and return to the previous settings.

Buttons common to every menu
The following buttons are displayed on all the menus.
The functions of the buttons are the same on every menu.

Click this button to confirm the settings.

Click this button to nullify the set values and return to the previous settings.

General notes on menus
• One-byte katakana character is not valid for any text field, such as User name.
• After changing a setting on a menu, wait at least 10 seconds before turning off the power of the camera. If the power is turned off immediately, the new setting may not be stored correctly.
• If the camera settings are changed while watching the main viewer, some settings cannot be restored. To reflect the change on the opening main viewer, click **Refresh** on the Web browser.

Configuration of the Administrator menu
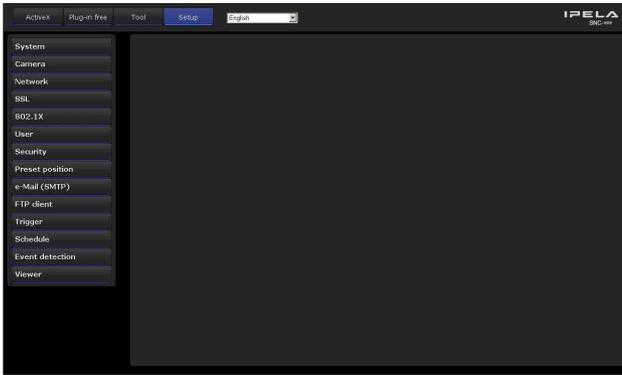
System
Displays the System menu. ("Configuring the System — System Menu" on page 34).

Camera
Displays the Camera menu for setting the camera image. ("Setting the Camera Image — Camera Menu" on page 38).

Network
Displays the Network menu for setting the network connection. ("Configuring the Network — Network Menu" on page 44).

SSL
Displays the SSL menu for performing SSL communication between the client device and camera. ("Setting the SSL function — SSL Menu" on page 49)

802.1X
Displays the 802.1X menu for connecting the camera to a network configured in compliance with the 802.1X standard for port authentication. ("Using the 802.1X Authentication Function — 802.1X Menu" on page 54)

User
Displays the User menu for setting the log in user name and password. ("Setting the User — User Menu" on page 60)

Security
Displays the Security menu for specifying a computer that is allowed to connect to the camera. ("Setting the Security — Security Menu" on page 61)

Preset position
Displays the Preset position menu to register a position you want to save. "Tour function," which rotates the registered positions, is also set here. ("Saving the Camera Position and Action — Preset position Menu" on page 61)

e-Mail (SMTP)
Displays the e-Mail (SMTP) menu for sending an e-mail. ("Sending an Image via E-mail — e-Mail (SMTP) Menu" on page 64)

FTP client
Displays the FTP client menu for sending an image file to an FTP server. ("Sending Images to FTP Server — FTP Client Menu" on page 68)

Trigger
Displays the Trigger menu for designating the operation to execute when you run a trigger. ("Setting the Operations from the Viewer — Trigger Menu" on page 71)

Schedule
Displays the Schedule menu for the e-Mail (SMTP) function, FTP client function, etc. ("Setting the Schedule — Schedule Menu" on page 72)

Event detection
Displays the setting menu for all built-in detection functions. ("Setting the Sensor input/Camera tampering detection/Motion detection — Event detection Menu" on page 73)

Viewer
Displays the Viewer menu from which you can select the viewer to use and configure advanced settings. ("Configuring the Viewer — Viewer Menu" on page 76)

Configuring the System
— System Menu

When you click System in the Administrator menu, the System menu appears.
Use this menu to perform the principal settings of the software.
The System menu has seven tabs: **System**, **Date & time**, **Superimpose**, **Installation**, **Initialize**, **System log** and **Access log**.

System Tab
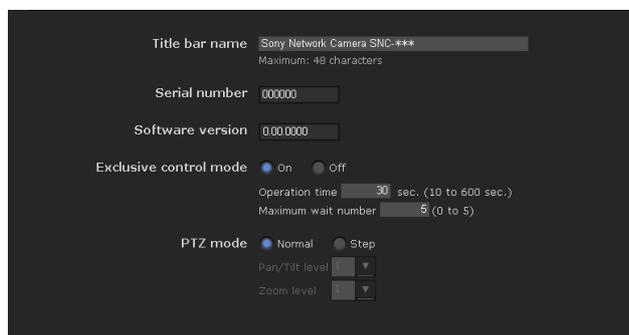
Title bar name

Type a name of up to 48 characters to be displayed on the title bar. The characters typed here are displayed on the title bar of the Web browser.

Serial number

The serial number of the camera is displayed.

Software version

The software version of this camera is displayed.

Exclusive control mode

Controls the authority to operate pan, tilt, zoom and some other functions of the camera.

On: Only one user has control authority. Set the operation time for one user in **Operation time**.
If a user tries to operate a function during operation by another user, the authority is controlled by the settings of **Operation time** and **Maximum wait number**.
Off: Multiple users can control pan, tilt and zoom at the same time. When multiple users control these functions at the same time, the last operation has priority.

Operation time

Sets the time length for a user who has control authority. The selectable range is from **10** to **600** seconds. This is effective when **Exclusive control mode** is set to **On**.

Maximum wait number

Sets the number of users who are permitted to wait for their turn for control authority during operation by one user. The selectable number is from **0** to **5**. This is effective when **Exclusive control mode** is set to **On**.

> **Notes**
>
> - To use **Exclusive control mode**, the date and time of this unit and the connected computer must be set correctly first.
> - To use **Exclusive control mode**, do not disable the Web browser Cookie. If it is disabled, this mode cannot be used.
> - When you change the **Exclusive control mode** setting, click **Refresh** on the Web browser to reflect the change when opening the main viewer page.

PTZ mode

Select the pan/tilt control mode using the 8-direction arrow buttons (page 22) and the zoom control mode using the W / T buttons (page 22). Select **Normal** or **Step**.

Normal: When you click the mouse button, the camera starts panning, tilting or zooming, and the operation continues while you hold down the mouse button. To stop the operation, release the mouse button.
Step: Each time you click the mouse button, the camera moves (pans, tilts or zooms). If you keep the mouse button held down for more than 1 second, the operation mode is temporarily changed to **Normal**. When you release the mouse button, camera operation stops and the **Step** mode is restored.

When you select **Step**, **Pan/Tilt level** and **Zoom level** are selectable.

Pan/Tilt level: Select the camera transition level from **1** to **10** by clicking the 8-direction arrow buttons for panning/tilting. Selecting **10** provides the maximum transition level.
Zoom level: Select the camera transition level from **1** to **10** by clicking W / T for zooming. Selecting **10** provides the maximum transition level.

OK/Cancel

See "Buttons common to every menu" on page 32.

Date & time Tab
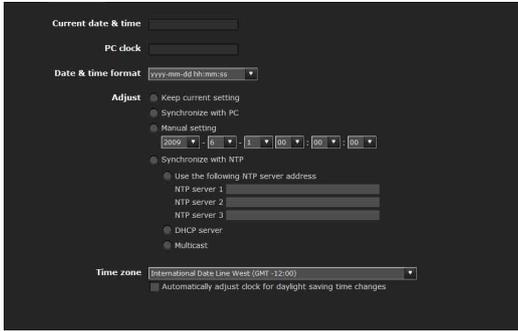
Current date & time

Displays the date and time set on this unit.

> **Note**
>
> After you have purchased the camera, be sure to check the date and time of the camera and set as necessary.

PC clock

Displays the date and time set on your computer.

Date & time format

Select the format of date and time to be displayed in the main viewer from the drop-down list.
You can select the format between **yyyy-mm-dd hh:mm:ss** (year-month-day hour:minutes:seconds), **mm-dd-yyyy hh:mm:ss** (month-day-year hour:minutes:seconds), and **dd-mm-yyyy hh:mm:ss** (day-month-year hour:minutes:seconds).

Adjust

Select how to set the day and time.

Keep current setting: Select if you do not need to set the date and time.
Synchronize with PC: Select if you want to synchronize the camera's date and time with the computer.
Manual setting: Select if you want to set the camera's date and time manually.
Select the year, month, date, hour, minutes and seconds from each drop-down list.
Synchronize with NTP: Select if you want to synchronize the camera's date and time with those of the time server called NTP server (Network Time Protocol).
Set the NTP server when **Synchronize with NTP** is selected.

Use the following NTP server address: Synchronize with the selected NTP server address.
NTP server 1: Enter the first choice for NTP server address.
NTP server 2: Enter the second choice for NTP server address.

NTP server 3: Enter the third choice for NTP server address.

DHCP server: Select DHCP server when you need to get NTP server information from DHCP server.
Multicast: Select Multicast when you search for an NTP server with Multicast.

Time zone

Set the time difference from Greenwich Mean Time in the area where the camera is installed.
Select the time zone in the area where the camera is installed from the drop-down list.
For Japan, select "**Osaka**, **Sapporo**, **Tokyo (GMT+9:00)**"

Automatically adjust the clock for daylight saving time changes

When selected, the clock is automatically adjusted according to the daylight saving time of the selected time zone.

> **Note**
>
> If the time zone selected in **Time zone** is different from that set on the computer, the time is adjusted using the time zone difference and set on the camera.

OK/Cancel

See "Buttons common to every menu" on page 32.

Superimpose Tab

Select whether to superimpose the camera ID, date/time and other information on an image or not. A still image can be also superimposed.
You can select whether to superimpose on Image 1 and Image 2 or not, set the font size and configure each displayed item.

> **Note**
>
> The superimpose setting for Image 1 is applied to Image 2 in the following conditions.
> Codec information is not displayed.
> - Image 1 and Image 2 are the same size and larger than 640 × 480.
> - When **Cropping** is set to **On** in the Camera menu, either vertical or lateral size of the cropped image is larger than that of 640 × 480.
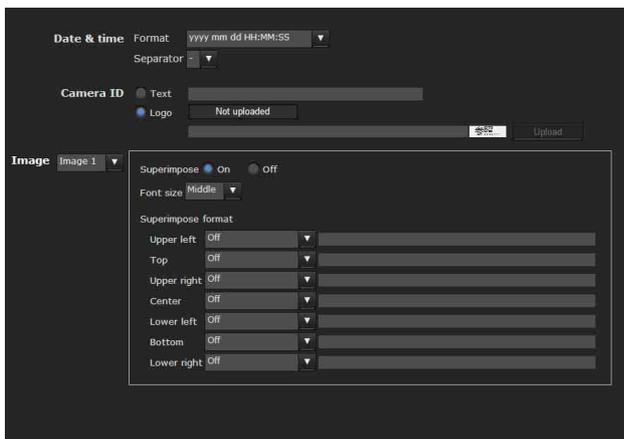
Date/time

Set the format of date/time and the separator. These settings are applied to both Image 1 and Image 2.

Camera ID

Select **Text** or **Logo** to display Camera ID.
You can modify the **Text** string and upload an image file you want to use for **Logo**. However, both **Text** and **Logo** cannot be used at the same time. Camera ID is applied to both Image 1 and Image 2.
Images that can be used as a logo should be in GIF89a format, and should not support the GIF animation or transparent GIF format. The image size can be up to 640 × 120. The number of pixels horizontally should be an even number. The maximum file size can be approximately 50 KB.

Note

If the image size of the logo is larger than the image, it cannot be displayed.

Image

Select whether to superimpose on Image 1 and Image 2 or not, set the font size and configure each item that display position is assigned.

Superimpose

On/Off: When using the Superimpose function, select **On**.
Font size: Set the font size.

Superimpose format

Set the items to superimpose according to the displayed position. Available items are as follows:
• **Off:** Set not to superimpose.
• **Text:** Set to display a string that you want. You can enter characters in the right free space.
• **Date & time:** Set to display date and time.
• **Camera ID:** Set to display Camera ID.
• **Codec:** Set to display the bit rate and frame rate.

• **Zoom ratio:** Set to display the zoom ratio.
• **Camera direction:** Set to display the name of a preset position.
• **Event:** Set to display an event record.

Notes

• The items except for **Off** and **Text** cannot be set at the same time.
• Depending on the length of the string you enter in **Text**, the string display may crossover the other item. In this case, change the display position or modify the string.

OK/Cancel

See "Buttons common to every menu" on page 32.

Installation Tab

You can perform settings related to installation.

Aspect ratio

Select an aspect ratio for the image from either **4:3** or **16:9** for Image 1.
When you change this setting, the selectable value of the image size of Image 1 in Video codec tab (page 40) is changed.

Notes

• When **Aspect ratio** is changed, this unit restarts. It takes about 2 minutes to restart.
• When **Aspect ratio** is set to **16:9**, **SolidPTZ** cannot be set to **On**.
• When **Aspect ratio** is changed, the following settings return to default.
  – Video codec tab.
  – Position (all preset position will be cleared).
  – Motion detection tab (except the detection setting for the maximum size).

Eflip

You can display flip vertical images on the computer.
Select **Off** when you hang the camera from a ceiling.
Select **On** when you install the camera on a rack, etc.

Note

Even if the **On/Off** setting of the inverted image is switched, the thumbnail set in the panorama image (or preset setting) will not be inverted. To invert the image, make the setting again.

Monitor out

You can configure the output setting for the monitor output terminal of this unit. Select **On** to output an NTSC or PAL signal.

Notes

- **Monitor out** is used when you install this unit to adjust the angle of view, etc. Be sure to set **Off** and unplug the AV cable when you do not use this function.
- Be aware that the system performance may be influenced, if monitor out is set to on.
- The output signal format is determined according to the setting of the camera's **NTSC/PAL switch**.
- Motion detection function is not available when Monitor out is set to **On**.

OK/Cancel

See "Buttons common to every menu" on page 32.

Initialize Tab
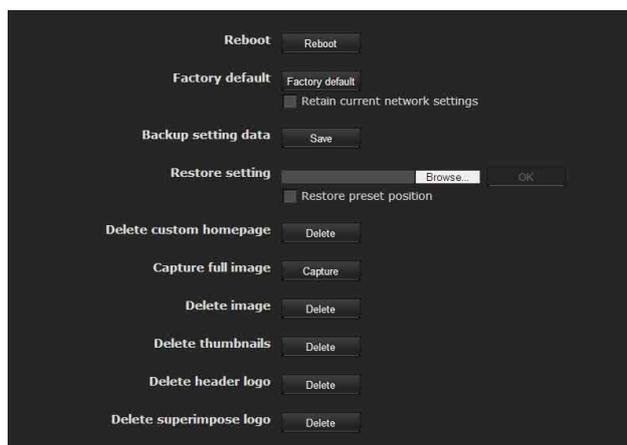
Reboot

Used when rebooting the camera.
Click **Reboot**, and the message "This System will be rebooted. Are you sure?" appears. Click **OK** to reboot the camera. It takes about two minutes to restart.

Factory default

Resets the camera to the factory settings.

Retain current network settings

When this item is checked, only the current network settings will be retained after reset.
Click **Factory default**, and the message "Setup data will be initialized. Are you sure?" appears.
When you click **OK**, the network indicator on the camera starts to blink. After adjustments of the default settings have finished, the camera reboots automatically. Do not turn off the camera until the camera reboots.

Tip

The camera can also be reset to the factory settings by turning on the power of the camera while pressing the reset button on the camera. For details, see the supplied Installation Manual.

Backup setting data

Saves the setting data of the camera in a file.
Click **Save**, and follow the instructions on the Web browser to specify the folder and save the setting data of the camera.
The file name preset at the factory is "snc-ch210.cfg" for SNC-CH210.

Restore setting

Loads the stored setting data of the camera.
Click **Browse** and select the file in which the setting data is stored. Click **OK**, and the camera is adjusted according to the loaded data, and restarted.

Restore preset position

If you select this, the stored setting data of the camera and the preset position data are loaded.

Notes

- With **Restore setting**, some items in the Network menu (page 44) cannot be restored.
- When **Restore preset position** is selected, it may take some time to load the setting data.
- The following items cannot be stored or restored with **Backup setting data** or **Restore setting**.
  – a homepage created using Custom Homepage of SNC toolbox
  – a client certificate and CA certificate to be used in the 802.1X authentication function
  – Header logo
  – superimpose logo

Delete custom homepage

Click **Delete** to delete the homepages recorded in the flash memory of the camera with Custom Homepage of SNC toolbox (page 84).

Capture full image

When you click **Capture**, a full image covering the entire shooting range is shot and saved to the camera. The full image is captured regardless of the image size and crop settings.

Note

Main viewer image may be interrupted or image and/or audio files may not be created correctly during image capturing.

Delete image

By pressing **Delete**, you can delete the full image recorded in the camera.

Delete thumbnails

Click **Delete** to delete the thumbnails set in the Preset Setting menu.

Delete header logo

Click **Delete** to delete the header logo set in the Viewer menu.

Delete superimpose logo

Click **Delete** to delete the superimposed logo, set in the camera ID on the Superimpose tab of the System menu, from the camera.
To set whether to show or hide the superimpose logo, you need to configure the setting under the Superimpose tab.

System log Tab
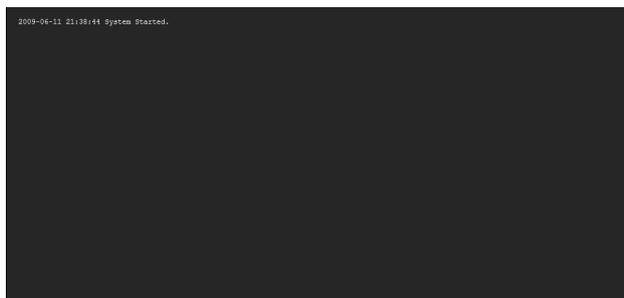
The data of the software activity of the camera is recorded in this log. It includes data that is useful if a problem occurs.
Click **Reload** to reload the latest data.

Access log Tab
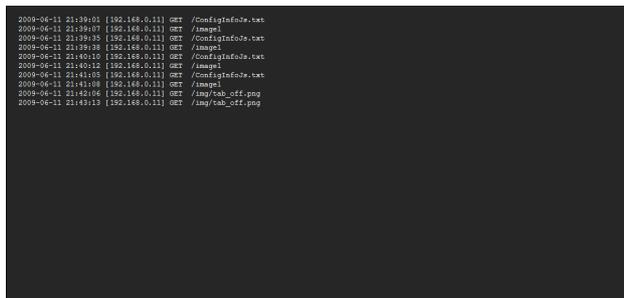
The access record of the camera is displayed.
Click **Reload** to reload the latest data.

Setting the Camera Image
— Camera Menu

When you click Camera in the Administrator menu, the Camera menu appears.
Use this menu to set the functions of the camera.
The camera menu consists of four tabs: **Picture**, **Day/Night**, **Video codec** and **Streaming**.

Picture Tab

You can set the color conditions, exposure, etc., of the camera.
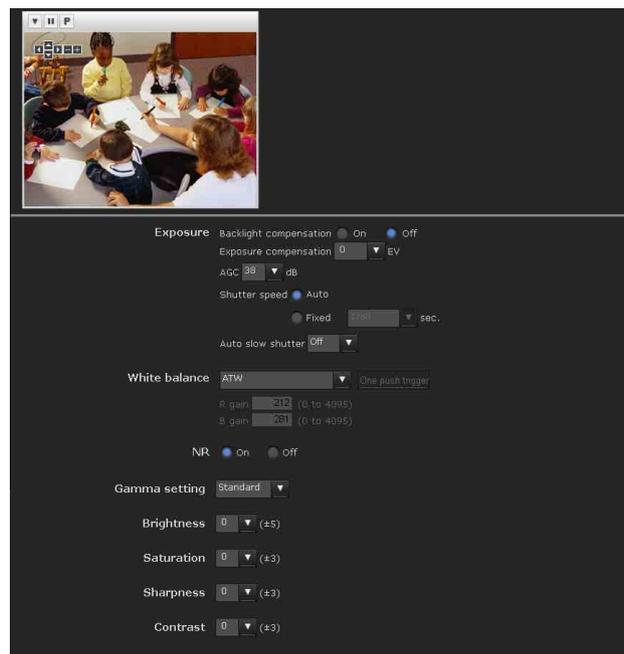
Preview screen

Preview the image and adjust the picture setting.
For details on each button, refer to the Control bar of the Plug-in free viewer (page 24).

Exposure

Adjust the settings of exposure.

Backlight compensation

Select **On** to enable the backlight compensation function.

> **Note**

If you use the backlight compensation function effectively, adjust the angle of view so that subject be centered in the image.

Exposure compensation

Select the exposure correction value from the list box to adjust the target brightness for the automatic exposure setting.

A larger value brightens the image, and a smaller value darkens the image. Selectable values are as follows:
+2.0, +1.6, +1.3, +1.0, +0.6, +0.3, 0, –0.3, –0.6, –1.0, –1.3, –1.6, –2.0 (EV)

AGC

Select the maximum gain value of the automatic exposure setting as follows.
SNC-CH210/DH210/DH210T:
38, 30, 24, 18, 12, 6, **Off** (db)
SNC-CH110/DH110/DH110T:
30, 24, 18, 12, 6, **Off** (db)

If you select **Off**, the automatic exposure setting by gain control is not performed.

Shutter speed

Select the shutter speed control mode.
Auto: Auto-controlled shutter speed automatically sets the exposure.
Fixed: Select the shutter speed from list box. Selectable shutter speed values are as follows:
1, 1/2, 1/4, 1/8, 1/15, 1/30, 1/50, 1/60, 1/100, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/10000 (sec.)

Note

Shutter speed **1** cannot be selected on the SNC-CH110/DH110/DH110T.

Auto slow shutter

The automatic exposure setting including long term exposure is set to compensate for the brightness of a scene.
Select the minimum shutter speed in the long term exposure mode from the list box.
Selectable shutter speed values are as follows:
1, 1/2, 1/4, 1/8, 1/15, 1/30 (sec.)

When **Off** is selected, the automatic exposure function cannot be set in the long term exposure mode.

Notes

- If the shutter speed is Fixed 1, 1/2, 1/4, 1/8 or 1/15, this setting will be fixed to **Off**.
- Shutter speed **1** cannot be selected on the SNC-CH110/DH110/DH110T.

Tip

Depending on the setting, the range of Auto-controlled shutter speed is as follows

Shutter speed: Fixed

- When Auto slow shutter is **Off**
  Shutter speed is fixed to the value set in **Shutter speed**.
- When Auto slow shutter is set except for **Off**
  The range of shutter speed is from the value set in **Auto slow shutter** to the value set in **Shutter speed**.

Shutter speed: Auto

- When Auto slow shutter is **Off**
  The range of shutter speed is from 1/30 sec. to 1/10000 sec.
- When Auto slow shutter is set except for **Off**
  The range of shutter speed is from the value set in **Auto slow shutter** to 1/10000 sec.

White balance

Select the White Balance mode.
ATW: Eliminating the influences caused by environmental illumination or lights, adjust the white balance automatically to reproduce original colors of the objects (approximately 2000 K to 10000 K).
ATW-PRO: Automatically adjusts the color to be closest to the image you are viewing (approximately 3000 K to 5800 K).
Fluorescent lamp: Sets the white balance to that suitable for photography under three-band fluorescent lighting with a neutral white color.
Mercury lamp: Sets the white balance to that suitable for photography under a mercury lamp.
Sodium vapour lamp: Sets the white balance to that suitable for photography under a high-pressure sodium vapor lamp.
Metal halide lamp: Sets the white balance to that suitable for photography under a metal halide lamp.
White LED: Sets the white balance to that suitable for photography under the light of white LEDs.
One push WB: The **One push trigger** button becomes active. Click the button to adjust the white balance instantly.
Manual: When this option is selected, **R gain** and **B gain** become active. Selectable gain values are from 0 to 4095.

NR

Image noise can be reduced by using the NR function. Select **Off** to disable the function.

Gamma setting

Set the gamma curve in the camera. Depending on subject or recording conditions, the following settings will be available:
Normal: This setting is suitable for many scenes.
Scene 1: This setting is suitable for shooting dark areas without losing detail of bright areas when the subject is in high contrast, such as both sunlight and shadow.

Scene 2: This setting is suitable for obtaining an effect stronger than **Scene 1**.

Scene 3: This setting is suitable for shooting dark areas brightly when the subject is in high contrast, such as both sunlight and shadow.

Scene 4: This setting does not perform gamma correction. It is suitable for picture processing of an image you shot.

Scene 5: This setting is suitable for preventing bright subjects from overexposure.

Scene 6: This setting is suitable for using a display system with a gamma characteristic of 1.8.

Brightness

Select the brightness in 11 steps, from **–5** to **+5**. Selecting **+5** provides the brightest picture.

Saturation

Select the saturation in 7 steps, from **–3** to **+3**. Selecting **+3** provides the highest image saturation.

Sharpness

Select the sharpness in 7 steps, from **–3** to **+3**. Selecting **+3** provides the sharpest picture.

Contrast

Select the contrast in 7 steps, from **–3** to **+3**. Selecting **+3** provides the highest contrast.

OK/Cancel

See "Buttons common to every menu" on page 32.

Day/Night Tab

Use this tab to set the easy day/night function of the camera.
Since this function enables noise reduction, dark monitoring images from the camera can be switched automatically to monochrome images (night mode).
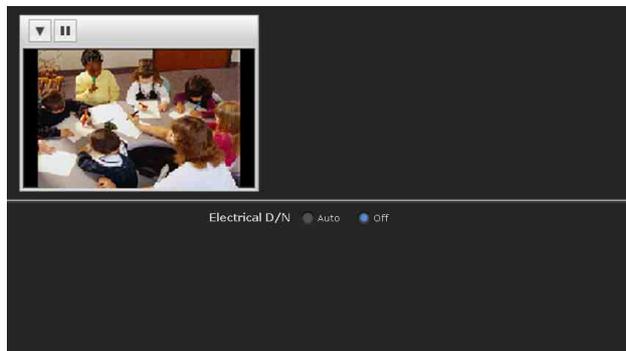
Preview screen

This screen is for monitoring images and configuring easy day/night settings.
For details on each button, refer to the Control bar of the Plug-in free viewer (page 24).

Electrical D/N

Auto: Normally works in day mode; switches automatically to night mode in a dark place.

Off: Always works in day mode.

OK/Cancel

See "Buttons common to every menu" on page 32.

Video codec Tab

Set the items of Video 1 and Video 2 respectively for the video codec.
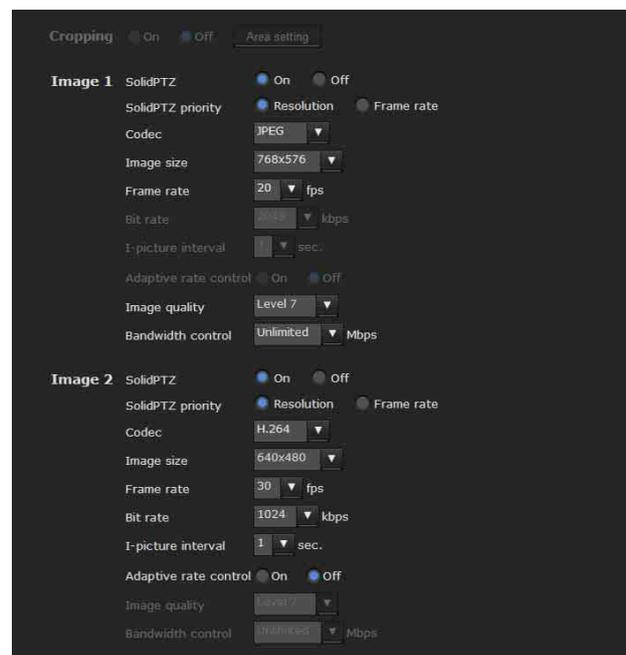
Cropping

You can crop a portion of the image and display the cropped image on the computer. Cropping reduces the transmitting data size and thus the network load, and a higher frame rate is achieved.
Select **On** to crop the image, or **Off**.

> **Notes**
>
> - The motion detection function is not available when **Cropping** is set to **On**.
> - Cropping is not available when SolidPTZ is enabled.
> - Video 2 image is cropped with the same setting as Video 1.

- The maximum size of a cropped image is 1280 × 720 (SNC-CH210/DH210/DH210T)/1280×960 (SNC-CH110/DH110/DH110T) pixels.

To crop an image

1 Set **Cropping** to **On** and click the **Area setting** button.
The area setting window appears.

2 Setting the trimming portion
Hold down the left button of the mouse on the still image and drag the cursor diagonally. The area in a red frame is the trimming portion.

3 Click **OK** at the bottom of the window.
The cropped image is displayed on the main viewer.

4 To close the image, click ❌ in the upper-right corner.

SolidPTZ
Select **ON** to enable the SolidPTZ function.

> **Notes**
> - SolidPTZ is not available when Cropping is enabled.
> - When **Aspect ratio** in the System menu- Installation tab is set to **16:9**, this function is not available.
> - When **SolidPTZ** is set to **On**, the motion detection function is not available.
> - When **SolidPTZ** of **Image 1** is set to **On**, **SolidPTZ** of **Image 2** can be set to **On**.

SolidPTZ priority
When **SolidPTZ** is set to **On**, select **Resolution** or **Frame rate**. When you use the SolidPTZ function, select **Resolution** to zoom the image clearly, or select **Frame rate** to shoot high-speed subjects.

> **Notes**
> - **SolidPTZ priority** setting is not available on the SNC-CH110/DH110/DH110T.
> - You cannot select **SolidPTZ priority** for Video 2 since the setting value for Video 1 is applied to Video 2.

Codec
Select **JPEG**, **MPEG4**, **H.264** or **OFF**. Note that Image 1 cannot be set to **Off**.

> **Notes**
> - The selectable size of images and frame rate for Image 2 may be limited depend on the setting of codec type, size of images and/or frame rate for Image 1.
> - Motion detection function is not available when Image 2 is set to other than **Off**.

Image size
You can select the size of images sent from the camera. The selectable image sizes depend on the aspect ratio setting in the installation tab. For details on selecting aspect ratio, refer to "Installation tab" in "System menu" in page 36.
The selectable image sizes for Image 1 and Image 2 are as follows:

> **Notes**
> - 2048 × 1536 image size can only be selected when the codec is JPEG.
> - Some image sizes for Image 2 cannot be configurable if the size is not the same as Image 1.
> Therefore, when an image size of Image 1 is changed, the image size of Image 2 may be changed automatically.

Aspect ratio [4:3]
○: Configurable. ×: Not configurable. △: Configurable only when Image 1 is this image size.

SNC-CH210/DH210/DH210T

	Image 1	Image 2
2048 × 1536	○	×
1920 × 1080	×	×
1600 × 1200	○	×
1680 × 1056	×	×
1440 × 912	×	×
1376 × 768	×	×
1280 × 1024	○	×
1280 × 960	○	×
1280 × 800	×	×
1280 × 720	×	×
1024 × 768	○	△
1024 × 576	×	×
800 × 480	×	×
768 × 576	○	△
720 × 576	○	△
704 × 576	○	△
720 × 480	○	△
640 × 480	○	○
640 × 368	×	○
384 × 288	○	○
352 × 288	○	○
320 × 240	○	○
320 × 192	×	○
176 × 144	○	○

SNC-CH110/DH110/DH110T

	Image 1	Image 2
1280 × 960	○	△
1280 × 800	×	×
1280 × 720	×	×
1024 × 768	○	△
1024 × 576	×	×
800 × 480	×	×
768 × 576	○	△
720 × 576	○	△
704 × 576	○	△
720 × 480	○	△
640 × 480	○	○
640 × 368	×	○
384 × 288	○	○
352 × 288	○	○
320 × 240	○	○
320 × 192	×	○
176 × 144	○	○

Aspect ratio [16:9]
○: Configurable. ×: Not configurable. △: Configurable only when Image 1 is this image size.

SNC-CH210/DH210/DH210T

	Image 1	Image 2
2048 × 1536	×	×
1920 × 1080	○	×
1600 × 1200	×	×
1680 × 1056	○	×
1440 × 912	○	×
1376 × 768	○	×
1280 × 1024	×	×
1280 × 960	×	×
1280 × 800	○	×
1280 × 720	○	△
1024 × 768	×	×
1024 × 576	○	△
800 × 480	○	△
768 × 576	×	×
720 × 576	×	×
704 × 576	×	×
720 × 480	×	×
640 × 480	×	○
640 × 368	○	○
384 × 288	×	○
352 × 288	×	○

320 × 240	×	○
320 × 192	○	○
176 × 144	×	○

SNC-CH110/DH110/DH110T

	Image 1	Image 2
1280 × 960	×	×
1280 × 800	×	×
1280 × 720	○	△
1024 × 768	×	×
1024 × 576	○	△
800 × 480	○	△
768 × 576	×	×
720 × 576	×	×
704 × 576	×	×
720 × 480	×	×
640 × 480	×	○
640 × 368	○	○
384 × 288	×	○
352 × 288	×	○
320 × 240	×	○
320 × 192	○	○
176 × 144	×	○

When SolidPTZ is set to On, selectable image sizes are as follows.
○: Configurable. ×: Not configurable. △: Configurable when **SolidPTZ** of Image 2 is set to **Off**.

	Image 1	Image 2
768 × 576	○	×
720 × 576	○	×
704 × 576	○	×
720 × 480	○	×
640 × 480	○	○
640 × 368	×	△
384 × 288	○	○
352 × 288	○	○
320 × 240	○	○
320 × 192	×	△
176 × 144	○	○

Frame rate
Set the frame rate of the image.
Selectable frame rates are as follows:
1, 2, 3, 4, 5, 6, 8, 10, 12, 15, 16, 20, 25, 30 (fps)

"fps" is a unit indicating the number of frames transmitted per second.
Configurable frame rates are as follows:

Image size [1280 × 720]

	Image 1		Image 2	
	Codec	Frame rate (fps)	Codec	Frame rate (fps)
Single codec	H.264	30	-	
	MPEG4	30	-	
	JPEG	30	-	
Dual codec	H.264	15	H.264	6
	H.264	15	JPEG	10
	H.264	15	MPEG4	8
	MPEG4	20	MPEG4	8
	MPEG4	25	JPEG	6
	JPEG	30	JPEG	10

Bit rate

Set the bit rate of MPEG4 or H.264 image transmission for a line. When the bit rate is set to a high level, better image quality can be enjoyed.
Selectable bit rates are as follows:
64, 128, 256, 384, 512, 768, 1024, 1536, 2048, 3072, 4096, 5120, 6144, 7168, 8192 (kbps)

I-picture interval

Set the I-picture insertion interval.

Adaptive rate control

This function adjusts the frame rate and the bit rate automatically so that the camera plays back a smooth image to suit the connected computer environment. If **On** is selected, the MPEG4 or H.264 image rate is automatically adjusted.

> **Notes**
>
> • The actual frame rate and bit rate may be different depending on the image size, shooting scene, or network condition.
> • When **Adaptive rate control** is set to **On**, the actual frame rate and bit rate change within the range that does not exceed the values set in **Frame rate** and **Bit rate**.

Image quality

Set the JPEG image quality.
Selectable values are from **Level 1** to **Level 10**.
When **Level 10** is selected, the best image quality is achieved.

Bandwidth control

Limits the network bandwidth for the JPEG image data output from the camera.

OK/Cancel

See "Buttons common to every menu" on page 32.

Streaming Tab

Use this tab to set the items for the transmission by unicast or multicast.
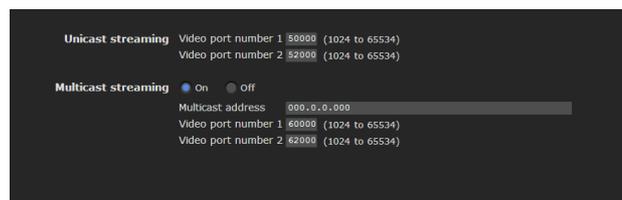
Unicast streaming

Specify the transmission port numbers of the MPEG4/H.264 video data to be used when **Unicast** is selected from the **Connection** drop-down list in the **Other** panel on the main viewer.

Video port number 1, 2

Specify the transmission port number of the MPEG4/H.264 video data. It is initially set to 50000.
Specify an even number from 1024 to 65534. Two port numbers (the number specified here and an odd number with 1 added to the specified number) are actually used for video data communication and control.
The setting for Image 1 and Image 2 apply for Video port number 1 and 2 respectively.

Multicast streaming

Set whether the camera uses multicast streaming for MPEG4/H.264 video data or not. It reduces the transmission load on the camera by having a computer of the same segment network receive the same transmitting data.
Select **On** to allow, or **Off** not to allow multicast sending.
When you select **On**, set **Multicast address** and **Video port number** properly.

Multicast address

Type the multicast address used on the multicast streaming.

Video port number 1, 2

Specify the MPEG4/H.264 video transmission port number used for the multicast streaming. It is initially set to 60000. Specify an even number from 1024 to 65534. Two port numbers (the number specified here and an odd number with 1 added to the specified number) are used for video data communication and control.
The setting for Image 1 and Image 2 apply for Video port number 1 and 2 respectively.

OK/Cancel

See "Buttons common to every menu" on page 32.

Configuring the Network
— Network Menu

When you click Network in the Administrator menu, the Network menu appears.
Use this menu to configure the network to connect the camera and the computer.
The Network menu consists of three tabs: **Network**, **QoS** and **Dynamic IP address notification**.

Network Tab

This section provides the menus for connecting the camera through the network cable.

MAC address

Displays the MAC address of this unit.

Ethernet status

Displays the current transmission rate.

Auto-MDI/MDIX

According to the port of the connected Ethernet device, automatically switches the port of the unit between MDI and MDI-X for transmission.
Displays the Ethernet port mode of the unit.

IPv4 setting

Configure the IPv4 network setting.

IP address

Configure the IP address.

Obtain an IP address automatically (DHCP): Select this option when a DHCP server is installed on the network to allow IP address assignment. With this setting, the IP address is assigned automatically.

> **Note**

When you select **Obtain an IP address automatically (DHCP)**, make sure that a DHCP server is operating on the network.

Use the following IP address: Select this option when you set a fixed IP address. With this setting, specify the **IP address**, **Subnet mask** and **Default gateway** manually.

IP address
Type the IP address of the camera.

Subnet mask
Type the subnet mask.

Default gateway
Type the default gateway.

DNS server
Configure the DNS server address.

Obtain DNS server address automatically: Select this option to obtain the IP address of DNS server automatically. It can be set only when **Obtain an IP address automatically (DHCP)** is selected in the Network tab.

> **Note**

When you select **Obtain DNS server address automatically**, make sure that a DHCP server is operating on the network.

Use the following DNS server address: Select this when you set a fixed address as the IP address of the DNS server. With this setting, specify the addresses on **Primary DNS server** and **Secondary DNS server** manually.

Primary DNS server
Type the IP address of the primary DNS server.

Secondary DNS server
Type the IP address of the secondary DNS server, if necessary.

MTU
Enter the MTU value for the Ethernet port. (1000 - 1500)
If IPv6 is enabled, the value must be 1280 or greater.

Host name

Type the host name of this unit to be transmitted to the DHCP server. This setting is valid only when **Obtain an IP address automatically (DHCP)** is selected in the Network tab.

Domain suffix

Type the domain suffix of this unit to be transmitted to the DHCP server. This setting is valid only when **Obtain an IP address automatically (DHCP)** is selected in the Network tab.

> **Note**

The domain suffix is sent to the DHCP server as FQDN (Fully Qualified Domain Name) information when **Host name** is set.

HTTP port number

Normally select **80**. If you want to use a port number other than 80, select the text box and type a port number between 1024 and 65535.

> **Note**

When you have set the **HTTP port number** to a number other than 80 in the Network menu or in SNC toolbox, access the camera again by typing the IP address of the camera on your Web browser as follows:

Example: Setting port number 8000 when IP address is 192.168.0.100
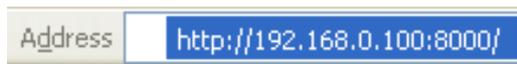
IPv6 setting

Configure the IPv6 network settings.
IPv6 can be used simultaneously with IPv4.
Only IPv6-specific details are explained here. For common details, see "IPv4 setting" on page 44.

On/Off

To use IPv6, select **On**.

Prefix

Enter the Prefix value. (0 to 128)

IPv6 MTU

Enter the MTU value for IPv6. (1280 -1500)
The value must not exceed the MTU value for the Ethernet port.

OK/Cancel

See "Buttons common to every menu" on page 32.

QoS Tab

In this tab, you can mark the data traffic packets sent from the device and configure the settings for QoS control. Rules for the types of data traffic can be created using IPv4/IPv6 address, port number, protocol, etc. A maximum of 10 rules can be registered for IPv4 and IPv6, respectively.
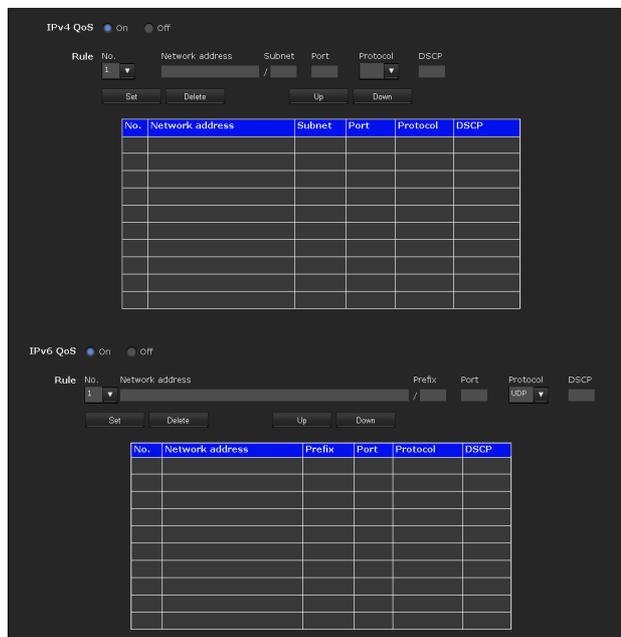
IPv4 QoS

Select **On** to configure the QoS setting for IPv4.

Rule

Used to register, edit and delete QoS.

No.

Select the number to use when registering on the QoS table.
When you select a registered number, the registered QoS information is displayed.

Network address

Enter the network address of the target on which to perform QoS.

Subnet

Enter the subnet mask values of the target on which to perform QoS.

> **Tip**

The subnet mask value represents the number of bits from the left side of the network address.

Port

Enter the port number for the data traffic of the device (e.g. HTTP:80).

Protocol
Select the protocol.

DSCP
Set a value to mark the data traffic (0 ~ 63).
This value is set in the DSCP field included in the IP header of the data traffic.

Set
Used when registering on the QoS table.
QoS is set according to the following procedure:

1 Select No. from **No.** and enter the necessary conditions for **Network address**, **Subnet**, **Protocol** and/or **Port No.**.

2 Enter values in **DSCP**.

3 Click **Set** and configure the QoS.

Delete
select **No.** to delete the setting and click **Delete**.

Up
Increases the priority of the rule.
Select a rule from the QoS table to prioritize and click **Up**.

Down
Decreases the priority of the rule.
Select a rule from the QoS table to lower its priority and click **Down**.

QoS table
Displays the list of registered QoS information. If multiple conditions match, the rule with the smallest number has priority.

IPv6 QoS

Select **On** to configure the QoS setting for IPv6.

Rule
Used to register, edit and delete QoS.

No.
Select the number to use when registering on the QoS table.
When you select a registered number, the registered QoS information is displayed.

Network address
Enter the network address of the target on which to perform QoS.

Prefix
Enter the prefix value of the target on which to perform QoS.

> **Tip**
>
> The prefix value represents the number of bits from the left side of the network address.

Port
Enter the port number for the data traffic of the device (e.g. HTTP:80).

Protocol
Select the protocol.

DSCP
Set a value to mark the data traffic (0 ~ 63).
This value is set in the DSCP field included in the IP header of the data traffic.

Set
Used when registering on the QoS table.
QoS is set according to the following procedure:

1 Select the number you want to register from **No.** and enter the necessary conditions for **Network address**, **Subnet**, **Protocol** and **Port No.**.

2 Enter values in **DSCP**.

3 Click **Set** and configure the QoS.

Delete
select **No.** to delete the setting and click **Delete**.

Up
Increases the priority of the rule.
Select a rule from the QoS table to prioritize and click **Up**.

Down
Decreases the priority of the rule.
Select a rule from the QoS table to lower its priority and click **Down**.

QoS table
Displays the list of registered QoS information. If multiple conditions match, the rule with the smallest number has priority.

> **Tip**
>
> To attain QoS of data traffic, the target device must be connected to a router or switch that supports the QoS function.

OK/Cancel

See "Buttons common to every menu" on page 32.

Dynamic IP address notification Tab — Notifying the IP Address

When **Obtain an IP address automatically (DHCP)** is selected in the Network tab, you can send notification of completion of the network settings using the SMTP or HTTP protocol.

e-Mail (SMTP) notification

Select **On** to send an e-mail when the DHCP setting is completed.

SMTP server name

Type the name or IP address of the SMTP server for sending an e-mail, using up to 64 characters.

SMTP port number

Enter a port number from 25 to 65535.
The standard port number is 25. If TLS is enabled, the standard port number for SMTPs is 465.

Use TLS

To use the encryption function by TLS, set to **On**.

> **Note**
>
> The model on sale in China does not support the TLS function.

STARTTLS

To use the encryption function by STARTTLS, set to **On**.

> **Note**
>
> The model on sale in China does not support the STARTTLS function.

Authentication

Select the authentication required when you send an e-mail.

Off: Select if no authentication is required when an e-mail is sent.
On: Select if authentication is required when an e-mail is sent. Select one of the authentication methods from the following and specify the **POP server name**, **User name** and **Password** as required.
    SMTP: Select when SMTP authentication is required.
    POP before SMTP: Select when POP before SMTP authentication is required.

> **Note**
>
> When you set **Authentication** to **On**, be sure to select **SMTP** and/or **POP before SMTP**.

POP mode

Select POP3 or APOP as the authentication method for POP authentication.

> **Note**
>
> The model on sale in China does not support APOP authentication.

Wait time after POP

Set the waiting time in **POP before SMTP** before SMTP authentication after POP authentication is completed. Timeout can be set from 0 to 10,000 msec.

POP server name

This is necessary when **POP before SMTP** is selected for **Authentication**.
Type the POP (receiving mail) server name, using up to 64 characters. Or type the IP address of the POP server. This setting is necessary when the SMTP server that sends e-mails performs authentication using the POP user account.

POP port number

Enter a port number from 110 to 65535.
The standard port number is 110. If TLS is enabled, the standard port number for POP3s is 995.

Authentication mode

Select **Login** or **CRAM-MD5** as the authentication method for SMTP authentication.

The model on sale in China does not support CRAM-MD5 authentication.

User name, Password

Type the user name and password of the owner of the mail account, using up to 64 characters. This setting is necessary when the SMTP server that sends e-mails performs authentication.

Recipient e-mail address

Type the recipient e-mail address, using up to 64 characters. You can specify only one recipient e-mail address.

Administrator e-mail address

Type the e-mail address of the camera administrator, using up to 64 characters. This is used as the reply address or the address for a system mail from the mail server.

Subject

Type the subject/title of the e-mail, using up to 64 characters.

Message

Type the text of the e-mail using up to 384 characters. (A line break is equivalent to 2 characters.) You can describe the information of the acquired IP address, etc., using the special tags mentioned below.

HTTP notification

Select **On** to output a command to the HTTP server when the DHCP setting is completed. Using this function, you can configure a useful system, for example, to view the access log stored in the HTTP server, or start an external CGI program.

URL

Specify the URL to send an HTTP request, using up to 256 characters. The URL is normally written as follows:

> http://ip_address[:port]/path?parameter

ip_address: Type the IP address or host name of the host to which you want to connect.
To enter an IPv6 address:
http:// [IPv6 address]
http:// [IPv6 address]: port
[:port]: Specify the port number to which you want to connect. If you want to use the established port number 80, you do not need to input a value.
path: Type the command.

parameter: Type the command parameter if necessary. You can use the special tags mentioned below for the parameters.

Proxy server name

When you send an HTTP request via a proxy server, type the name or IP address of the proxy server, using up to 64 characters.

Proxy port number

Specify the port number when you send an HTTP request via the proxy server. Set a port number between 1024 and 65535.

Method

Select the HTTP method **GET** or **POST**.

OK/Cancel

See "Buttons common to every menu" on page 32.

About the special tags

You can use the following five special tags to allow notification of the settings acquired by DHCP, such as an IP address. Type the tags in the parameter section of the URL that you described in the Message field of the HTTP.

<IP>

Use this tag to embed the IP address acquired by DHCP in the text or parameter.

<HTTPPORT>

Use this tag to embed the specified HTTP server port number in the text or parameters.

<MACADDRESS>

Use this tag to embed the MAC address of the interface, whose IP address was acquired by DHCP, in the text or parameter.

<MODELNAME>

Use this tag to embed the camera's model name in the text or parameter.

<SERIAL>

Use this tag to embed the camera's serial number in the text or parameter.

Setting the SSL function — SSL Menu

When you click **SSL** in the Administrator menu, the SSL menu appears.
Use this menu to configure the SSL or TLS function (called "SSL" hereafter).
The settings allows the camera to communicate with the client PC by using SSL.
SSL menu consists of the **Common** tab and **CA certificate** tab.

Notes

- The model on sale in China does not support the SSL function.
- When using the SSL function, always configure the settings after setting the date and time of the camera. If the date and time are not correctly set, it may cause browser connection problems.

Common tab
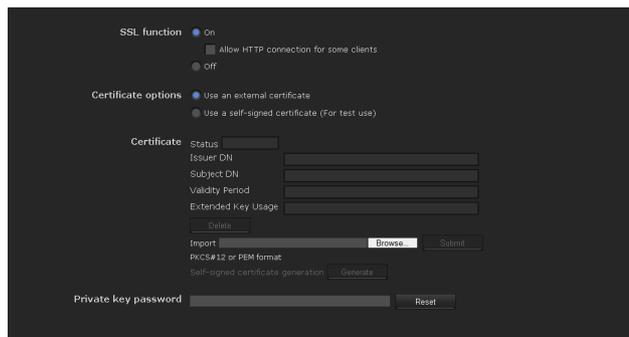
SSL function

On: Select this to use the SSL function. When **Allow HTTP connection for some clients** is selected, both HTTP and SSL connections are allowed. When **Allow HTTP connection for some clients** is not selected, only SSL connection is allowed.

When Microsoft Internet Explorer Ver.6.0 is used
When SSL session is established, 🔒 appears in the status bar on your web browser.

When Microsoft Internet Explorer Ver.7.0 Ver.8.0 is used
When SSL session is established, 🔒 appears in the right of the address bar on your web browser.

Off: Select this to not use the SSL function. Only HTTP connection is allowed with the camera.

When you use SSL connection for the first time
When you use SSL connection only with the SSL function **On**, you cannot access the camera if the SSL function does not work properly.
In this case, you must reset the camera to the factory settings. (All settings will be initialized.)
To avoid this, check that SSL connection is possible by performing the following steps.

1 Set the SSL function to **On**, and select **Allow HTTP connection for some clients**.

2 Click **OK** to close the main viewer and the setting window.

3 Display the main viewer in SSL connection. Refer to "Using the SSL function" on page 15 for connection.

4 After checking that SSL connection is possible, cancel **Allow HTTP connection for some clients** selected in step 1.

Even if the setting window or the browser is closed as SSL connection is impossible, http connection will be possible if **Allow HTTP connection for some clients** is selected. First check the setting contents of SSL tab in http connection, then check the SSL connection again.

If **Allow HTTP connection for some clients** is not selected, you will not be able to access the camera if SSL connection becomes impossible. In this case, turn on the power of the main unit while pressing the reset switch on the camera to initialize. For details, refer to the supplied Installation Manual.

Note

SSL connection will load the camera down; therefore, not all images may be downloaded, and the ✖ mark may appear when the camera accesses the setting window from the browser. In this case, reload the window. Press the F5 key on the keyboard to reload.

Certificate options

Select an installation mode of the certificate.

Use an external certificate: Uses the certificate including private key information issued by a CA. The PKCS#12 and PEM formats are supported.

Note

SSL is not available when **Certificate options-Use an external certificate** is selected, or certificate and private key password is not set properly, even if SSL is set to "**ON**"

Use a self-signed certificate (For test use): This mode uses the certificate and private key pair generated by "Generating a self-signed certificate" on page 50. Private key information corresponding to the certificate is stored in the camera.
You do not need to install an external certificate. However, you cannot execute the existence proof that is one of the SSL functions for the following reasons.
– The private key generated in the camera is self-signed by the camera.
– A prepared value is set for a distinguished name (Common name, etc.).
– The certificate is not issued by a trusted CA.
For reasons of security, we recommend using this mode only when there is no problem even if perfect security is not saved.

> **Notes**
>
> • When **Use a self-signed certificate (For test use)** is selected, the **Security Alert** dialog appears on the SSL connection with a browser.
> For details, refer to "Using the SSL function" (page 15).
> • SSL connection may be impossible due to the type of certificate installed in the camera. In this case, refer to "How to install the CA certificate" on page 52 and install.

Certificates

Import, display or delete the certificate.

To import the certificate
Click **Browse...** to select the certificate to be imported. Click **Submit** to import the certificate, and the selected file to the camera.

> **Note**
>
> The import process becomes invalid if the selected file is not a certificate or the imported certificate is not allowed.

Generating a self-signed certificate
A self-signed certificate can be generated in the camera to be used when **Use a self-signed certificate (For test use)** is selected from **Certificate options**.
Click **Generate** to generate a self-signed certificate in the camera. Clicking **Generate** again after **Generate** has been clicked once will update the self-signed certificate stored in the camera.

> **Note**
>
> Make sure to set the date and time on the camera correctly before performing this operation. If the date and time are not correctly set, it may cause browser connection problems.

To display certificate information
When the certificate has been set in the camera correctly, its information appears on **Status, Issuer DN**, **Subject DN**, **Validity Period** and **Extended Key Usage**.

Status
Shows if the status of the certificate is valid or invalid. The following statuses are recognised.

Valid: The certificate is correctly stored and set.
Invalid: The certificate is not correctly stored and set.
Possible causes are as follows:
– **Use an external certificate** is selected and the private key password included in the certificate is not specified correctly.
– **Use an external certificate** is selected and the private key password is specified in spite of the fact that the key pair in the certificate is not encrypted.
– **Use an external certificate** is selected and the key pair is not included in the certificate.
– **Use a self-signed certificate (For test use)** is selected without the self-signed certificate being generated.

> **Note**
>
> When the certificate to be imported is of PKCS#12 format and the private key password is not set correctly, <Put correct private key password> is displayed in the boxes of **Issuer DN**, **Subject DN**, **Validity Period** and **Extended Key Usage**. Specify the correct private key password to confirm the information of the certificate.

To delete the imported certificate or self-signed certificate
Click **Delete** to delete the certificate or self-signed certificate imported to the camera.

Private key password

Type the password for the private key information included in the certificate using up to 50 characters. This text box is active only when **Certificate options** is set to **Use an external certificate**.
Leave the text box blank if the private key information included in the certificate is not encrypted.
If no private key password is set in the camera, an active text field is displayed and this allows a password to be entered.
If a private key password is already set, it is displayed as an inactive text field.

Reset
To change the private key password, click this button. The current password is cleared and the password text box becomes active to allow a new password entry.

Click **Cancel** at the bottom of the menu if you want to cancel changing the private key password after clicking **Reset**. Doing so restores the other setting items in the Client certificate tab to the previous settings.

OK/Cancel

See "Buttons common to every menu" on page 32.

Note

When you click **OK** after changing SSL setting, close the main viewer and the setting window once.

CA certificate tab — Adding the CA certificate for client authentication

In this tab, you can manage the CA certificate needed for the camera to use the client authentication of the SSL function.

Note

When using the client authentication, the personal certificate must be successfully installed on the PC to use it. If this preparation cannot be performed, do not configure settings on this tab. Otherwise, you may not be able to connect to the camera.
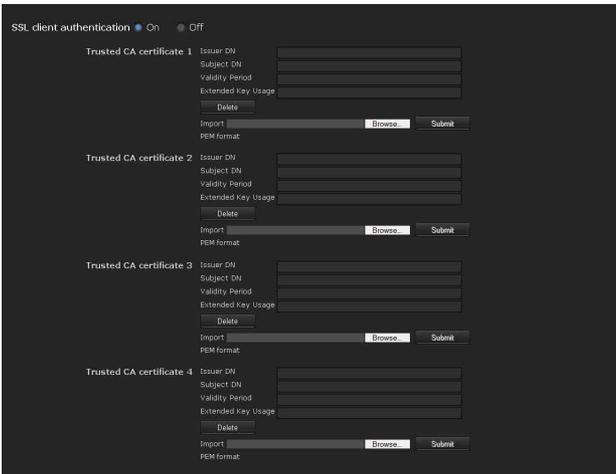
SSL client authentication

You can configure whether to enable the client authentication of the SSL function.

Trusted CA certificate 1 to 4

You can import a trusted CA certificate (route certificate, etc.) to the camera.
Up to four certificates from trusted CAs can be imported to the camera. Only PEM format is supported.

To import the CA certificate

1 Click **Browse…** to select the CA certificate to be saved in the camera.

2 Click **Submit**
The selected file will be imported to the camera.

Note

Import process will be invalid if the selected file is not a CA certificate.

To display the information of the CA certificate

When the CA certificate has been saved in the camera correctly, its information appears on **Issuer DN**, **Subject DN**, **Validity Period**, and **Extended Key Usage** for your reference.

To delete the CA certificate

Click **Delete** to delete the selected CA certificate from the camera.

Tip

To enable a client certificate, it is recommended that the settings are configured following the procedure below:

① **Import the necessary CA certificate.**

② **Set SSL client authentication to On and click OK.**

Note

When you set SSL client authentication to **On** and click **OK**, the camera will immediately operate to enable client authentication. Make sure that the personal certificate on your PC is successfully installed.

OK/Cancel

See "Buttons common to every menu" on page 32.

How to install the CA certificate

The camera may not be connected because the browser (Internet Explorer) does not display whether the certificate will be accepted or not due to the type of certificate. In this case, install the CA certificate as follows.

1 Save in the PC the certificate of CA which has signed the certificate to be installed in the camera. The extension of the certificate file is normally ".cer". Double-click this file. The following **Certificate** dialog appears.

2 Click **Install Certificate...**.
The **Certificate Import Wizard** appears.

3 Click **Next**.

4 Select **Automatically select the certificate store based on the type of certificate** and click **Next**. **Completing the Certificate Import Wizard** appears.

5 Check the contents, then click **Finish**.
The CA certificate will be installed.

To remove an installed CA certificate

1 In Internet Explorer, click in the order **Tools**, **Internet options**, **Content tab** and **Certificates**. The **Certificates** dialog appears.
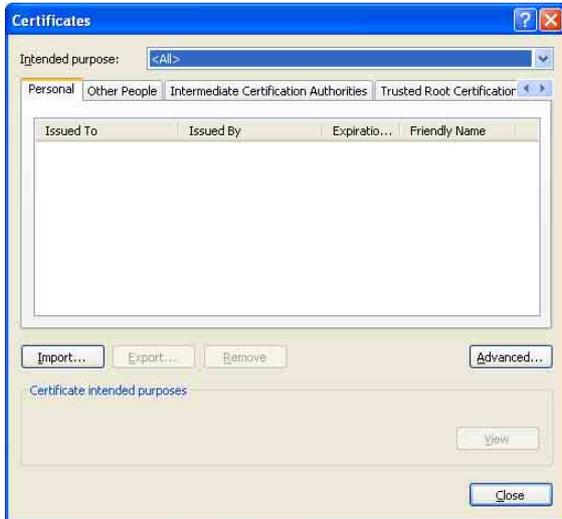
2 Select the certificate you want to remove. The CA certificate is usually stored in **Trusted Root Certification Authorities**.

3 Click **Remove**. **Do you want to delete the certificate** appears, requesting confirmation.

4 Click **Yes**. The certificate will be removed. There may be a case that a certificate cannot be removed by the steps above due to the type of certificate. Check the installation condition and remove it following the steps below.

Note

You need to log in as Administrator to perform these steps.

1 Open **Run...** of the Windows menu, then enter **mmc** and click **OK**.

2 Select **File** in the **Console 1** window and **Add/ Remove Snap-in...** (when Windows XP Professional is used) **Add/Remove Snap-in...** dialog appears.

3 Click **Add** to display **Add Stand-alone Snap-in** dialog. You need to follow this step if using Windows XP Professional.

4 Select **Certificates** from the list, then click **Add**. **Certificate Snap-in** is displayed.

5 Select **Computer account** as the certificate administrated in this Snap-in, then click **Next**.

6 Select **Local Computer** as the computer administrated in this Snap-in, then click **Finish**.

7 Close **Add Standalone Snap-in** (for Windows XP Professional only) and **Add/Remove Snap-in...** dialogs. The items for administrating **Certificates** appears in the **Console Route** window. Confirm the relevant certificate, then remove it.

Using the 802.1X Authentication Function — 802.1X Menu

When you click **802.1X** in the Administrator menu, the 802.1X menu appears.
Use this menu to configure the wired port-based authentication in compliance with the 802.1X standard. The 802.1X menu consists of three tabs: **Common**, **Client certificate** and **CA certificate**.

Notes

- To use the 802.1X authentication function, you need knowledge of the 802.1X authentication (WPA and WPA2) and digital certificate. To establish an 802.1X network, you need to configure the authenticator, authentication server and other elements. For details on these settings, refer to the manual of the corresponding equipment.
- When using the 802.1X authentication function, always configure the settings after setting the date and time of the camera. If the date and time are incorrect, port authentication may not be performed correctly.

System configuration of 802.1X network

The following figure shows a general system configuration of an 802.1X network.

Supplicant (camera)

Authenticator
(hub or router)

Authentication server + CA
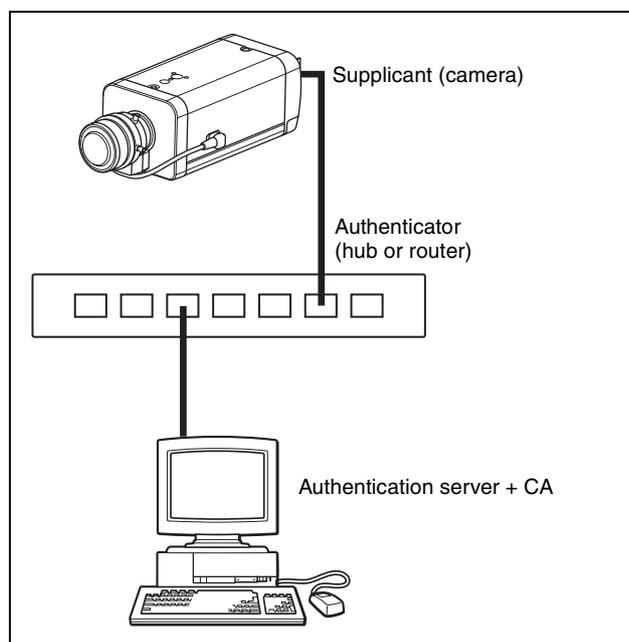
Supplicant

A supplicant is a device that connects to the authentication server to join the network. This unit serves as a supplicant in the 802.1X network. The supplicant can enter the 802.1X network after appropriate authentication by the authentication server.

Authenticator

An authenticator forwards certificate request data or response data that the supplicant or authentication server issues to the other party. Normally a hub or router serves as an authenticator.

Authentication server

An authentication server has a database of connected users and verifies if the supplicant is a valid user or not. It can also be called RADIUS server.

CA (Certificate Authority)

A CA issues and manages certificates of the authentication server (CA certificates) and user certificates. The CA is essential for certificate-based user authentication. Normally a CA is located inside an authentication server.

Note

This camera supports EAP mode in which the supplicant and the server authenticate using the certificate. This mode requires a CA to issue the certificate.

Common Tab — Basic setting of 802.1X authentication function
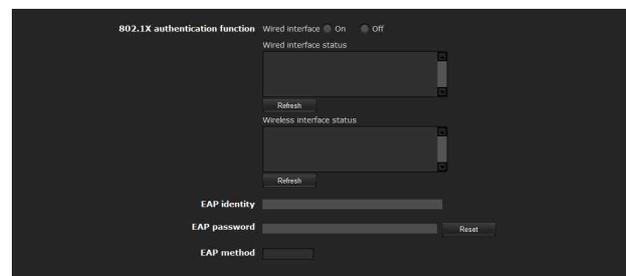
802.1X authentication function

This item is used for enabling/disabling the 802.1X authentication function for wired ports. The wired interface status can also be checked here.

Wired interface

To activate the 802.1X authentication function for wired ports, select **On**.

Wired interface status

Shows the authentication status of the 802.1X authentication function for wired ports.
Click **Refresh** to update the status.

EAP identity

Type the user name to identify the client in the 802.1X authentication server using 3 to 253 characters.

EAP password

A supplicant EAP password is needed to be inputted when PEAP is selected with EAP condition. The password can contain half-width letters and the length should be between 1 to 50.

Reset

To change the once set EAP password, click **Reset** and clear the current password. A new password can be entered.

> **Note**
>
> After you click **Reset**, if you wish to cancel the EAP password change, click **Cancel** at the bottom of the screen. This will cancel other changes made to the settings.

EAP method

You can select the authentication method used with the authentication server. This device supports TLS and PEAP.

TLS: By this method, the supplicant and the server authenticate each other using a certificate. This enables secure port authentication.
PEAP: By this method, an EAP password is used for the supplicant authentication and a certificate is used for server authentication.

OK/Cancel

See "Buttons common to every menu" on page 32.

Client certificate Tab

When TLS is selected as the EAP method, the client certificate is imported for authentication by the camera.
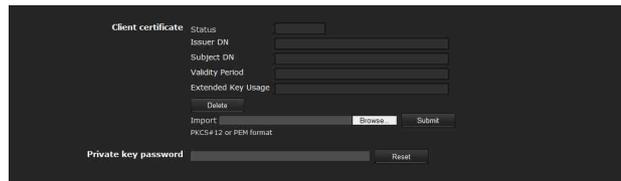
Client certificate request

Import, display or delete the client certificate.

To import the client certificate

Click **Browse…** to select the client certificate to be imported.
Then click **Submit**, and the selected file will be imported to the camera.

> **Note**
>
> The import process becomes invalid if the selected file is not a client certificate or the imported client certificate is not allowed.

To display the information of the client certificate

When the client certificate has been saved in the camera correctly, its information appears on **Status**, **Issuer DN**, **Subject DN**, **Validity Period** and **Extended Key Usage**.

Status: Shows if the status of the client certificate is valid or invalid.
    Valid means the client certificate is correctly stored and set.
    Invalid means the client certificate is not correctly stored and set.
    Possible causes of **Invalid** are as follows:
– The private key password included in the client certificate is not specified correctly.
– The private key password is specified in spite of the fact that the key pair in the client certificate is not encrypted.
– The key pair is not included in the client certificate.

Note

When the client certificate to be imported is of PKCS#12 format and the private key password is not set correctly, "<Put correct private key password>" is displayed in the boxes of **Issuer DN**, **Subject DN**, **Validity Period** and **Extended Key Usage**. Specify the correct private key password to confirm the information of the certificate.

To delete the client certificate
Click **Delete**, and the client certificate stored in the camera will be deleted.

Private key password

Type the password for the private key information included in the client certificate using up to 50 characters.
Leave the text box blank if the private key information included in the client certificate is not encrypted.
If no private key password is set in the camera, the text box is activated to allow entering of a password.
If a private key password is already set, it is displayed as hidden letters.

Reset

To change the private key password, click this button. The current password is cleared and the password text box is actived to allow new password entry.

Note

Click **Cancel** at the bottom of the menu if you want to cancel changing the private key password after clicking **Reset**. Doing so restores the other setting items in the Client certificate tab to their previous settings.

OK/Cancel

See "Buttons common to every menu" on page 32.

CA certificate Tab

You can import a trusted CA certificate (server certificate or route certificate) to the camera. Up to four certificates from trusted CAs can be imported to the camera. Only the PEM format is supported.

To import a CA certificate
Click **Browse…** to select the CA certificate to be imported.
Then click **Submit**, and the selected file will be imported to the camera.

Note

Import process becomes invalid if the selected file is not a CA certificate.

To display the information of the CA certificate
When the CA certificate has been saved in the camera correctly, its information appears on **Issuer DN**, **Subject DN**, **Validity Period** and **Extended Key Usage**.

To delete the CA certificate
Click **Delete**, and the CA certificate stored in the camera will be deleted.

Setting the 802.1X authentication function — Example of Windows Server 2003

This section explains how to configure the authentication server and CA using Microsoft Windows Server 2003.

Note

As this section describes authentication based on the user interface in English on Windows Server 2003, the UI terminology and page configuration may be different depending on the version of the Operating System or Service Pack and patch update status.

Before setting

Perform the following settings before configuring an 802.1X network.

Active Directory (domain controller)

The following setting example is based on the assumption that the Active Directory has been configured.

Windows IAS configuration

Configure **Remote access/VPN server** in **Manage Your Server** of Windows Server 2003. Open **Add or Remove Programs** from **Control Panel** of Windows menu. Install **Internet Authentication Service** in **Add/Remove Windows Components**.

CA configuration

To configure the CA, perform the following steps:

1 Open **Add or Remove Programs** from **Control Panel** of the Windows menu.

2 Select **Add/Remove Windows Components**.

3 Add **Certificate Services** in the Component menu.

4 Select **Enterprise root CA** on **CA Type**.

5 Type the CA name on **Common Name for this CA**, and configure the CA.

Creating a security group for Active Directory

1 Open **Active Directory Users and Computers** from **Administrative Tools** of the Windows menu.

2 Select **Users** of the domain with which you want to perform 802.1X connection.

3 Select **New** from the context menu, then select **Group** and configure the group for 802.1X connection.
For example, the group "Wired_802.1X_Group" is assumed for explanation purposes.

Configuring the Internet Authentication Service

1 Open **Internet Authentication Service** from **Administrative Tools** of the Windows menu.

2 Click **Register Server in Active Directory** on the operation menu.

3 Read the displayed precautions carefully and click **OK** to accept them.

Then, continue to configure the EAP-TLS policy.

4 Select **Remote Access Policy** and right-click.

5 Select **New** from the context menu, and select **Remote Access Policy** to open "New Remote Access Policy Wizard".

6 Select **Set up a custom policy**.

7 Set the following items:
Policy name: Type "Allow 802.1X Access" as an example.
Policy conditions: Click **Add** and add the following items:
– NAS Port-Type: Ethernet, Wireless-IEEE802.11, Wireless-Other and Virtual (VPN)
– Windows-Groups: Wired_802.1X_Group
Permissions: Select **Grant remote access permission**.
Edit Profile:
– Dial-in Constraints tab: Specify the session time out period during which the client is allowed to be connected, as required.
– Authentication tab: Delete checks from all the boxes. Click **EAP Method** and add **Smart Card or other certificates**.

Then, continue to configure the RADIUS client.

8 Select **RADIUS Clients** and right-click.

9 Select **New RADIUS Client** from the context menu.

10 Set the following items:
Friendly name: Type "authenticator" as an
example.
Client address (IP or DNS): IP address of the
authenticator
Client-Vender: RADIUS Standard
Shared secret: Specify the shared secret to be set
in the authenticator.

Adding a user

1 Open **Active Directory Users and Computers**
from **Administrative Tools** of Windows menu.

2 Select **Users** of the domain with which you want to
add a user and right-click.

3 Select **New** from the context menu, then select
User.

4 Set the following items to configure a new user:
For example, the log-on user name "1XClient" is
assumed for explanation purposes.
First name: 1XClient
User logon name: 1XClient@<domain name>
Password: Specify a password. Then select
Password never expires in account options.

5 Select the user to be added and right-click.

6 Select **Properties** from the context menu.

7 Set the following items:
Dial-in tab: Select **Allow access** in **Remote
Access Permission (Dial-in or VPN)**
Member Of tab: Add "Wired_802.1X_Group".

The preparations for configuring a 802.1X network are
now completed.
Proceed to issue the certificate to be imported to the
camera.

Issuing the CA certificate

Prepare a Windows client PC (called "client PC"
hereafter) to temporarily store the certificate, and
configure so that the client PC and Windows Server
2003 computer can be connected through the network.

1 Start Internet Explorer on the client PC.

2 Type the CA's URL in the address bar, and click **Go
To**.
The CA's URL is normally as follows:

http: //<address of the CA>/CertSrv/

The "Microsoft Certificate Services" page opens.
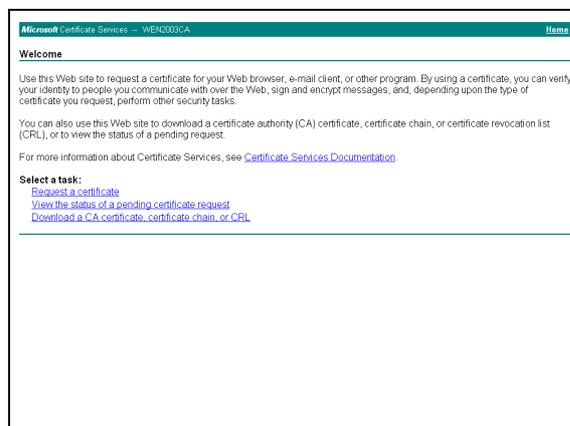
Note

If the Microsoft Certificate Service page does not appear
using the URL above, check the following:
– Is the service of the Web site enabled on Internet
Information Service (IIS)?
– Is Certificate Services enabled?
– Is the firewall or antivirus software setting on the
client PC blocking connection?
– Are the network configuration and Internet
Explorer settings on the client PC correct?

3 When Internet Explorer prompts entering the log-in
user and password, type the user name as follows.
Example: when the user name is "1XClient" and
the domain name "localnetwork.net"

1XClient@localnetwork.net

4 Click **Download a CA certificate, certificate
chain, or CRL**.

5 Select **Base 64** in **Encoding method** and click
Download CA certificate.
The "File Download" dialog opens.

6 Specify the file storage location and save the CA
certificate.

After saving the CA certificate, import it to the camera.
The CA certificate import procedure is completed.

Downloading the client certificate

This section explains the procedure to download the
client certificate.

1 Start Internet Explorer on the client PC and type the
CA's URL in the address bar.
The CA's URL is normally as follows:

http: //<address of the CA>/CertSrv/

2 Click **Go To**.

3 Type the log-in user name and password correctly.
The "Microsoft Certificate Services" page opens.

4 Click **Request a certificate**, **advanced certificate request** and **Create and submit a request to this CA** in sequence.

5 Set the following items.

Certificate Template: User
Key Options: Create new key set
– CSP: Microsoft Enhanced Cryptographic
  Provider v1.0
– Key Size: 1024
– Check **Mark keys as exportable**.
Additional Options: Select **SHA-1** for **Hash Algorithm**.

6 Click **Submit**.
The message "The certificate you requested was issued to you." appears.

7 Click **Install this certificate.** to install the certificate in the certificate store on the client PC.

8 Click **Internet Options**, **Content** and **Certificates** of Internet Explorer in sequence.
The new client certificate is displayed in the Personal tab.

9 Select the installed certificate and click **Export...**.
The "Certificate Export Wizard" opens.

10 Click **Next** and select as follows.
  Do you want to export the private key with the certificate?: Select **Yes, export the private key.**
  Select the format you want to use: Select **Personal Information Exchange – PKCS#12(PFX)**.
  Password: Specify the private key password.
  File to export: Specify the name of the file to be exported.

The certificate is exported. Import the exported file to the camera as the camera's client certificate.
For details, see "To import the client certificate" in the Client certificate tab on page 55.

Setting the User
— User Menu

When you click `User` in the Administrator menu, the User menu appears.
Use this menu to set the user names and passwords of the Administrator and (up to 9) users (User 1 to User 9), and the access right of each user.

Administrator

Specify **User name**, **Password** and **Re-type password**.

User 1 to 9

Specify **User name**, **Password**, **Re-type password** and **Viewer mode** for each user ID.

User name

Type a user name between 5 and 16 characters.

Password

Type a password between 5 and 16 characters.

Re-type password

To confirm the password, retype the password that you typed in the **Password** box.

Viewer mode

When the user is authenticated for logging in the main viewer, select the viewer mode to be displayed after authentication.

Full: The user can operate all functions in this mode.
Pan/Tilt: In addition to the **Light** mode, the user can operate pan/tilt/zoom.
Preset position: In addition to the **Light** mode, the user can perform the camera's preset position settings.
Light: In addition to the **View** mode, the user can select the image size of the main viewer, select codec and capture a still image.
View: The user can only monitor the camera image.

For the functions available for each viewer mode, see "Administrator and User" on page 19.

Viewer authentication

Set whether the user is authenticated or not when the main viewer is displayed.

On: The main viewer is displayed in accordance with the viewer mode of the authenticated user.
Off: Select the viewer mode of the main viewer which is displayed without authentication from **Full**, **Light** or **View**.

OK/Cancel

See "Buttons common to every menu" on page 32.

Setting the Security
— Security Menu

When you click `Security` in the Administrator menu, the Security menu appears.
This allows you to control which computers can have access to the camera.
Likewise, when using IPv6, security settings can be configured for each network.
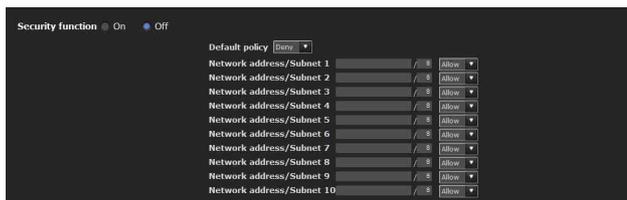
Security function

To activate the security function, select **On**.

Default policy

Select the basic policy of the limit from **Allow** and **Deny** for the computers specified in the Network address/Subnet 1 to Network address/Subnet 10 menus below.

Network address/Subnet 1 to Network address/Subnet 10

Type the network addresses and subnet mask values that you want to allow or deny access to the camera.
You can specify up to 10 network addresses and subnet mask values. For a subnet mask, type 8 to 32.
(In the case of IPv6, enter a value between 8 and 128.)
Select **Allow** or **Deny** from the drop-down list on the right for each network address/subnet mask.

Tip

The subnet mask value represents the bit number from the left of the network address.
For example, the subnet mask value for "255.255.255.0" is 25.
If you set **192.168.0.0/24** and **Allow**, you can allow access from computers having an IP address between "192.168.0.0" and "192.168.0.255".

Note

You can access the camera even from a computer having an IP address whose access right is set to **Deny**, if you enter the user name and password set for the **Administrator** boxes in the User menu.

OK/Cancel

See "Buttons common to every menu" on page 32.

Saving the Camera Position and Action —
Preset position Menu

When you click `Preset position` in the Administrator menu, the Preset position menu appears. This allows you to save the camera's pan, tilt and zoom positions and set position (programmed action of the camera).
The Preset position menu consists of 2 tabs: **Position** and **Preset tour**.
The Preview screen is displayed.
Every setting item can be set to Image 1 and Image 2 respectively.

Notes

- Preset position menu is not available when **SolidPTZ** is set to **On** in the Camera menu-Video codec tab.
- Only Image 1 can be set when **SolidPTZ** of Image 2 is set to **Off**.
- When Aspect ratio in the System menu- Installation tab is set to **16:9**, this function is not available.
  All of the preset positions will be deleted when aspect ratio is changed from **3:4** to **16:9**.

Position Tab — Saving pan/tilt/zoom position

You can save camera positions (pan, tilt and zoom positions).
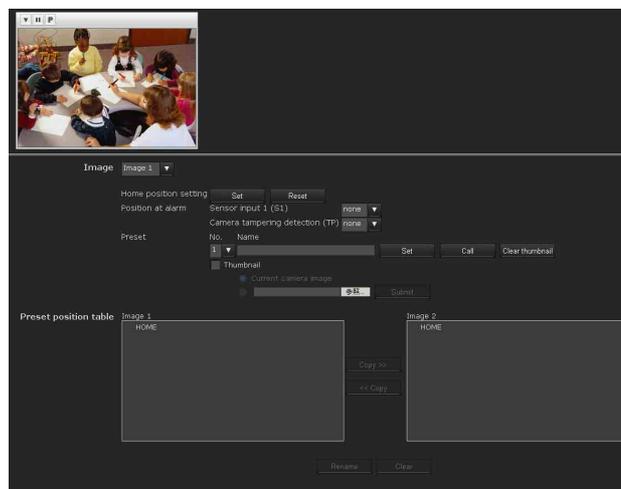
Preview screen

This screen is for monitoring images and setting preset positions.
For details of each button, please refer to the Control bar of the Plug-in free viewer (page 23).

Image

Select the image to configure.

Home position setting

Set the current camera position as the home position.

Set

Click to save the current pan, tilt and zoom positions as the home position. To move the camera to the home position, click ▪ in the control panel (page 22).

Reset

Click to reset the home position to the factory-set position.

Position at alarm

This unit can synchronize a preset position with Sensor input or with Camera tampering detection.
If an alarm is detected by the sensor input or the camera tampering detection function, the camera automatically moves to the corresponding preset position.
If you do not want to synchronize with any preset number, select **none**.

Sensor input 1 (S1)

Select a preset position to synchronize with the alarm from Sensor input 1.

Camera tampering detection (TP)

Select the preset position to synchronize with the camera tampering detect alarm.

Preset

You can configure and save preset positions and thumbnails. Click **Call** to move the camera to a specified preset position and click **Clear thumbnail** to delete the thumbnail information for the specified preset position.

No.

Select a preset number from **1** to **8** from the drop-down list.

Name

Type the preset position name of the selected preset number using up to 32 characters.

Set

Click to save the current camera position to the selected preset number.
To save a preset position, operate as follows:

1   Move the camera to the position to be saved, while checking the image with the preview viewer.

2   Select a preset number for saving, and type the preset position **Name**.

3   Click the **Set** button.
The camera position is saved.

Call

Click to move the camera to the preset position.

Clear Thumbnail

Click to delete the thumbnail of the specific preset position.

Thumbnail

Checking this checkbox registers a thumbnail when you register a preset position.
Select a radio button to determine whether to register the current camera image as a thumbnail or to register with a specified image.
To specify an image, click **Browse**. Then click **Submit**.

> **Note**
>
> The available image file is JPEG format. Maximum file size is 50KB.

Preset position list

By clicking Preset, you can view the information of the preset positions.

Copy

You can copy the preset position of Video 1 and Video 2. Select the preset position you want to copy, and then click **Copy**.

Rename

Select the preset position you want to rename, and then click Rename. You can enter characters. Press the enter (return) key to confirm.

Clear

You can delete preset positions.

## OK/Cancel

See "Buttons common to every menu" on page 32.

> **Note**
>
> Only the setting items of **Position at Alarm** can be saved or cancelled by clicking **OK/Cancel**.

Preset tour Tab — Setting a position tour

The camera moves to the programmed positions sequentially (Tour).
Up to five programs can be set as Tours A to E.
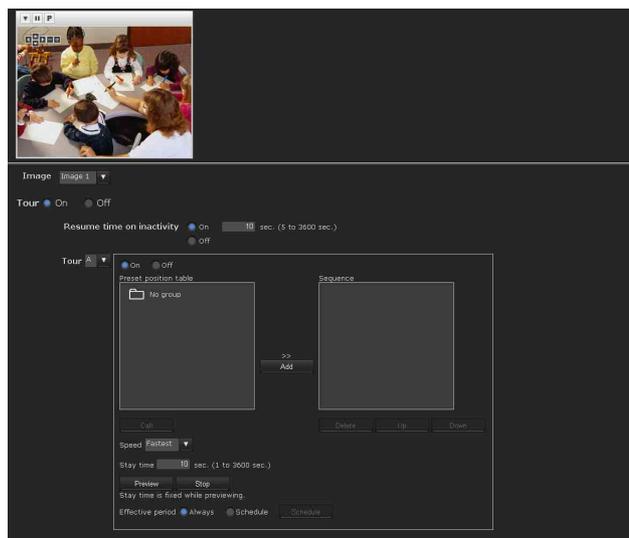
Preview screen

This screen is for monitoring images and configuring preset tour settings.
For details of each button, please refer to the Control bar of the Plug-in free viewer (page 23).

Image

Select the image to configure.

Tour

Select **On** to enable the tour function.

Resume time on inactivity

This item becomes active when **Tour** is set to **On**.
With this item, you can select whether you restart or stop the tour after it has stopped by manual pan, tilt or zoom operation or by camera movement to the preset position triggered by an alarm.

On: Specify the wait time before the tour restarts, between 5 and 3600 seconds. The tour restarts automatically after the specified time has elapsed.
Off: The tour does not restart.

Tour A to Tour E

Configure Tour A to Tour E respectively.
Each tour setting consists of 5 items: **On/Off**, **Sequence**, S**peed**, **Stay time**, **Effective period**.
Select the tour to configure from the drop-down list.

On: The tour operates.
Off: The tour does not operate.

> **Note**
>
> If nothing is added to the **Sequence** list and you click **OK** when **On** is selected, the tour function will fail.

Sequence

Set the sequence of the tour.
The preset positions saved using the Position tab are displayed in **Preset position list**.
Select the preset position from **Preset position list**, then click Add. The selected preset position is added in the Sequence list. Repeat this procedure to specify the preset positions in sequence.
To check a preset position, select it from **Preset position list**, and then click **Call**.
To delete a preset position from **Sequence**, select it, and then click **Delete**.
To change the order in **Sequence**, select the preset position and then click **Up** or **Down**.

Speed

Select the speed of camera movement between **1** and **23,** or **Fastest** from the drop-down list. The camera moves faster with a higher number setting. The fastest speed is obtained with **Fastest**.

Stay time

Type a period of time during which the camera is to stay at each preset position, between **1** and **3600** seconds.

Preview

Previews the order of movements of the selected tour. The operation speed and stop time do not influence the preview operation.

Stop

Stops the preview in action.

Effective period

Select the period during which the tour is activated.

Always: The tour can be activated any time.
Schedule: The tour is activated according to the schedule you have set.
Click **Schedule**, and the menu for the effective period is displayed. ("Setting the Schedule — Schedule Menu" on page 72.)

> **Note**
>
> You cannot set tours if the effective periods overlap each other.

OK/Cancel

See "Buttons common to every menu" on page 32.

Sending an Image via E-mail — e-Mail (SMTP) Menu

When you click **e-Mail (SMTP)** in the Administrator menu, the e-Mail (SMTP) menu appears.
Using the e-Mail (SMTP) function, you can send an e-mail with an attached image file that has been shot linked with an external sensor input or with the built-in detection functions. An image file can also be sent periodically.
The e-Mail (SMTP) menu consists of three tabs: **Common**, **Alarm sending** and **Periodical sending**.

Common Tab — Setting the e-Mail (SMTP) Function
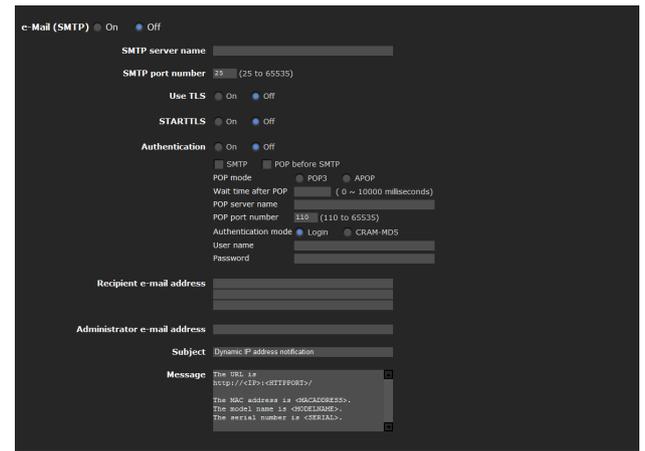
e-Mail (SMTP)

Select **On** when you use the e-Mail (SMTP) function.

> **Note**
>
> The frame rate and operability on the main viewer may be reduced while a file is being transmitted by the e-Mail (SMTP) function.

SMTP server name

Type the SMTP server name using up to 64 characters, or the IP address of the SMTP server.

SMTP port number

Enter a port number from 25 to 65535.
The standard port number is 25. If TLS is enabled, the standard port number for SMTPs is 465.

Use TLS

To use the encryption function by TLS, select **On**.

STARTTLS

To use the encryption function by STARTTLS, select **On**.

Authentication

Select whether authentication is required when you send an e-mail.

Off: No authentication is required when an e-mail is sent.
On: Authentication is required when an e-mail is sent. Select one of the authentication methods from the following and specify the **POP server name**, **User name** and **Password** as required.
    SMTP: Select when SMTP authentication is required.
    POP before SMTP: Select when POP before SMTP authentication is required.

Note

When you set **Authentication** to **On**, be sure to select **SMTP** and/or **POP before SMTP**.

POP mode

Select POP3 or APOP as the authentication method for POP authentication.

Wait time after POP

Set the waiting time in **POP before SMTP** before SMTP authentication after POP authentication is completed. Timeout can be set from 0 to 10,000 msec.

POP server name

This is necessary when **POP before SMTP** is selected for **Authentication**.
Type the POP (receiving mail) server name using up to 64 characters, or type the IP address of the POP server. This setting is necessary when the SMTP server that sends e-mails performs authentication using the POP user account.

POP port number

Enter a port number from 110 to 65535.
The standard port number is 110. If TLS is enabled, the standard port number for POP3s is 995.

Authentication mode

Select **Login** or **CRAM-MD5** as the authentication method for SMTP authentication.

User name, Password

Type the user name and password of the user who owns the mail account using up to 64 characters. This setting is necessary when the SMTP server that sends e-mails performs authentication.

Recipient e-mail address

Type the recipient e-mail address using up to 64 characters.
You can specify up to three recipient e-mail addresses.

Administrator e-mail address

Type the Administrator e-mail address using up to 64 characters.
This address is used for reply e-mails and sending system messages from the mail server.

Subject

Type the subject/title of the e-mail using up to 64 characters.
When **Alarm sending** of the Alarm sending tab is set to **On**, an e-mail sent in response to alarm detection will indicate the type of alarm in the subject. **(S1)** is added for sensor input detection, **(TP)** for camera interference detection, **(MD)** is additionally available for motion detection.

Message

Type the text of the e-mail using up to 384 characters. (A line break is equivalent to 2 characters.)

OK/Cancel

See "Buttons common to every menu" on page 32.

Alarm sending Tab — Setting the e-mail sending mode when detecting the alarm

Set to send an e-mail linked with alarm detection by the external sensor input or by the built-in detection functions.

Note

When more than two of the following settings are activated, the camera only creates two still images at the same time. A third still image cannot be created unless one of the previous two still images is sent.

e-Mail (SMTP) menu
– Alarm sending tab **Alarm sending** (when file attachment is set to On).
– Periodical sending **Periodical sending**

FTP client menu
– Alarm sending tab **Alarm sending**
– Periodical sending **Periodical sending**

Trigger menu
– **Mail (SMTP)**
– **FTP Client**
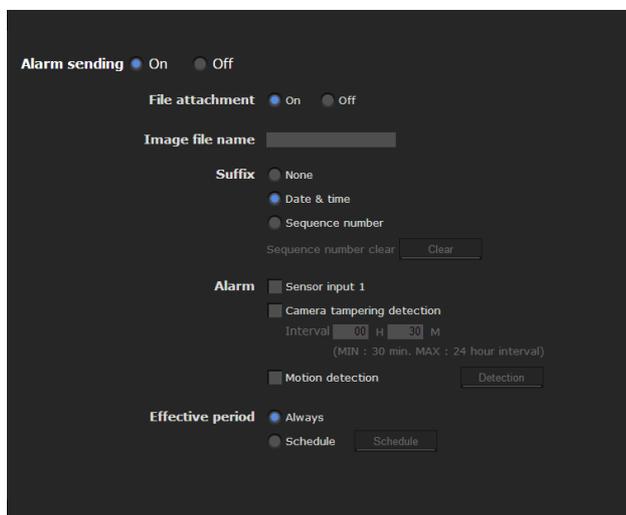
Alarm sending

Select **On** to set sending an e-mail linked with alarm detection.

File attachment

Set whether an image file (JPEG file) is to be attached to the e-mail or not.
When **On** is selected, the image file made using the settings below is attached. When **Off** is selected, only the message is sent.

Image file name

Type the file name you want to assign to the image to be attached to an e-mail. You can use up to 10 alphanumeric characters, – (hyphen) and _ (underscore) for naming.

Suffix

Select a suffix to be added to the file name.
None: No suffix is added. The image file name is assigned to the image to be sent via e-mail.
Date & time: The date & time suffix is added to the image file name.
The date/time suffix consists of lower two-digits of the year (2 digits), month (2 digits), date (2 digits), hour (2 digits), minute (2 digits), second (2 digits), and sequential number (2 digits), thus adding 14-digit number to the image file name.
Sequence number: A sequential number of 10 digits between 0000000001 and 4294967295 and two fixed digits 00 are added to the image file name.

Sequence number clear

Click **Clear** to reset the **Sequence number** suffix to 1.

Alarm

Select the alarm to be linked with e-mail notification.

Sensor input 1: The external sensor that is connected to sensor input of the camera I/O port.
Camera tampering detection: An alarm that is triggered when the camera detects tampering such as direction shifting or spray.
Interval: Set the interval at which you want to send an e-mail periodically after detection.
E-mails are sent after a specified interval, until the Camera tampering detection setting is cleared or the detection setting is turned off. You can set the hour (H) and minutes (M) between 30 minutes and 24 hours (one day).
When file attachment is set to ON, a file is only attached to an initial mail and will not be attached to the following mails.
Motion detection: The alarm is detected by the motion detection function.
Click **Detection**, and the motion detection menu is displayed to allow you to set the motion detection function (page 73).

Effective period

Set the period during which alarm detection is effective.

Always: Alarm detection is always effective.
Schedule: You can specify the period during which alarm detection is effective.
   Click **Schedule** and the menu for the effective period is displayed. ("Setting the Schedule — Schedule Menu" on page 72)

OK/Cancel

See "Buttons common to every menu" on page 32.

Periodical sending Tab — Setting the periodical e-mail sending mode

You can set to send e-mails periodically.

> **Note**
>
> When more than two of the following settings are activated, the camera only creates two still images at the same time. A third still image cannot be created unless one of the previous two still images is sent.

e-Mail (SMTP) menu
   – Alarm sending tab **Alarm sending** (when file attachment is set to On).
   – Periodical sending **Periodical sending**

FTP client menu
   – Alarm sending tab **Alarm sending**
   – Periodical sending **Periodical sending**

Trigger menu
   – **Mail (SMTP)**
   – **FTP Client**
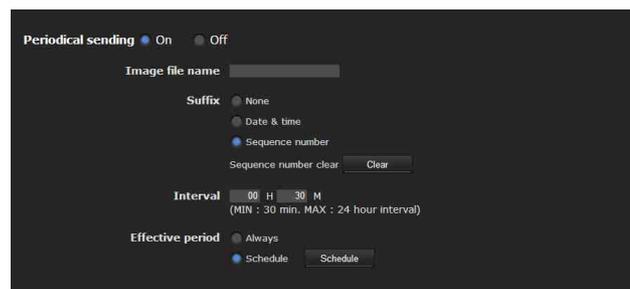
Periodical sending

Select **On** when you want to use periodical e-mail sending.

Image file name

Type the file name of the image attached to the e-mail using up to 10 alphanumeric characters, – (hyphen) and _ (under score).
The actual image file name will be the specified image file name with a suffix and the extension .jpg.

Suffix

Select a suffix to be added to the file name used when the e-mail is sent.

None: The name of the sent file will be the image file name.
Date & time: The date & time suffix is added to the image file name.
   The date & time suffix consists of the year (2 digits), month (2 digits), date (2 digits), hour (2 digits), minutes (2 digits) and seconds (2 digits), and sequential number (2 digits), thus adding a 14-digit number to the image file name.
Sequence number: A sequential number of 10 digits between 0000000001 and 4294967295 and two fixed digits 00 are added to the image file name.

Sequence number clear

Click **Clear** to reset the **Sequence number** suffix to 1.

Interval

Type the interval at which you want to send an e-mail periodically. You can set the hour (H) and minutes (M) between 30 minutes and 24 hours (one day).

Effective period

Set the period during which periodical sending will be effective.

Always: Periodical sending is always effective.
Schedule: You can specify the period during which periodical sending is effective.
   Click **Schedule** and the menu for the effective period is displayed. ("Setting the Schedule — Schedule Menu" on page 72)

OK/Cancel

See "Buttons common to every menu" on page 32.

Sending Images to FTP Server — FTP Client Menu

When you click **FTP client** in the Administrator menu, the FTP client menu appears.

Use this menu to set up for capturing and sending still images to an FTP server. Using the FTP client function, you can send an image file that has been shot and recorded linked with external sensor input or the built-in detection functions to an FTP server. An image file can also be sent periodically.

The FTP client menu consists of three tabs: **Common**, **Alarm sending** and **Periodical sending**.

Common Tab — Setting the FTP client function
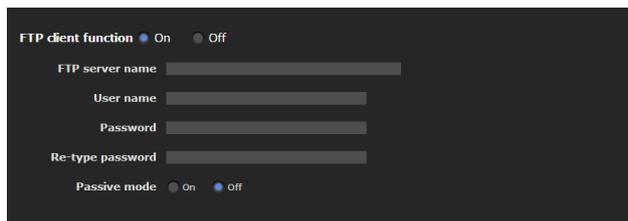
FTP client function

To activate the FTP client function, select **On**.

> **Note**
>
> The frame rate and operability on the main viewer may be reduced while a file is being transmitted by the FTP client function.

FTP server name

Type either the FTP server name to upload still images using up to 64 characters, or the IP address of the FTP server.

User name

Type the user name for the FTP server using up to 64 characters.

Password

Type the password for the FTP server using up to 64 characters.

Re-type password

To confirm the password, type the same characters as you typed in the **Password** box.

Passive mode

Set whether you use the passive mode of FTP server or not when connecting to the FTP server. Select **On** to connect to the FTP server using the passive mode.

OK/Cancel

See "Buttons common to every menu" on page 32.

Alarm sending Tab — Setting the FTP client action when detecting the alarm

Set to forward an image file to a specified FTP server linked with alarm detection by the external sensor input or by the built-in detection functions.

> **Note**
>
> When more than two of the following settings are activated, the camera only creates two still images at the same time. A third still image cannot be created unless one of the previous two still images is sent.

e-Mail (SMTP) menu
– Alarm sending tab **Alarm sending** (when file attachment is set to On).
– Periodical sending **Periodical sending**

FTP client menu
– Alarm sending tab **Alarm sending**
– Periodical sending **Periodical sending**

Trigger menu
– **Mail (SMTP)**
– **FTP Client**
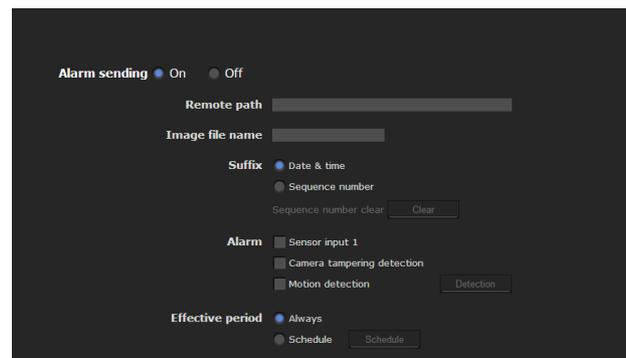
Alarm sending

Select **On** to send the image file to the FTP server linked with alarm detection.

Remote path

Type the path to the destination using up to 64 characters.

Image file name

Type the file name you want to assign to the images when sending to the FTP server. You can use up to 10 alphanumeric characters, – (hyphen) and _ (underscore) for naming.

Suffix

Select a suffix to be added to the file name.

Date & time: The date & time suffix is added to the image file name.
The date/time suffix consists of the year (2 digits), month (2 digits), date (2 digits), hour (2 digits), minute (2 digits) and second (2 digits), and sequential number (2 digits), thus adding a 14-digit number to the image file name.
Sequence number: A sequential number of 10 digits between 0000000001 and 4294967295 and a sequential 2-digit number are added to the image file name.

> **Tip**
>
> A sequential number added to **Date & time** and **Sequence number** is used to identify individual files created with consecutive alarm events.

Sequence number clear

Click **Clear** to reset the **Sequence number** suffix to 1.

Alarm

Select the alarm to be linked with the file to be forwarded to the FTP server.

Sensor input 1: The external sensor that is connected to sensor input of the camera I/O port.
Camera tampering detection: An alarm that is triggered if the camera detects tampering, such as direction shifting or spray.
Motion detection: The alarm detected by the motion detection function.
Click **Detection**, and the Motion detection menu is displayed to allow you to set the motion detection function (page 73).

> **Note**
>
> When a preset position is set in the menu of **Preset Position-Alarm linked position**, the alarm is invalid if the camera is moved to a preset position.

Effective period

Set the period during which alarm detection is effective.

Always: Alarm detection is always effective.
Schedule: You can specify the period during which alarm detection is effective.
Click **Schedule** and the menu for the effective period is displayed. ("Setting the Schedule — Schedule Menu" on page 72)

OK/Cancel

See "Buttons common to every menu" on page 32.

Periodical sending Tab — Setting the periodical FTP client activity

You can set to send image files (JPEG files) to an FTP server periodically.

> **Note**
>
> When more than two of the following settings are activated, the camera only creates two still images at the same time. A third still image cannot be created unless one of the previous two still images is sent.

e-Mail (SMTP) menu
– Alarm sending tab **Alarm sending** (when file attachment is set to On).
– Periodical sending **Periodical sending**

FTP client menu
– Alarm sending tab **Alarm sending**
– Periodical sending **Periodical sending**

Trigger menu
– **Mail (SMTP)**
– **FTP Client**
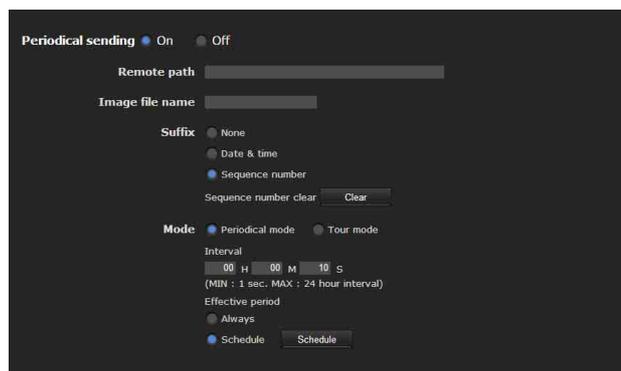
Periodical sending

Select **On** when you want to use periodical sending.

Remote path

Type the remote path using up to 64 characters.

Image file name

Type the file name of the image sent to the FTP server using up to 10 alphanumeric characters, – (hyphen) and _ (under score).
The actual image file name will be the specified image file name with a suffix and extension .jpg.

Suffix

Select a suffix to be added to the file name sent to the FTP server.

None: The name of the sent file will be the image file name.
Date & time: The date & time suffix is added to the image file name.
  The date & time suffix consists of the year (2 digits), month (2 digits), date (2 digits), hour (2 digits), minute (2 digits) and second (2 digits), and sequential number (2 digits), thus adding a 14-digit number to the image file name.
Sequence number: A sequential number of 10 digits between 0000000001 and 4294967295 and two fixed digits 00 are added to the image file name.

Sequence number clear

Click **Clear** to reset the **Sequence number** suffix to 1.

Mode

Select the periodical sending mode.

Periodical mode: An image file is sent periodically according to the specified **Interval** and **Effective period**.
Tour mode: An image file is sent each time the camera is moved to a preset position during the tour.

Interval

Type the interval at which you want to send images to the FTP server periodically. You can set the hour (H), minutes (M) and seconds (S) between 1 second and 24 hours (one day).

Note

The actual interval may be longer than the set value, depending on the image size, image quality setting, bit rate and network environments.

Effective period

Set the period during which periodical sending is effective.

Always: Periodical sending is always effective.
Schedule: You can specify the period during which periodical sending is effective.
  Click **Schedule** to display the menu for the effective period. ("Setting the Schedule — Schedule Menu" on page 72)

OK/Cancel

See "Buttons common to every menu" on page 32.

Setting the Operations from the Viewer — Trigger Menu

Click [Trigger] in the Administrator menu to display the Trigger menu.

This allows you to select the activities that can be performed when the button on the Trigger panel is clicked on the main viewer.

e-Mail (SMTP) menu
– Alarm sending tab **Alarm sending** (when file attachment is set to On).
– Periodical sending **Periodical sending**

FTP client menu
– Alarm sending tab **Alarm sending**
– Periodical sending **Periodical sending**

Trigger menu
– **Mail (SMTP)**
– **FTP Client**
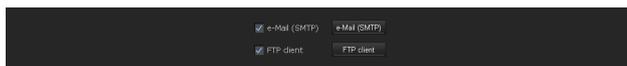
e-Mail (SMTP)

Checking this box allows you to select **e-Mail (SMTP)** on the Trigger panel in the main viewer.

By clicking **e-Mail (SMTP)**, a still image of the time you click is captured, and your e-mail with the image file attached is sent to the specified mail address.

When you click **e-Mail (SMTP)**, the **Trigger-e-Mail (SMTP)** menu is displayed. You can set the necessary options here. The setting options and setting procedures are the same as those of the e-Mail (SMTP) menu (page 64).
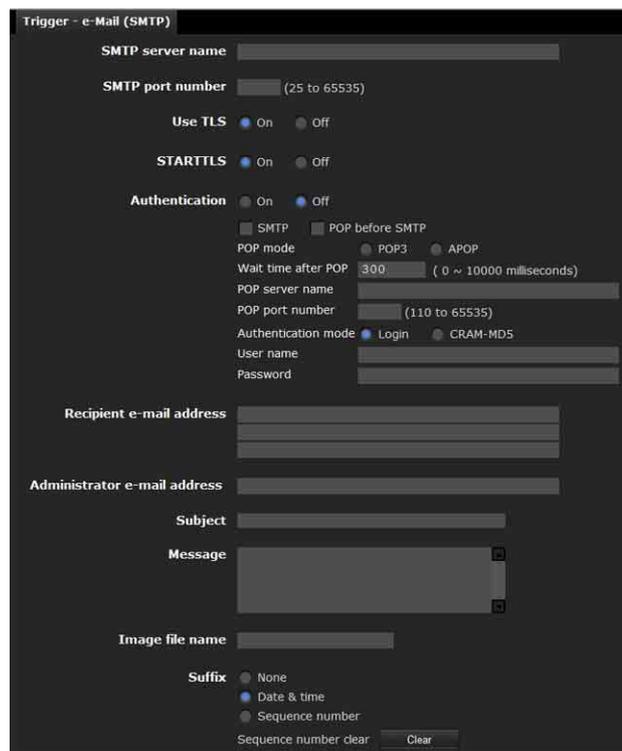
FTP client

Checking this box allows you to select **FTP client** on the Trigger panel in the main viewer.
By clicking **FTP client** a still image of the time you click is captured, and the image file is sent to the FTP server.

When you click **FTP client**, the **Trigger-FTP client** menu is displayed. You can set the necessary options here. The setting options and setting procedures are the same as those of the FTP client menu (page 68).
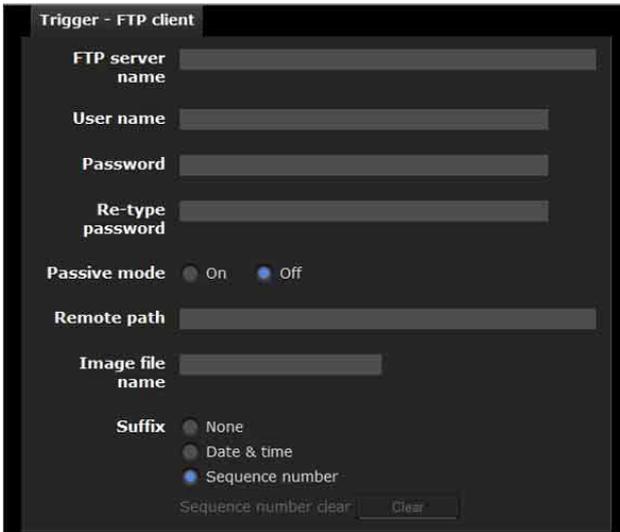
Setting the Schedule
— Schedule Menu

When you click **Schedule** in the Administrator menu, the Schedule menu appears.
The Schedule menu consists of four tabs: **Preset position (Image 1)**, **Preset position (Image 2)**, **e-Mail** and **FTP**.
This is the same menu as the Schedule menu that is displayed when you click **Schedule** to set the **Effective period** in the following menus.

Preset position (Image 1 or 2): Schedule in the Position Tour of the Preset position menu
e-Mail: Schedule in the Alarm sending or Periodical sending tab of the e-Mail (SMTP) menu
FTP: Schedule in the Alarm sending or Periodical sending tab of the FTP client menu

Example: When setting e-Mail (SMTP) (Periodical sending) in the Schedule menu

Use the same time schedule every day
When this item is checked, the same **Start time** and **End time** are applied to all days. In that case, the **Start time** and **End time** of the day from **Mon** (Monday) to **Sun** (Sunday) cannot be input.

Mon (Monday) to Sun (Sunday)
The time period on the right of the checked day is the effective period of the schedule.

Start time, End time
Specify the start time and the end time.

OK/Cancel
See "Buttons common to every menu" on page 32.

Setting the Sensor input/ Camera tampering detection/Motion detection
— Event detection Menu

When you click Event detection in the Administrator menu, the **Event detection** menu appears. The Event detection menu consists of three tabs: **Sensor input**, **Camera tampering detection** and **Motion detection**.

Sensor input tab — Set the sensor input

Sensor input mode

Set the direction of the detected input signal to the sensor input terminal of the camera.
Normally open: Detects the alarm when the sensor input is short-circuited.
Normally closed: Detects the alarm when the sensor input is open-circuited.

OK/Cancel

See "Buttons common to every menu" on page 32.

Camera tampering detection tab — Set the camera tampering detection
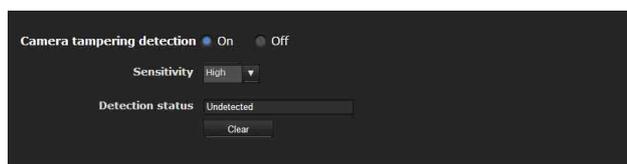
Camera tampering detection

Select **On** to activate the function to detect camera tampering, such as direction shifting or spray. When you select **On**, you can select the Sensitivity.
Sensitivity: Set the sensitivity of camera tampering detection to **High**, **Middle** or **Low**.

Detection status: Display the tampering detection state of the time when Camera tampering detection tab is opened. To clear the detection status, click the **Clear** button.

OK/Cancel

See "Buttons common to every menu" on page 32.

> **Note**
>
> Activation of the camera tampering detection function may be delayed in the following conditions.
> – When **Auto slow shutter** in the Camera menu-Picture tab is active.
> – When the image size of Video 1 in the Camera menu-Video codec tab is as follows.
>   2048 × 1536
>   1920 × 1080
>   1600 × 1200
>   1680 × 1056
>   1440 × 912
>   1280 × 1024
>   1280 × 960
> – When **Cropping** in the Camera menu-Video codec tab is set to **On**.

Motion detection tab — Set the motion detection

Motion detection detects moving objects in the camera image and outputs an alarm.

> **Notes**
>
> • Before actual use, perform an operation test and confirm that the motion detection function works correctly.
> • The Motion detection menu may not be displayed depending on the function settings. To display the Motion detection menu, configure as follows.
>   Motion detection doesn't work after you set Motion detection and change the following settings to the ones other than **Off**.
>   System menu- Installation tab (page 36)
>   – **Monitor out**: **Off**.
>   Camera menu-Video codec tab (page 40)
>   – **Cropping**: **Off**.
>   – **SolidPTZ**: **Off**.
>   – **Codec** of **Image 2**: **Off**.

When the Motion detection menu is displayed for the first time

When you click **Motion detection**, "Security Warning" is displayed.
When you click **Yes**, ActiveX control is installed and the Motion detection menu is displayed.

Notes

- If **Automatic configuration** is enabled in the Local Area Network (LAN) settings of Internet Explorer, the image may not be displayed. In that case, disable **Automatic configuration** and set the Proxy server manually. For the setting of the Proxy server, consult your network administrator.
- When you install ActiveX control, you should be logged in to the computer as Administrator.
- When you are using Windows XP Service Pack 2 or later, Windows Vista or Windows 7, the information bar or "Security Warning" may appear as you click **Motion detection**. For details, see "Installing ActiveX Control" in "When using Windows XP Service Pack 2 or later" on page 8, "Installing ActiveX Control" in "When using Windows Vista" on page 11, or "Installing ActiveX Control" in "When using Windows 7" on page 13.

Setting items for motion detection

Use the settings tab to set the conditions for the motion detection function while observing camera images. This menu is the same as the settings menu displayed when you click **Detection** on Alarm transmission on the e-Mail (SMTP) menu, or on the FTP client menu. Click the desired item in the setting item list to set the respective detection area.

Monitor screen

Setting item list   Setting area
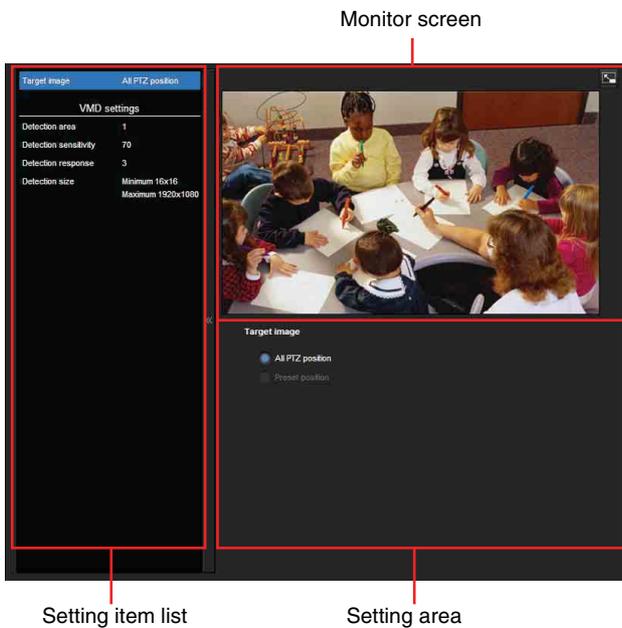
Detection target
All PTZ position or **Preset position**

VMD settings (VMD: Motion detection)

Set the detection area, detection response, detection response speed and detection size for Motion detection. Click the desired item in the setting item list to set the respective detection area.

Detection area
Specify the effective scope of motion detection.
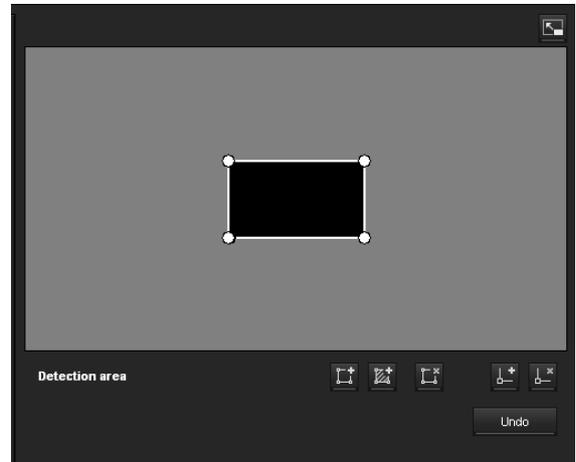
Note

The frames shown on the monitor screen are not displayed on the image files sent or recorded with motion detection.

Configuring the detection area
The following procedure is used to configure the motion detection area:

1 Use the following buttons to specify the active area(s) and inactive area(s).

Add detection area
Clicking this button will add an active area window in the center of the screen.
When you place the cursor on the area, the cursor changes to a crossed arrow, which you can drag to move the area.
When you place the cursor on the vertex of the area, the cursor changes to ←→, which you can drag to move the vertex.

Add non detection area
Clicking this button will add an inactive area window in the center of the screen.
When you place the cursor on the area, the cursor changes to a crossed arrow, which you can drag to move the area.
When you place the cursor on the vertex of the area, the cursor changes to ←→, which you can drag to move the vertex.

Delete Area

Clicking this button will change the cursor to a button. While the cursor is a button, click on a part of the area to delete that area.
After the deletion, the cursor will return to its original form. To exit this operation, click this button again.

Add vertex

Clicking this button will change the cursor to a button. In that state, when you click on a part of the side of the area, a vertex is added to that point. After the addition, the cursor will return to its original form. To exit this operation, click this button again.

Delete vertex

Clicking this button will change the cursor to a button. In that state, when you click on a part of the vertex of the area, the vertex added to that point is deleted. After the deletion, the cursor will return its original form. To exit this operation, click this button again.

Note

The vertex can be moved in an outward direction but cannot be moved toward the inside of an area.

Detection sense

Set the sensitivity of motion detection.
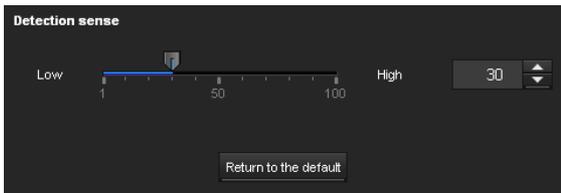
A value from **1** to **100** can be specified.
Clicking **Return to the default** changes the value to the default value.

### Detection response

Set the response velocity of motion detection.
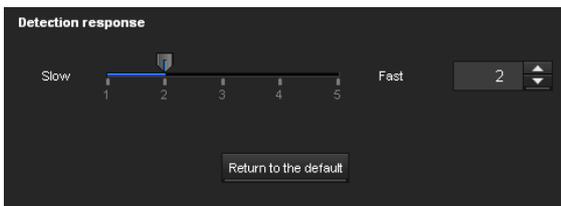
A value from **1** to **5** can be specified.
Clicking **Return to the default** changes the value to the default value.

Detection size

Specify the minimum detection size and maximum detection size of motion detection. To specify the detection size, you can either enter values or drag the vertexes of the area.
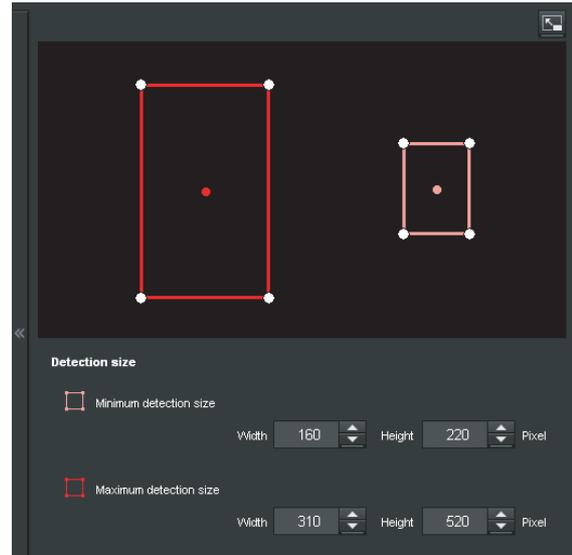
The area size is measured in pixels.
- When you place the cursor on the area, the cursor changes to a crossed arrow, which you can drag to move to the minimum detection size area and maximum detection size area.
- When you place the cursor on the vertex of the area, the cursor changes to ◀▶. Drag and move the vertex to adjust the detection size.

OK/Cancel

See "Buttons common to every menu" on page 32.

Configuring the Viewer
— Viewer Menu

Click **Viewer** in the Administrator menu to display the Viewer menu.
Using this menu, you can select the viewer to use and configure advanced settings.
The Viewer menu consists of two tabs: **Layout** and **HTML output**.

Layout tab
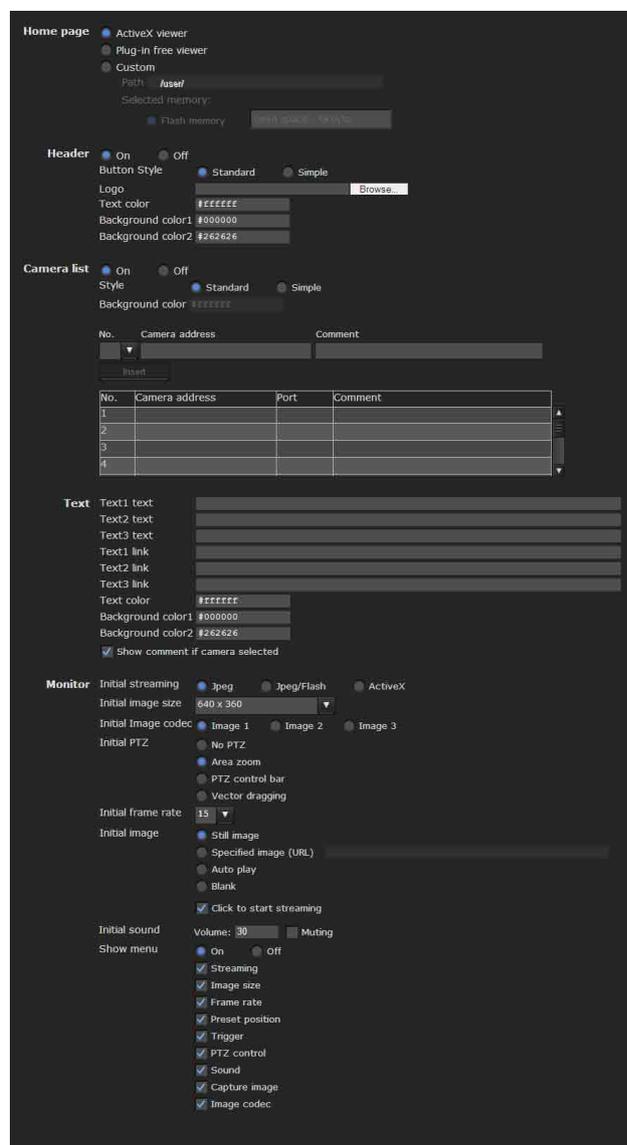
Homepage

Set the viewer or homepage to be displayed at the time of access.

ActiveX viewer: Displays the ActiveX viewer at time of access.
Plug-in free viewer: Displays the Plug-in free viewer at time of access.
Custom: Select the homepage to be displayed.
To store a homepage HTML file in the built-in flash memory, use the Custom Homepage function of SNC toolbox included in the supplied CD-ROM. To learn how to use the Custom Homepage, see page 84.

To display your Custom homepage perform the following operation:

1 Select **Custom**.

2 Type the path of the HTML file using up to 64 characters in the text box on the right of **Path**.

3 In **Selected memory**, select the memory in which the homepage is stored.

Header

Configure the setting for the bar menu displayed at the top of the viewer screen. Select **On** to display the header, or **Off** to hide it.

> **Tip**

Even when you select **Off**, the Administrator menu can be displayed by entering the following URL in the address box of your Web browser.
Example: When the IP address of the camera is set to 192.168.0.100

http://192.168.0.100/<TAG>/l4/index.html

Enter the following value to <TAG> according to the language you wish to use.

en : English
ja : Japanese
fr : French
de : German
it : Italian
es : Spanish
zh_hant : Chinese (Traditional Chinese character)
zh_hans : Chinese (simplified Chinese character)
ko : Korean

Button Style
Select **Standard** or **Simple**.

Logo
To set the logo image, click **Browse** and specify the image to display. The image file format that can be used is GIF, PNG, JPEG. The maximum file size is 50KB. The uploaded image is displayed as 150 × 480 pixels. Click Delete header logo to delete the log set on the Initialize Tab of system menu (page 38).

Text color, Background color 1, and Background color 2

Specify the background colors and font color.
To specify the color, enter "#" followed by an RGB value in 6-digit hexadecimal.
The first 2 digits after # represent red, the next 2 digits green, and the last 2 digits blue. Specify the brightness for each color. 256 brightness levels are available (00-FF).

Camera list

You can register cameras in the camera list. By selecting a registered camera on the viewer screen, you can see the images from the registered camera.

> **Note**
>
> The camera list can be set only when Plug-in free viewer is selected as the homepage.

On/Off

Select **On** to show the camera list, and **Off** to hide it.

Style

You can configure the camera list style.

Background color

Specify the background color of the camera list. The colors are specified in the same way as those for the header.

Registering in Cameras

Specify a number on the camera list and set the IP address, port number, and comment for each camera.
Insert: Click to register a camera in the camera list.
Modify: Click to edit a selected camera list.
Delete: Click to delete a selected camera list.
Down: Click to decrement the number indicating registered camera numbers.
Up: Click to increment the number indicating registered camera numbers.

Text

> **Note**
>
> The camera list can be set only when Plug-in free viewer is selected as the homepage.

Text1 text, Text2 text and Text3 text

Enter the text to be displayed on the viewer screen.

Text1 link, Text2 link and Text3 link

Specify the URL of the link to assign a link to the text.

Text color, Background color 1, and Background color 2

Specify the font color of the text and background colors. The colors are specified in the same way as specifying those for the header.

Show comment if camera selected

Select this option to display comments on the viewer screen.

Monitor

Configure the setting for the camera image display part of Plug-in free viewer.

> **Note**
>
> The camera list can be set only when Plug-in free viewer is selected as the homepage.

Initial streaming

Set the display method for camera image for streaming.

Initial image size

Set the initial camera image size.

Initial image codec

Set the initial codec mode.

Image1: Display the image set in Image 1 of **camera menu-video codec** tab when streaming starts.
Image2: Display the image set in Image 2 of **camera menu-video codec** tab when streaming starts.
Image3: Display the image set in Image 3 of **camera menu-video codec** tab when streaming starts.

> **Note**
>
> When selecting the image with video codec off, it will switch to image1.

Initial PTZ

Set the pan/tilt/zoom operation modes for streaming.

No PTZ: PTZ is not available when streaming starts.
Area zoom: Area zoom is available when streaming starts.
PTZ control bar: Display the PTZ operation bar when streaming starts.
Vector dragging: Vector drag is available when streaming starts.

Initial frame rate

Set the initial camera image frame rate.

Initial image

Set what to initially display on the camera image display area.

Still image: JPEG still images are acquired from the camera and displayed at start-up.
Specified image (URL): Specify a still image of your choice by URL at start-up.
Auto play: Run to start playback.
Blank: No display at start-up.
Click to start streaming: By ticking this when **Still image** or **Specified image** is selected, you can start play by clicking on the image.

> ### Tip
>
> If the menu display is **Off**, **Blank** cannot be selected.

Initial sound
Set the initial volume for when streaming starts. Check **Muting** for muting sound.

> ### Note
>
> This setting is valid only when **SNC ActiveX viewer** is selected for **Streaming method** from **Setting** of the Plug-in free viewer control bar. However, this unit is not equipped with audio functions.

Show menu
Set whether to show or hide operation buttons at the bottom of the camera image area.
Select **On** to display the menu, select **Off** to hide the menu.
When **On** is selected, the items below can be set:

Streaming: Displays the setting options of **Streaming**, if it is checked.
Image size: Displays the setting menu of **Image size**, if it is checked.
Frame rate: Displays the setting menu of **Frame rate**, if it is checked.
Preset position: Displays the setting menu of **Preset position**, if it is checked.
Trigger: Displays the setting options of **Trigger**, if it is checked.
PTZ operation: Displays the setting menu of **PTZ operation** mode, if it is checked.
Sound: Displays the setting menu of **Sound**, if it is checked.

> ### Note
>
> This unit is not equipped with audio functions.

Capture image: Displays the **Capture image** button, if it is checked.
Image codec: Displays the setting menu of **Image codec**, if it is checked.

OK/Cancel
See "Buttons common to every menu" on page 32.

HTML output tab

If the monitor is for personal use, this tab can be used to output sample source for HTML and script.
For details on the setting, refer to "Monitor" of the Layout tab.
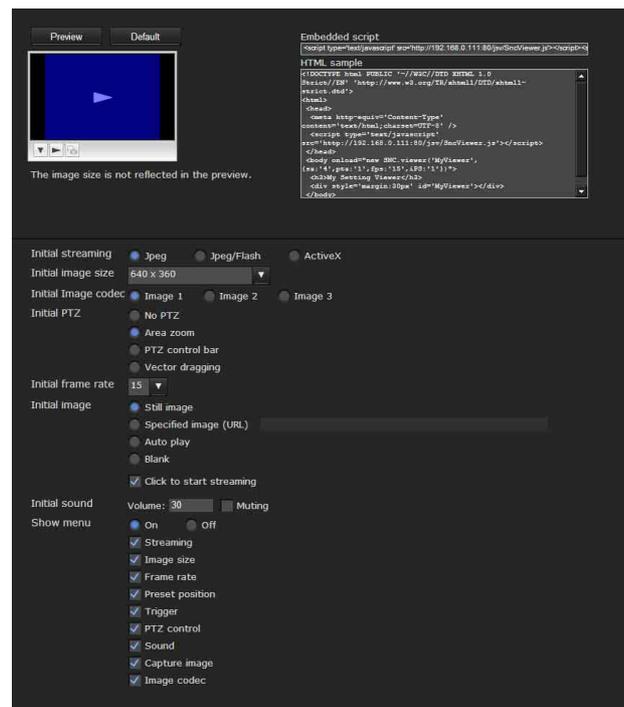
Monitor
Displays a preview.
Preview: Displays a preview on the monitor based on the current settings.
Default: Resets the setting to that set in Viewer - Layout tab.

> ### Note
>
> The selected image size is not used for the preview screen.

Embedded script
Displays the sample source for script.

HTML sample
Displays the sample source for HTML.

This section explains how to use the application software and commands, including the supplied CD-ROM.

Using the SNC toolbox

Explains the functions except those of the Network tab in SNC toolbox.

To install SNC toolbox, to assign an IP address and to set the network, see "Assigning the IP Address to the Camera" on page 6 in "Preparation".

Notes

- SNC toolbox may not operate correctly if you use a personal firewall or antivirus software in your computer. In this case, disable the software or assign an IP address to the camera using another method. For an example, see "Assigning the IP Address to the Camera Using ARP Commands" on page 89.
- If you are using Windows XP Service Pack 2 or later, Windows Vista or Windows 7, disable the Windows Firewall function. Otherwise SNC toolbox will not operate correctly. For the setting, see "Configuring Windows Firewall" in "When using Windows XP Service Pack 2 or later" on page 9, "Configuring Windows Firewall" in "When using Windows Vista" on page 11, or "Configuring Windows Firewall" in "When using Windows 7" on page 14.
- The model on sale in China does not support the SSL function.

Starting SNC toolbox

Select **Program** from the Start menu of Windows, then select **SNC toolbox** and **SNC toolbox** in sequence. SNC toolbox starts.
The main screen appears. SNC toolbox detects cameras connected to the local network and lists them on the Network tab window.

When you are using Windows Vista, message "User Account Control – An unidentified program wants access to your computer" may appear. In this case, click **Allow**.

How to use SNC toolbox

Menu bar   Function buttons

Device tree display   Device list   View button
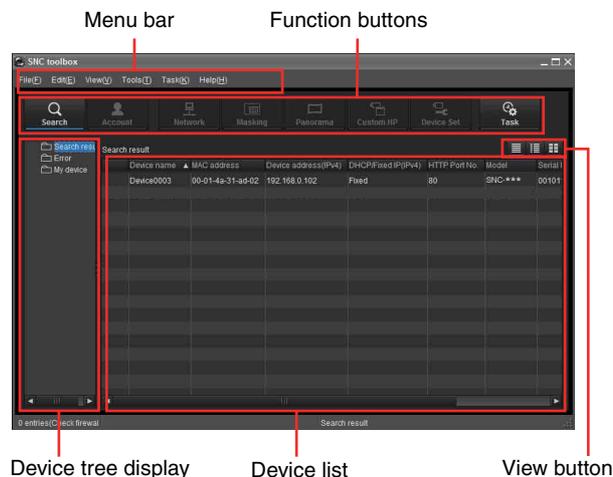
Menu bar
All functions can be selected from here.

File (F) menu
Import: Reads the Device list file (CSV format).
Export: Outputs the Device list in a CSV format file.
Close: Exits SNC toolbox.

Edit (E) menu
Cut: Cuts off a device or folder.
Copy: Copies a device or folder.
Paste: Pastes a device or folder.
Select All: Selects all devices in the Device list.
Add Folder: Creates a folder.
Add Device Entry: Manually registers a device.
Modify Device Entry: Edits the device information.
Remove: Removes a device from a folder.
Delete: Deletes a device or folder.

View (V) menu
Status Bar: Switches show/hide of status at the bottom of the screen.
Normal: Displays detailed information on a device.
Snapshot small: Displays detailed information on a device with a small thumbnail.
Snapshot large: Lists devices with large thumbnails.
Column Setting: Displays the setting screen for the items to display on the list.

Tools (T) menu
Search: Searches again for devices.
Device Account: Displays the management screen for user names and passwords related to the device.
Network Setting: Displays the screen for modifying the address settings for the selected device.
Device Setting: Displays the settings screen for the selected device.

Others

Privacy Masking: Displays the Privacy Masking screen.
Not available with this product.
Panorama Creator: Displays the Panorama Creator screen.
Not available with this product.
Custom Homepage: Displays the Custom Homepage screen.
Firmware Upgrade: Displays the Firmware Upgrade screen.
Initialize Device:
    Reboot: Restarts the device.
    Factory Default: Initializes the device to factory default.
Backup setting data: Backs up setting data on a computer.
Device Homepage: Connects to the device.
Device Log:
    System Log: Obtains system log for the device.
    Access Log: Obtains access log for the device.
Tool Log: Obtains SNC toolbox log.
Option: Displays the screen for modifying SNC toolbox settings.

Task (K) menu
Task List: Displays the Task list screen.
Add Task: Displays the Task Wizard screen.
Modify Task: Displays the Task editing screen.
Delete Task: Deletes task.

Help (H) menu
Version: Displays SNC toolbox version information.

Function buttons
Function buttons are used for updating lists and displaying dialog.

Search
Updates the Device list in the search result.
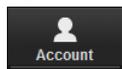
Account
Sets the administrator for each device.
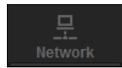
Network
Displays the **Network Setting** dialog.

Masking
Displays the **Privacy Masking** dialog.
Not available with this product.

Panorama
Displays the **Panorama Creator** dialog.
Not available with this product.
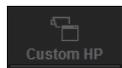
Custom HP
Displays the **Custom Homepage** dialog.

Setting
Displays the settings screen for the device.

Task
Displays the **Task List** dialog.

Device tree view
This function allows you to customize folders. The registration details of My device can be displayed in tree format.

Search result folder
When this folder is selected, devices in the same segment detected at time of startup or by **Search** are displayed in the Device list.

Error folder
When this folder is selected, devices registered in My device folder that can not be connected are displayed in the Device list.
Also, if a registered device is not found on the network, it will also be registered in this folder.

My device folder
When this folder is selected, devices in the Search result folder or registered manually are displayed in the Device list.

Device list
Devices registered in the folder selected at Device tree view are displayed in a list.

Device name
Displays individual device names.

Status (Only for Error folder and My device folder)
You can check the current connection status.

MAC address
You can check the MAC address of the device.

Device address
You can check the IP address of the device.

Port No.
You can check the port number of the device.

DHCP/Fixed IP
Displays whether the IP address of the selected device is DHCP or fixed IP.

Model
Displays the model name.

Serial No.
Displays the serial number.

Version No.
Displays the version of firmware.

Admin name
Displays the administrator user name.

Tips

• A camera with which SSL communication has been performed will show 🔒 on the left side of its IP address.
• The model on sale in China does not support the SSL function.

View button

You can change the display format of the Device list (page 82) .

Registering in My device

The device tree has three folders by default: **Search result**, **Error** and **My device**.
The **Search result** folder and **Error** folder are fixed, so you cannot edit the content or rename the folder.
The **My device** folder can be renamed, and you can add, delete and move folders.

Search result folder

Displays devices detected by search.

Error folder

Displays devices that are not connected.

My device folder

You can sort and manage devices using any folder.

Adding a folder

1   Select the parent folder to which you want to add a folder.

2   Right click the mouse and select **Add Folder** from the displayed menu.
A folder is added. Enter a folder name of your choice.

Registering a device

To register a device, follow the procedure below:
• Registering by **Add Device Entry** dialog
• Registering by drag & drop
• Registering by copy & paste

Registering by Add Device Entry dialog

1   Select the folder to register the device.

2   Right click the mouse and select **Add Device Entry** from the displayed menu.
The **Add Device Entry** dialog appears.
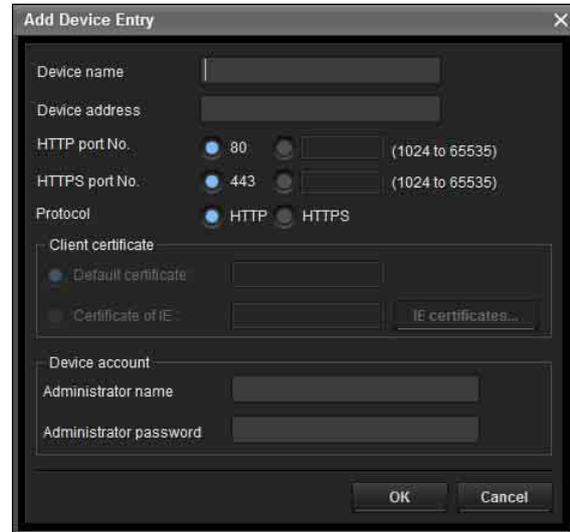
3   Enter the following items:
Device name: Enter a device name of your choice.
Device address: Enter the address of the device to register.
HTTP port No.: Normally, 80 should be selected. When setting a value other than 80, select the textbox and enter a port number.
HTTPS port No.: Normally select 443. When setting a value other than 443, select the textbox and enter a port number.
Device account: Enter the user name and password of the administrator who will access the device in the **Administrator name** field and **Administrator password** field, respectively.

4   Click **OK** to finish registration.

Registering by drag & drop

To add a device, select a device from the Device list in the Search result folder, and drag & drop to the folder to register it in.

Registering by copy & paste

Select a device from the Device list in the Search result folder and right click the mouse. Select **Copy** from the displayed menu (or select **Copy** from the **Edit** menu). Next, select the folder to register in and right click the mouse. Select **Paste** from the displayed menu.

Others

Renaming the device/folder

Select the folder or device to rename and right click the mouse. Select **Rename** from the displayed menu. The device/folder name is highlighted. Enter the new name.

Deleting a device/folder

Select the device/folder to be deleted from the Device list or Device tree and right click the mouse. Select **Delete** from the displayed menu (or select **Delete** from the **Edit** menu).

Moving a device/folder

You can move a device/folder by following either of the methods below:
- Select a device/folder from the Device list or Device tree and drag & drop in the folder to move it to, which will move the device/folder.
- Select a device/folder from the Device list or Device tree and right click the mouse. Select **Cut** from the displayed menu (or select **Cut** from the **Edit** menu). Next, select the folder to move to and select **Paste**.

Changing the Device list display method

Details display

Select **Normal** from the **View** menu or click ![icon] to set to the details display.
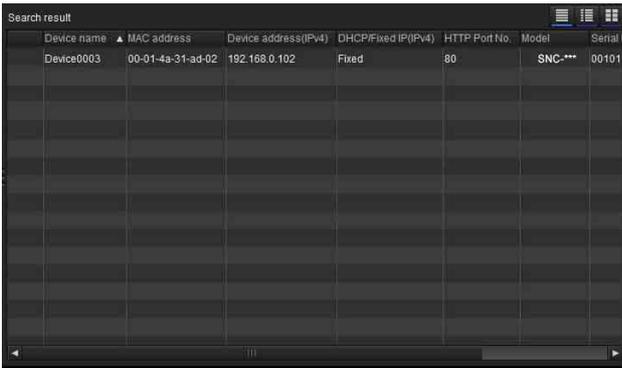
Details display with thumbnails

Select **Snapshot(S)** from the **View** menu or click ![icon] to set to the details display with thumbnails.
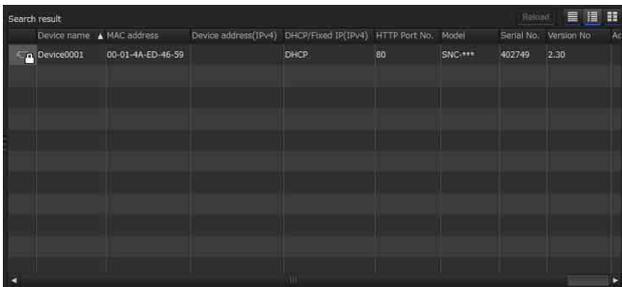
Display with large thumbnails

Select **Snapshot(L)** from the **View** menu or click ![icon] to set to display with large thumbnails.
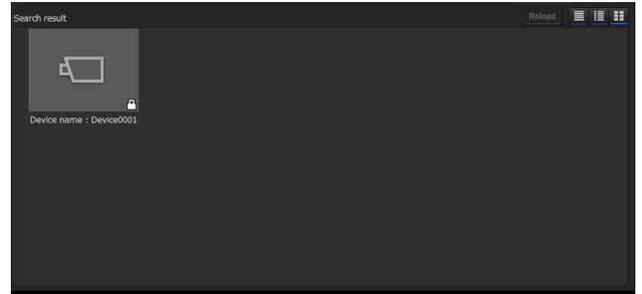
Modifying the items to show on list

Select **Column setting** from the **View** menu to display the "Column Setting" dialog.
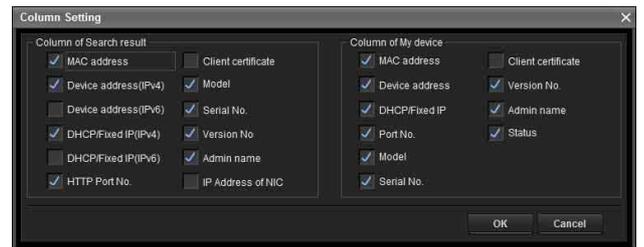
Check the items you want to display and remove the checks from items you want to hide.
Click **OK** after making the changes. The new setting is reflected on the list and the display returns to the main screen.

Updating thumbnail images

To display the thumbnail, select the camera of the thumbnail you wish to update and click **Reload** to display the current camera image as the thumbnail.

Setting SNC toolbox options

Select **Option** from the **Tools** menu to display the "Option" dialog. This dialog consists of three tabs: **General**, **Network** and **Log**.

General tab
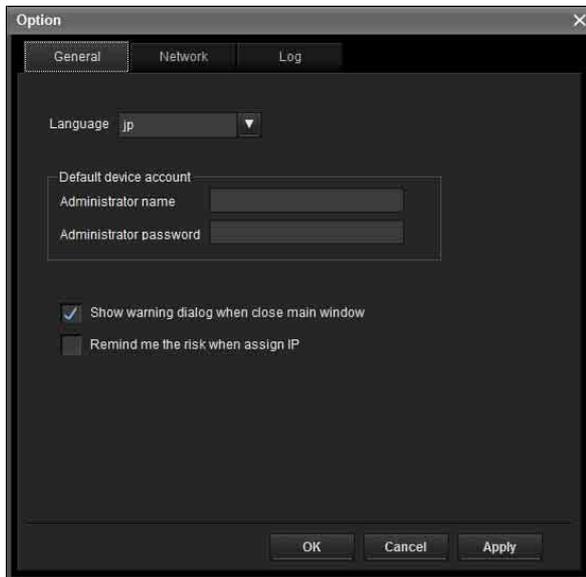
Language
Set language.

Default device account
Set the initial values of user name and password for the administrator accessing the device for each device.

Show warning dialog when closing main window: Select to display the warning message.
Remind me the risk when assigning IP: Select to display the warning message.

Network tab
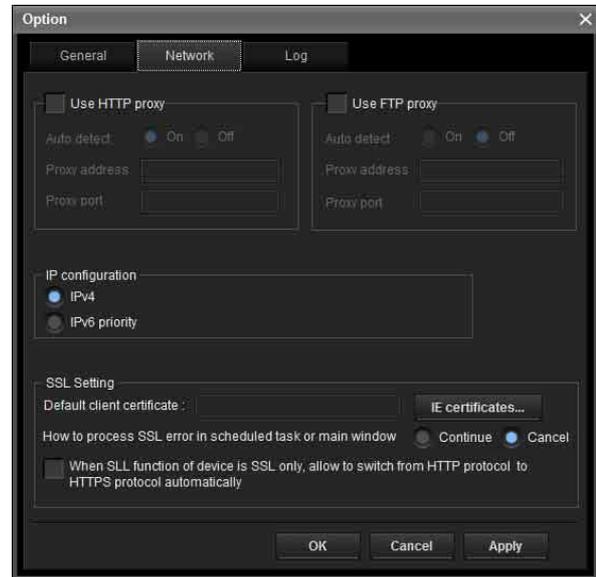
Configure the HTTP proxy and FTP proxy.
When using HTTP proxy, check **Use HTTP proxy**.
When using FTP proxy, check **Use FTP proxy**.
To auto-detect the proxy server, select **On** for **Auto detect**.
If you are not auto-detecting the proxy server, select **Off** for **Auto detect**, and enter the proxy address and proxy port number.

IP configuration
Select IPv4 or IPv6 priority for combined use of IPv6 and IPv4.

SSL Setting
Configure the SSL setting.
Default client certificate: Enter the client certificate to use.
How to process SSL errors in scheduled task or main window: Select **Continue** or **Cancel**.
When SSL function of device is SSL only, allow to switch from HTTP protocol to HTTPS protocol automatically: Check this box if necessary.

Notes

- When you have changed the SSL setting, restart the SNC toolbox.
- The model on sale in China does not support the SSL function.

Log tab
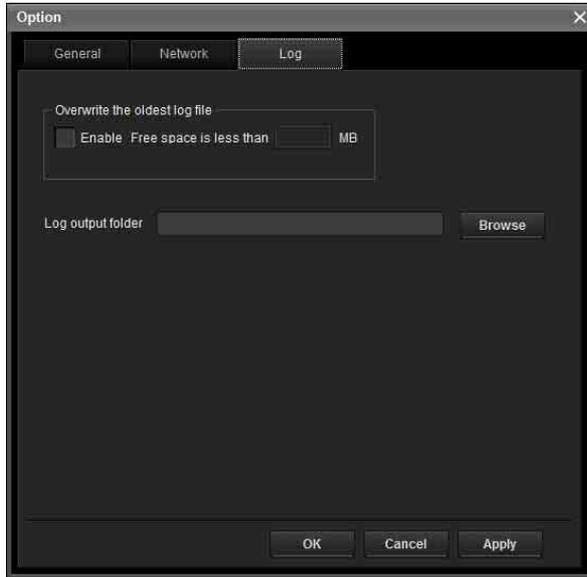
Overwrite the oldest log file

To set the size of the log file, check **Enable** and specify the minimum required space for a log file.

Log output folder

Click **Browse** to display the folder selection dialog. Specify the folder to save the log.

Using the Custom Homepage — Setting the customized homepage

The Custom Homepage function of the SNC toolox allows you to store the homepage that you have created in the camera and watch it.

Notes on creating the homepage

When you are creating the homepage, note the following points.
- The file name should be typed using up to 24 characters including the extension.
- The file size of the homepage should be 2.0 MB or less.
- To see the created homepage, set the **Homepage** in the Layout tab from Viewer menu.

Uploading the homepage to the camera using the Custom Homepage

1 Select the device to upload from the Device list. You can select multiple devices at the same time.

2 Click the **Custom Homepage**.
The "Custom Homepage" dialog opens.
Read the notes carefully.

Others

Note

If you cannot establish communications with the camera using the proxy server being used, connect the camera to the local network and run the Custom Homepage without using the proxy server.
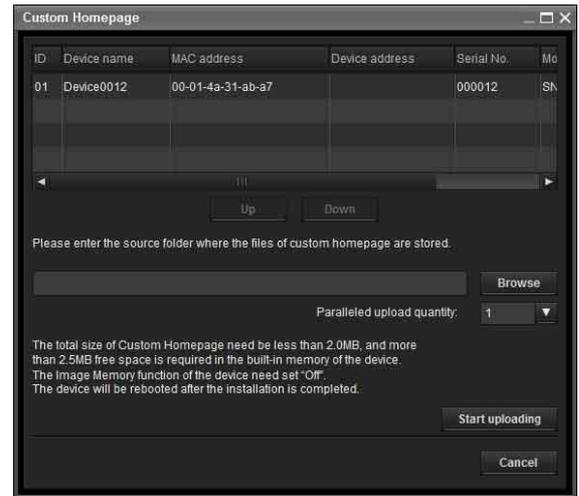
3 Type the path in which your homepage is stored.

4 Click **Start uploading**.
Uploading of the homepage file to the camera starts.

5 Click **Cancel** to exit the program.

Using the Firmware Upgrade

Using the Firmware Upgrade function of the SNC toolbox allows you to upgrade the firmware of the device.

Starting the Firmware Upgrade

1 Select the device to upgrade its firmware from the Device list.
You can select multiple devices at the same time.

2 Right click the mouse. Click **Firmware Upgrade** from the displayed menu.
The Firmware Upgrade screen is displayed.
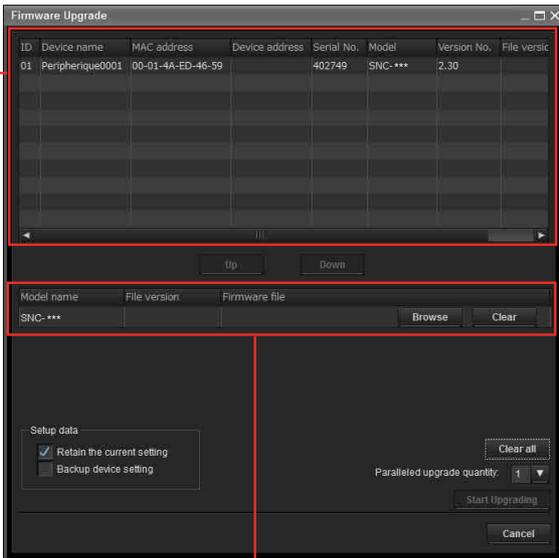
Device list   Module list

Tip

The Firmware Upgrade screen can also be displayed
using the following method:
• Select **Firmware Upgrade** from the **Tools** menu.

Device list

Select the device to upgrade.
A progress bar is displayed when updating is in process.
The status field shows current status.

Module list

To display the dialog, click the **Browse** button on the
right side of the model to update (listed in the module
list). Select the target SVU file from the dialog.
You can select one file for each model.

Updating

1 Set the order of devices perform update using **Up**
and **Down**.

2 Click **Browse** and select an upgrade file for each
model.

3 Select how many devices to upgrade in **Paralleled
upgrade quantity**.

4 To back up the camera setting, check **Backup
device setting**.

5 Click **Start upgrading**.
Upgrading starts.

Notes

• To stop upgrading, click **Stop upgrading**.
  To protect some devices, during the process of
  upgrading, upgrading cannot be canceled.
• Do not turn off the power until the device restarts after
  upgrading.

Using the Schedule Task

You can specify the time or interval to change the Device
setting or perform Firmware upgrade.
Click **Task** to display the Task List, which shows a list
of scheduled executable tasks.
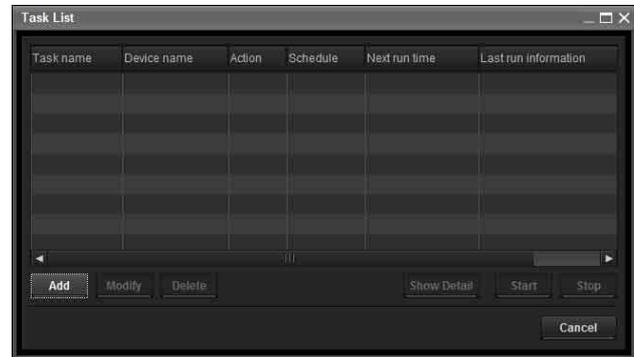
Task List

Displays the list of scheduled executable tasks.

Add

Displays the Task Wizard.

Modify

You can edit a task.

Delete

You can delete a task.

Start

Reserves a task.

Stop

You can cancel a task reservation.

Cancel

Closes the Task List.

Creating a task

1 Click **Add**.

Displays **Task Wizard**.
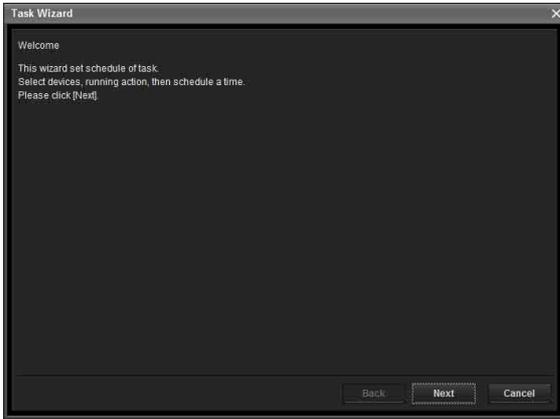
2 Click **Next**.

3 Select a device to which the task is assigned.
A list of devices registered in My device is displayed. Select the device you want to assign the task to from the My device list, and register in Device(s) in task list.
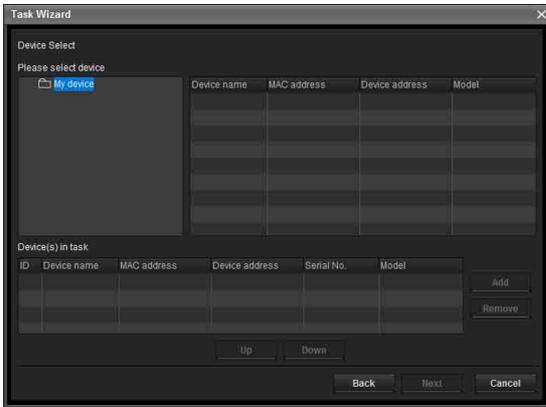
My Device: Display a list of cameras registered in My devices.
**Device(s) in task:** Display a list of devices set to execute a task.
Add: Register a device in Device(s) in task.
Remove: Removes a device from Device(s) in task.
Up/Down: Changes the order of devices in Device(s) in task.

4 Click **Next**.

5 Select the task action.

Select **Device Setting** or **Firmware Upgrade**.
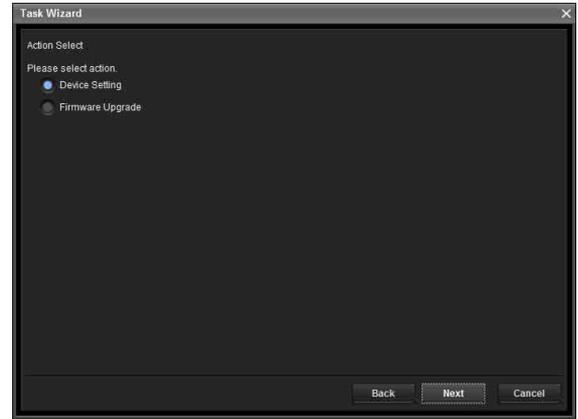
6 Click **Next**.

For Device Setting:
Edit the value for the setting you wish to change.
See "Device Setting" on page 87 for changing the values.
Click **Next** to display the confirmation screen for setting change. Check to see if the setting is correct. If correction is needed, click **Back** to return to the previous screen to redo the setting.

For Firmware Upgrade:
Set the firmware for the device you want to upgrade.
See "Using the Firmware Upgrade" on page 84 for setting firmware.

7 Click **Next**.

8 Set the schedule.
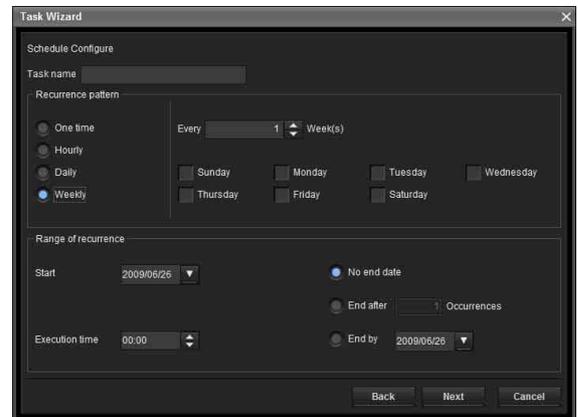
Task name
Name the task.

Recurrence pattern

Specify the operation interval.
Onetime: Runs the task once.
Hourly: Specify the operation frequency in units of hours. (Possible set value: 1 to 99)
Daily: Specify the operation frequency in units of days. (Possible set value: 1 to 99)
Weekly: Specify the operation frequency in units of weeks and days of the week. (Possible set value: 1 to 99)

Range of recurrence

Specify the starting date and time, and the end date and time.
Start: Set the starting date.
Execution time: Set the starting time.
No end date: This setting does not set an end date.
End after: Specify the number of times to execute the operation.
End by: Set the end date.

9 Click **Next**.

Check the setting when the final confirmation screen for task setting is displayed.
If correction is needed, click **Back** to return to the previous screen to redo the setting.

10 Click **Finish**.

Configuring the device setting

You can configure advanced settings for a device on the Device Setting screen.
When you select a device(s) on the Device list and select **Device Setting** from the **Tools** menu, or when you right click on the device selection screen and click **Device Setting** in the displayed menu, the Device Setting screen is displayed.

Display sample:
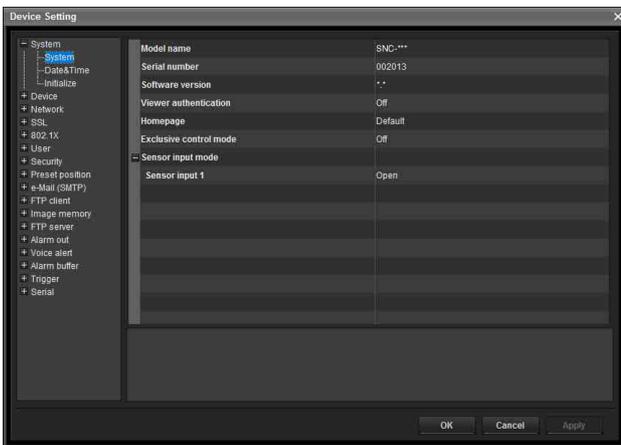
Setting tree

All settings are sorted into categories. Click + to display the subcategories under a category. Click – to hide the subcategories.
Select a subcategory to display setting items on the right side of the screen.

Item

Displays the setting items. Select a line to change its value.

Value

Displays the value of an item. Select or enter a value to change the value.

Explanation

Displays the range of value for setting and supplementary explanations.

OK

Apply the setting and close the Device Setting screen. The main screen of SNC Toolbox is displayed.

Cancel

Close the Device Setting screen without changing the setting. The main screen of SNC Toolbox is displayed.

Apply

Apply the setting.

Other settings

See the relevant pages in "Administrating the Camera" when configuring the settings.

Setting items		Pages to refer to in "Administrating the Camera"
System		"Configuring the System — System Menu" on page 34
	System	"System Tab" on page 34
	Date	"Date & time Tab" on page 35
	Superimpose	"Superimpose Tab" on page 35
	Installation	"Installation Tab" on page 36
	Initialization	"Initialize Tab" on page 37

Setting items		Pages to refer to in "Administrating the Camera"
Camera		"Setting the Camera Image — Camera Menu" on page 38
	Picture	"Picture Tab" on page 38
	Day/Night	"Day/Night Tab" on page 40
	Video codec	"Video codec Tab" on page 40
	Streaming	"Streaming Tab" on page 43
Network		"Configuring the Network — Network Menu" on page 44
	Network	"Network Tab" on page 44
	QoS	"QoS Tab" on page 45
	IP address notification	"Dynamic IP address notification Tab — Notifying the IP Address" on page 47
SSL		"Setting the SSL function — SSL Menu" on page 49
	Common	"Common tab" on page 49
	CA certificate	"CA certificate tab — Adding the CA certificate for client authentication" on page 51
802.1X		"Using the 802.1X Authentication Function — 802.1X Menu" on page 54
	Common	"Common Tab — Basic setting of 802.1X authentication function" on page 54
	Client certificate	"Client certificate Tab" on page 55
	CA certificate	"CA certificate Tab" on page 56
User		"Setting the User — User Menu" on page 60
Security		"Setting the Security — Security Menu" on page 61
Preset position		"Saving the Camera Position and Action — Preset position Menu" on page 61
	Position	"Position Tab — Saving pan/tilt/zoom position" on page 61
	Preset tour	"Preset tour Tab — Setting a position tour" on page 63

Setting items		Pages to refer to in "Administrating the Camera"
e-Mail (SMTP)		"Sending an Image via E-mail — e-Mail (SMTP) Menu" on page 64
	Common	"Common Tab — Setting the e-Mail (SMTP) Function" on page 64
	Alarm sending	"Alarm sending Tab — Setting the e-mail sending mode when detecting the alarm" on page 66
	Periodical sending	"Periodical sending Tab — Setting the periodical e-mail sending mode" on page 67
FTP client		"Sending Images to FTP Server — FTP Client Menu" on page 68
	Common	"Common Tab — Setting the FTP client function" on page 68
	Alarm sending	"Alarm sending Tab — Setting the FTP client action when detecting the alarm" on page 68
	Periodical sending	"Periodical sending Tab — Setting the periodical FTP client activity" on page 69
Trigger		"Setting the Operations from the Viewer — Trigger Menu" on page 71
Event detection		"Setting the Sensor input/ Camera tampering detection/Motion detection — Event detection Menu" on page 73
	Sensor input	"Sensor input tab — Set the sensor input" on page 73
	Camera tampering detection	"Camera tampering detection tab — Set the camera tampering detection" on page 73
	Motion detection	"Motion detection tab — Set the motion detection" on page 73

Camera restart and initialization

You can restart and initialize (restore factory default) a selected camera. Multiple devices can be selected simultaneously for restart and initialization.

Restarting a camera

Click **Tools**, **Initialize Device** and **Reboot** in this order on the menu bar to restart the camera.

Others

Initializing a camera

Click **Tools**, **Initialize Device** and **Factory Default** in this order on the menu bar to initialize the camera (restore factory default).

Assigning the IP Address to the Camera Using ARP Commands

This section explains how to assign an IP address to the camera using ARP (Address Resolution Protocol) commands without using the SNC toolbox.

Note

When you turn on the camera, execute the ARP and PING commands within 5 minutes. Also when you restart the camera, execute the operation within 5 minutes.

1 Open the command prompt on the computer. When using Windows Vista, right click **Command prompt** in **Start-All Programs- Accessories**, and select **Run as administrator**.

2 Enter the IP address and the MAC address of the camera to assign a new IP address, using the following ARP commands.

```
arp -s <Camera's IP address> <Camera's MAC address>
ping -t <Camera's IP address>
```

Example:

```
arp -s 192.168.0.100 08-00-46-21-00-00
ping -t 192.168.0.100
```

3 When the following line is displayed on the command prompt, hold down **Ctrl** and press **C**. Display stops.

```
Reply from 192.168.0.100:bytes=32 time...
```

You will normally receive a reply after about 5 repetitions of "Request time out".

4 Wait until the execution of PING finishes, then input the following code.

```
arp -d 192.168.0.100
```

Note

If you do not receive a reply, check the following:
– Did you enter the ARP commands within 5 minutes after it was turned on?
 If not, turn off the camera and restart the operation.
– Is a NETWORK indicator turned on?
 If the indicator goes off, the network connection has a problem. Connect the network correctly.
– Did you enter the IP address previously used for another device?
 Assign a new IP address to the camera.

Others

– Do the computer and the camera have the same network address?
If not, set the same network address on the computer and the camera.

Using the SNMP

This unit supports SNMP (Simple Network Management Protocol). You can read MIB-2 objects using software such as SNMP manager software. This unit also supports the coldStart trap which occurs when the power is turned on or the unit restarts, and the Authentication failure trap, which informs of any illegal access using SNMP.
Using CGI commands, you can set the community name and access limitation, host to send traps, and some MIB-2 objects. To allow these settings, you need authentication by the camera administrator.

1. Inquiry Commands

You can check the SNMP Agent settings using the following CGI commands.

<Method>
　　GET, POST
<Command>

　　http://ip_adr/snmpdconf/inquiry.cgi?inqjs=snmp
　　(JavaScript parameter format)

　　http://ip_adr/snmpdconf/inquiry.cgi?inq=snmp
　　(standard format)

With the above inquiry, you can obtain the following setting information. The following explains the setting information using the inqjs=snmp (JavaScript parameter) format.

```
var sysDescr="Model name"                       ...①
var sysObjectID="1.3.6.1.4.1.122.8501"          ...②
var sysLocation=""                              ...③
var sysContact=""                               ...④
var sysName=""                                  ...⑤
var snmpEnableAuthenTraps="1"                   ...⑥
var community="1,r,public,0.0.0.0,v2c"          ...⑦
var community="2,r,private,192.168.0.101,v2c"   ...⑧
var trap="1,public,192.168.0.101,v2c"           ...⑨
```

① Describes the case of "mib-2.system. sysDescr.0". You cannot change this parameter.

② Describes the case of "mib-2.system. sysObjectID.0". You cannot change this parameter.

③ Describes the case of "mib-2.system. sysLocation.0". This field is used to describe information on the location of this camera. Nothing is set at the factory.

④ Describes the case of "mib-2.system. sysContact.0". This field is used to describe information on the administrator of this camera. Nothing is set at the factory.

⑤ Describes the case of "mib-2.system. sysName.0". This field is used to describe the administration node of this camera. Nothing is set at the factory.

⑥ Describes the case of "mib-2.snmpEnable AuthenTraps.0". This example shows when "1" (enable) is set. In this setting, a trap occurs when there is an authentication failure. When "2" (disable) is set, no authentication failure trap occurs.

⑦ Describes the community attributes. This example shows the identification number "ID=1", the community name "public", and enables read from any IP address (0.0.0.0).

⑧ Describes the community attributes, similar to ⑦. This example shows the identification number ID=2, the community name "private", and enables reading by SNMP request packet from the host "192.168.0.101".

⑨ Describes the attributes to send a trap. This example shows the identification number "ID=1", the community name "public", and enables sending of traps to the host having the IP address "192.168.0.101".

2. Setting Commands

The unit supports the following SNMP setting commands.

<Method>
    GET, POST
<Command>

    http://ip_adr/snmpdconf/snmpdconf.cgi?
    <parameter>=<value>&<parameter>=...&...

First, perform the settings of the following parameters.

1) sysLocation=<string>
    Set the case of "mib-2.system.sysLocation.0" in the <string> position. The maximum length of <string> is 255 characters.

2) sysContact=<string>
    Set the case of "mib-2.system.sysContact.0" in the <string> position. The maximum length of <string> is 255 characters.

3) sysName=<string>
    Set the case of "mib-2.system.sysName.0" in the <string> position. The maximum length of <string> is 255 characters.

4) enaAuthTraps=<value>
    Set the case value of "mib-2.snmp.snmp EnableAuthenTraps.0" in the <string> position. Type "1" (enable) or "2" (disable) in the <value> position.

5) community=<ID>,r, <communityName>,<IpAddressString>
    Set the community attributes. <ID> describes the setting identification number (1 to 8) <communityName> describes the community name to be set, and <IpAddressString> describes the IP address of the host you allow access (0.0.0.0 for any host).
    Example: To allow reading by any host in the "private" community and having the ID number "2".
    community=2,r,private,0.0.0.0

6) trap=<ID>,<communityName>, <IpAddressString>
    Set the attributes to send traps to. <ID> describes the setting identification number (1 to 8), <communityName> describes the community name to send traps to, and <IpAddressString> describes the IP address of the host to send traps to.
    Example: To specify the destination of traps as the public community and the ID number "1".
    trap=1,public,192.168.0.101

7) delcommunity=<ID>
    This parameter is used to delete the previous community setting. <ID> describes the community setting identification number (1 to 8).

8) deltrap=<ID>
    This parameter is used to delete the previous setting of the host to send traps to. <ID> describes the trap setting identification number (1 to 8).

When you have finished changing the SNMP setting information using the above parameters 1) to 8), check the changed settings using an inquiry command. If the changed settings are OK, restart the SNMP using the following CGI command.

SNMP restart command
<Method>
    GET, POST
<Command>

    http://ip_adr/snmpdconf/snmpdconf.cgi?
    snmpd=restart

Others

Glossary

ActiveX control

A component program object that can be used with web pages or other application programs. The technology for creating ActiveX control is part of software developed by Microsoft.

AES

Abbreviation for Advanced Encryption Standard. This is the next-generation standard of encryption, adopted by the U.S. government.

ARP commands

The commands for checking the entry of the IP address and MAC address in a host computer, or for updating them.

Bandwidth control

To limit the amount of transmitted data.

Bit rate

The rate at which data bits are transmitted.

CA (Certificate Authority)

A private authority that issues and controls digital certificates to be used for authentication regarding network access.

Capture

To send audio and video converted to digital data from video devices to a computer.

Codec

Software/hardware for coding/decoding video and audio data.

Common name

A URL to be typed in the browser when you access a website employing SSL (Secure Sockets Layer) protocol with the security function. Access is successful after the URL of the website is verified as matching the server's common name.

Contrast

The difference in tone between the lightest and darkest portions of the image.

Default gateway

Device that can be used to access another network.

DHCP server

Acronym for Dynamic Host Configuration Protocol server. The IP address of a terminal without an individual IP address can be automatically distributed by the Dynamic Host Configuration Protocol (DHCP). The DHCP server assigns the IP addresses to the terminals.

Digital certificate

An electronic certificate that a CA (Certificate Authority) attests that a public key to cancel a secret code is issued by an authentic publisher.

Digital zoom

Zooming in/out function of an image without using an optical zooming function.

DNS server

Acronym for Domain Name System server. As an IP address required for connecting to the device on an IP network is numerical and difficult to remember, the Domain Name System was established. A domain name is alphabetic and is easier to remember. When a client computer uses a domain name to connect to another computer, it asks a DNS server to translate the name into the corresponding IP address. The client computer can then obtain the IP address of the computer to be connected.

EAP method

Acronym for Extensible Authentication Protocol. This is a protocol extended from PPP (Point-to-Point Protocol) and having an authentication function.

EAP-TLS authentication

TLS is an authentication protocol of the EAP methods using Transport Layer Security. By using digital certificates and other methods, EAP-TLS prevents data falsification, eavesdropping and spoofing.

Frame rate

The number of frames of a moving image that can be transmitted per a second.

FTP client

Software to be used for accessing the FTP server.

FTP server

A server to be used to transfer files via a network.

HTTP port

A port used to communicate between the web server and the web client, such as a web browser.

H.264

An image compression format. The standard written by the JVT (Joint Video Team) a joint organization for standardization (composed of ISO and ITU-T. H.264), is capable of transmitting video data at a higher compression rate than that of MPEG4.

IP address

Acronym for Internet Protocol Address. An individual IP address is basically assigned to each piece of equipment connected to the Internet.

JPEG

Acronym for Joint Photographic Expert Group. The still image compression technology or standards of ISO (International Organization for Standardization) and ITU-T. Popularly used as an image compression format on the Internet, etc.

MAC address

A network address that uniquely identifies each LAN card.

MPEG4

Acronym for Moving Picture Experts Group4. One of the MPEG standards for image compression format aiming to transmit images at a high compression rate with lower picture quality.

Multicast

The class D IP address assigned between 224.0.0.0 and 239.255.255.255. Using this IP address enables you to transmit the same data to multiple equipment.

Network address

The portion that identifies the local network (subnet) in an IP address.

Network bandwidth

Bit rate that can be used for networking.

NTP server

Network time server that transmits and receives time information over the networks.

Passive mode

The mode whereby a client FTP allows TCP connection for data transmission to the FTP server.

POP server

A server for storing incoming e-mail until you have read it.

Primary DNS server

One of the DNS servers that can first reply to a request by connected devices or other DNS servers.

Proxy server

A server or software that acts as an intermediary between a local network and the Internet so that it can connect to the Internet in place of a computer on a local network.

PSK

Abbreviation for Pre-Shared Key. This is a shared key to make an encryption key, used with TKIP in WPA encryption standard. PSK sometimes means an authentication system using a key previously shared.

QoS

Enter a value in the DSCP (Differential Service Code Point) field included in the IP header to control communication service quality.

RADIUS client

RADIUS (Remote Authentication Dial-in User Service) is an authentication and accounting protocol managing network access, and a RADIUS client is a party that accesses the network.
In Internet connecting service, a Network Access Server (NAS) such as that for dial-up and broadband access server is a RADIUS client. In a wireless LAN system, a wireless LAN access point is a RADIUS client.

Saturation

The degree to which a color is pure.

Secondary DNS Server

Subsidiary DNS server used when a primary DNS server cannot be used.

Shared secret

A character string to be used for mutual authentication between a RADIUS server and RADIUS client.

Sharpness

The degree to which the boundary of two portions is clearly distinguished.

SMTP server

A server for sending or relaying e-mail messages between servers.

SNMP

A protocol for monitoring and managing network devices.

SSL

Acronym for Secure Sockets Layer. This is a protocol developed by Netscape Communications Corporation to be used for communications of encrypted data on the Internet.

Subnet mask

32-bit stream used to distinguish the subnet address from an IP address.

TCP

Acronym for Transmission Control Protocol. A standard protocol used for Internet connection. Compared with the other protocol, UDP, TCP provides reliable communication but communication speed is slower.

TKIP

Acronym for Temporal Key Integrity Protocol. This is used in WPA encryption for a wireless LAN. TKIP provides high security since it changes encryption keys based on PSK during on-going communication.

UDP

Acronym for User Datagram Protocol. A standard protocol used for Internet connection. Compared with the other protocol, TCP, UDP can transmit data faster, but reliable communication is not guaranteed.

Unicast

Transmission of data to specified equipment on a network by specifying a single address.

WPA

Acronym for Wi-Fi Protected Access. This is an encryption standard for a wireless LAN. It provides higher security than the conventional WEP (Wired Equivalent Privacy) standard. In WPA, TKIP is used for the encryption method, and PSK and EAP are used for the authentication protocol.

WPA2

Abbreviation for Wi-Fi Protected Access 2. WPA2 is a standard with which AES (Advanced Encryption Standard) is added to WPA.

802.1X

A standard that performs user authentication and dynamic key generation and traffic on a LAN.

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