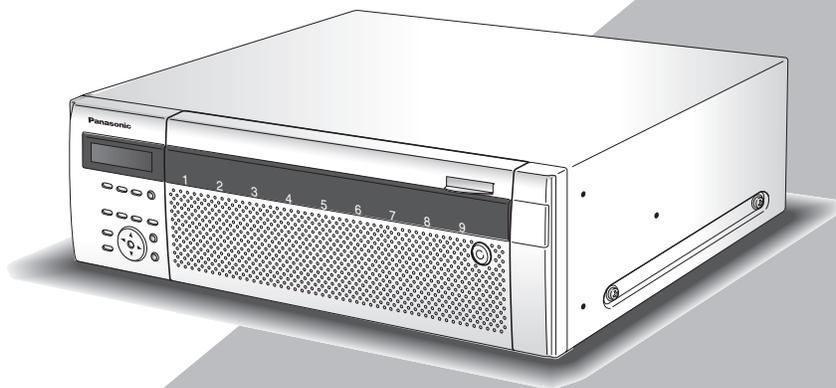


Panasonic

Network Disk Recorder

Setup Instructions

Model Nos. **WJ-ND400K**
WJ-ND400K/G



Before attempting to connect or operate this product,
please read these instructions carefully and save this manual for future use.

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Preface

The Network Disk Recorder (WJ-ND400) is for recording images and audio from network surveillance cameras to a hard disk (hereafter HDD). It is possible to connect up to 64 cameras over a network.

Also, it is possible to access and operate the recorder via a network from the web browser on a computer (hereafter PC). A maximum of 16 PCs can be connected (via a network).

- The network settings for the PC need to be done to do settings and operations from the PC. A web browser must also be installed.

About these Operating Instructions

There are four manuals, they include the Installation Guide, Setup Instructions (PDF file), Operating Instructions (PDF file), and the Quick Reference Guide.

- Installation Guide : How to configure required settings and connect the equipment.
- Setup Instructions (PDF file) : How to configure required settings and connect the equipment to perform operations from a PC over a network.
- Operating Instructions (PDF file) : How to perform operations from a PC.
- Quick Reference Guide : Basic settings and frequently used functions.

Adobe® Reader is required to refer to the “Operating Instructions” and the “Setup Instructions” on the provided CD-ROM. When the Adobe® Reader is not installed on the PC, download the latest Adobe® Reader from the Adobe web site and install it.

In this manual and on the screen, the ND400 and the recorder are shown as WJ-ND400.

Refer to the "readme.txt" file on the CD-ROM bundled with the recorder for information about the versions and types of separately available software and cameras supported.

The following abbreviations are used in this document.

Microsoft® Windows Vista® Business (32-bit) is called Windows Vista®.

Microsoft® Windows® XP Professional SP2, and Microsoft® Windows® XP Home Edition SP2 are called Windows® XP.

System Requirements for a PC

It is recommended to operate this unit using a PC that meets the following system requirements.

- OS : Microsoft® Windows Vista® Business (32-bit)
: Microsoft® Windows® XP Professional SP2`
: Microsoft® Windows® XP Home Edition SP2`
- OS Language : English, French, Spanish, German, Italian, Russian, Chinese
- CPU : Pentium® 4 3.0 GHz or faster
- Memory : 1 GB or more (512 MB or more is required when using Microsoft® Windows® XP.)
- Monitor : Resolution: 1 024 x 768 pixels or more
Color: 24-bit True color or better
- Network interface : 10/100/1 000 Mbps Ethernet port x1
- Web Browser : Windows® Internet Explorer® 7.0
: Microsoft® Internet Explorer® 6.0 SP2`
- Audio interface : Sound card (when using the audio function)
- Other : CD-ROM drive: It is necessary to refer to the operating instructions and use the software on the provided CD-ROM.
: DirectX® 9.0c or later
: Adobe® Reader®: It is necessary to refer to the operating instructions on the provided CD-ROM.

* Microsoft® Internet Explorer® 6.0 SP2 is required when using Microsoft® Windows® XP Professional SP2 or Microsoft® Windows® XP Home Edition SP2.

Important:

- When using a PC that does not meet the above requirements, displaying of images may become slow or the web browser may become inoperable.
- Audio may not be heard if a sound card is not installed on a PC. Audio may be interrupted depending on the network environment.
- Refer to "Notes on Vista™" (PDF) for further information about system requirements for a PC and precautions when using Microsoft® Windows Vista®.

Trademarks and Registered Trademarks

- Adobe and Reader are either registered trademarks or trademarks of Adobe Systems Incorporated in the United States and/or other countries.
- Microsoft, Windows, Windows Vista, Internet Explorer, ActiveX, DirectX are either a registered trademark or trademark of Microsoft Corporation in the United States and/or other countries.
- Intel and Pentium are trademarks or registered trademarks of Intel Corporation and its subsidiaries in the USA and other countries.
- Other names of companies and products contained in these operating instructions may be trademarks or registered trademarks of their respective owners.

Restrictions when operating MPEG-4 images

There are following restrictions when "MPEG-4" is selected for the image compression method on the setup menu. ("NW camera" under "Camera")

1. When displaying live images

- (1) Black screen may be displayed for the first few seconds (*) when the following operations are performed while displaying live images.
 - When MPEG-4 live images are displayed (by switching camera channel, etc.)
 - When MPEG-4 image is enlarged (or when enlarged MPEG-4 image is resized to the original size)
- (2) It may take several seconds (*) for refresh interval of MPEG-4 image when displaying images on a 4-screen.

Example: When "3 seconds" is selected for the refresh interval on the camera, MPEG-4 image will be refreshed in 3 seconds intervals.

2. When displaying images sequentially

When "MPEG-4" is selected for the image compression method of the camera selected for a camera channel on the setup menu, the respective sequence step will be skipped.

3. When playing recorded images

- (1) Displayed playback time may be fast for several seconds (*) when the following operations are performed while playing recorded images
 - When MPEG-4 recorded images are played (by changing camera channel, etc.)
 - When MPEG-4 image is enlarged (or when enlarged MPEG-4 image is resized to the original size)
(When operating to zoom in/out a paused MPEG-4 recorded image, image of several seconds later than the displayed image may be enlarged.)
 - When the [PLAY] button is clicked again while playing MPEG-4 image
 - When the first frame is displayed by clicking the [NEXT IMAGE] button during pausing
- (2) Playback may be performed in several seconds intervals (*) when the following operations are performed while playing MPEG-4 image. Refer to the Operating Instructions (PDF file) for further information.
 - Reverse playback ([REV PLAY])
 - Fast playback/fast reverse playback ([FF] / [REW])
 - Reverse frame playback ([PREV IMAGE])

Example: When "3 seconds" is selected for the refresh interval on the camera, MPEG-4 image will be played in 3 seconds intervals.

- (3) When two records are played sequentially, the last few frames of the former record and the first few frames of the next record may be displayed overlapped.
- (4) When playing MPEG-4 image by designating time and date, playback may start from a point several seconds before or after the designated time and date or from the first frame of the next record.

4. When recording images

- (1) Time and date displayed on the recording event list (actual start time of recordings) may not exactly indicate the actual time of recording trigger (event occurrence time, start time of the schedule recording, etc.), and also the recording duration may be shortened for seconds worth two times of the refresh interval set on the camera.

Example: When the set recording duration and the set refresh interval of the camera are 10 seconds and 1 second respectively

$$10 - (1 \times 2) = 8 \text{ (sec)}$$

The minimum actual recording duration is 8 seconds.

- (2) When pre-event recording is set to be performed, pre-event recording duration may be longer than the set duration.

Example: Depending on the size of the image data, pre-recording duration may be around 10 seconds even when setting 5 seconds for the pre-event recording duration.

5. When copying images

Copying may start from a point several seconds (*) later than the designated start time when copying MPEG-4 images. To copy the desired images for sure, designate start time several seconds earlier than the time when the desired images are recorded, and set time range for copying longer than the refresh interval set on the camera.

6. When downloading recorded images

Download of recorded images may start from a point several seconds (*) earlier than the designated start time. Set time range for download longer than the refresh interval set on the camera.

7. When transmitting images recorded at an event occurrence to the FTP server

Duration of images to be transmitted to the FTP server, which are recorded at an event occurrence, may not be exactly the same as the duration set for "Duration-Pre" and "Duration-Post". Set "Duration-Pre" and "Duration-Post" longer than the refresh interval set on the camera.

8. Other

MPEG-4 images will not be attached to alarm mails.

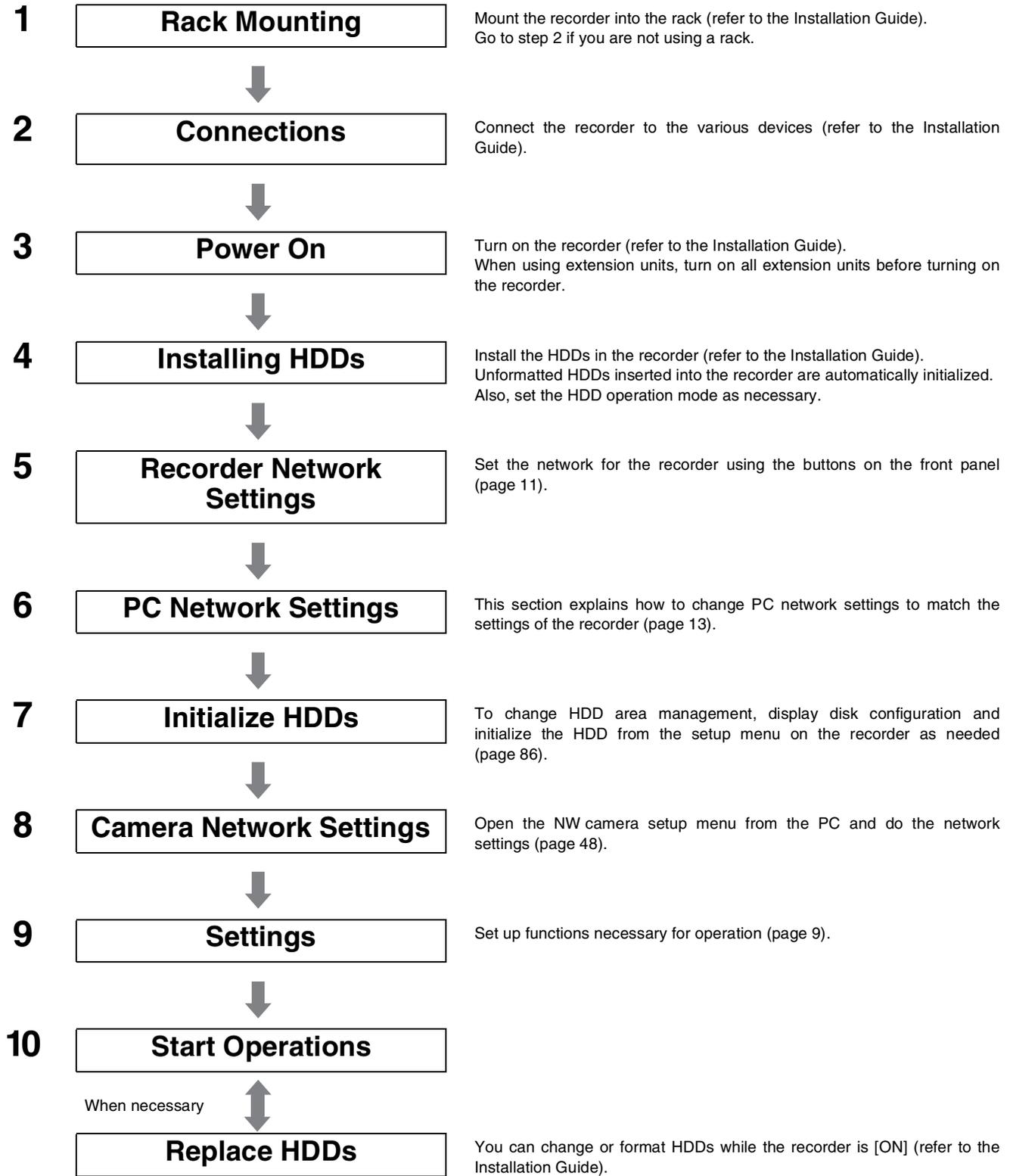
Even when images are to be transmitted to the FTP server periodically, MPEG-4 images will not be transmitted.

* Time (seconds) differs depending on the refresh interval set on the camera (0.2 - 5 seconds). To shorten time lag, set the refresh interval on the camera shorter. Refer to the operating instructions of the camera for how to configure the refresh interval.

Getting started

Setup procedure

The procedure to start operations is shown below.



Setup menu list

You must pre-configure settings from the setup menu when using the recorder. To display the setup menu, click the [Setup] button.

Setting item	Description	Page
Quick		
Setup	Display a menu with the minimum settings necessary to use the recorder.	page 26
Basic		
Basic	Set the basic operations for the recorder.	page 31
Time & date	Set the time and date.	page 32
Emergency rec.		
Emergency rec.	Set the emergency recording duration, rate, audio, etc.	page 34
Event		
Basic	Set the basic setting for alarm action.	page 38
Terminal input	Set the alarm action when an event occurs.	page 39
Site alarm	Set the alarm action when a Site alarm occurs.	page 40
Command alarm	Set the alarm action when a Command alarm occurs.	page 41
Schedule		
Time table	Configure time table settings to schedule operations for each day of the week, and assign each time table to a program.	page 46
Program	Create a recording operation program. You can create up to 8 programs. Set recording operations in each program, including the recording rate and audio recording, for each camera channel.	page 42
Special days	Assign separate time tables for each day of the week for special days.	page 47
Camera		
NW camera	Configure camera network settings, including the camera address and port number.	page 48
Group	Set the group title of a camera.	page 52
Sequence	Set camera sequence operations.	page 53
Server		
NTP	Configure settings, such as the NTP server address, for time adjustment based on the NTP server.	page 55
FTP	Set the FTP server. Configure to periodically send images from a camera connected to the recorder to a specified FTP server.	page 56
Mail	Set to send e-mails to registered addresses when an event or an error occurs.	page 58
Proxy	Set the proxy server. Set On or Off for the proxy server and set the server address.	page 60
Network		
Basic	Configure the basic settings for the network. Configure network configuration settings like the IP address, default gateway and DNS server.	page 61
DDNS	Set the DDNS server. Set On or Off for the DDNS server and set user names.	page 65
SNMP	Set the SNMP server. Configure these settings when connecting to an SNMP manager and check the status of the recorder.	page 66
Panasonic alarm protocol	Set to send a message to registered addresses when an event or an error occurs using our original communication method.	page 67

Getting started

Setting item	Description	Page
User mng.		
Basic	Set whether user and host authentication should be performed.	page 68
Administrator	Edit registered administrator information such as the administrator name, password, and start monitor.	page 69
User	Edit or delete registered user information and register uses who can operate the recorder. You can also set the operation level, user name, and password.	page 70
Host	Edit or delete registered host information and register PCs (hosts) that can access the camera over a network. You can also set the operation level and the IP address of the PC.	page 72
User level	Set the functions available at each user level.	page 74
Maintenance		
Product information	Display the version of the software and hardware, the MAC address, serial number, and the internal temperature of the recorder.	page 76
Disk information	Displays information about recording, the disk operational mode, disk space capacity, and the recording area.	page 77
Network information	Display network information such as the camera address set on the recorder and the line speed of the recorder.	page 79
Disk	Set operations for when the HDD is full and perform deletion of data stored on the HDD.	page 80
Settings management	Save, load and initialize the content of the setup menu on the recorder.	page 82
Config.		
Disk information	Displays information about recording, the disk operational mode, disk space capacity, and the recording area.	page 84
Format	Format the HDD and assign Event recording areas and Copy areas to the HDD.	page 86

Network settings

Recorder network settings

This section explains how to configure recorder network settings.

The following are the settings for ports to be used.

Set the parameters using the button on the front panel. Setting parameters are displayed on the LCD.

Setting item	Description
DHCP	Specifies whether a DHCP server is used. Select [On] for this setting to obtain the IP address, subnet mask, and default gateway from a DHCP server.
IP address	When DHCP is [Off], specify the IP address.
Subnet mask	When DHCP is [Off], specify the IP address.
Default gateway	When DHCP is [Off], specify the default gateway subnet mask.
HTTP port	Specify the HTTP port number to be used. Normally this setting is 80.

The following shows the factory default network settings.

Setting item	Camera port	Client PC port	Maintenance port
DHCP	–	Off	–
IP address	192.168.0.250	192.168.1.250	192.168.2.250
Subnet mask	255.255.255.0	255.255.255.0	255.255.255.0
Default gateway	–	192.168.1.1	–
HTTP port	–	80	–

Important:

- Always configure the network settings for the ports using different subnet mask areas. Using the same subnet mask area may result in improper network communication.

Note:

- Settings are not required when the PC network environment is as shown below. You can configure recorder settings and perform operations from a web browser after connecting.

IP address : 192.168.1.2 to 249, 192.168.1.251 to 254

Subnet mask : 255.255.255.0

Gateway : 192.168.1.1

In an environment with other settings than those shown above, you will need to configure the network settings of the recorder or PC.

- For camera network settings, call up the Camera setup menu. Refer to "NW camera (page 48)" for details about the settings.

Network settings

The following is the procedure for configuring network settings.

- 1** Make sure that the Date display screen (standby screen) is displayed on the LCD.

If display is different, press the [ESC] button to display the standby screen.



- 2** Use the arrow buttons (up or down) to display the IP address settings screen.



- 3** Press the [SET] button.

This will display the [PT#1 IP ADDR] setting screen.



- 4** Use the arrow buttons (left or right) to display the network port setting screen.

- PT#1 : Camera port
- PT#2 : Client PC port
- PT#3 : Maintenance port

- 5** Use the arrow buttons (up or down) to display the screen of the item you want to set.

- DHCP
- IP address
- Subnet mask
- Default gateway
- HTTP port

Note:

- You can only set the DHCP, the gateway, and the HTTP port to PT#2.
-

- 6** After confirming that the cursor is [>], press the [SET] button.

The cursor moves to the number area.

- The cursor is shown as an underscore (_).



- 7** Use the arrow buttons to change the setting.

- To move the cursor : Arrow buttons (left or right)
- To input a value : Arrow buttons (up or down)

- 8** Press the [ESC] button to move the cursor to ">" and check the settings.

- 9** To configure the setting of another item, use the arrow buttons (up or down) to change the screen.

- 10** Repeat steps 5 through 8 to configure the settings for each item.

PC network settings

This section explains how to match the PC network settings to the settings of the recorder. In order to access the recorder, the IP address of the PC must be set to the same subnet mask area as the recorder client PC port.

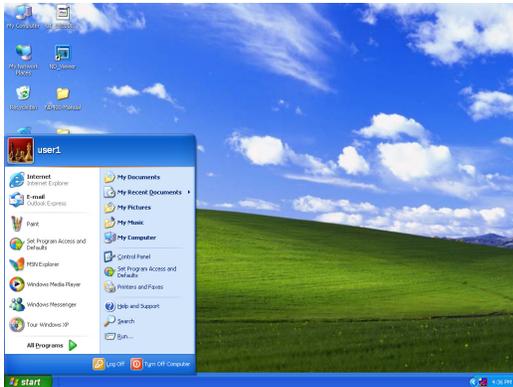
The examples in this manual are presented using the basic settings of Windows XP. If you are using an operating system other than Windows XP, refer to the user documentation of the operating system you are using.

Example:

If you are using the recorder's initial default settings (IP address: 192.168.1.250), set the IP address of the PC to; 192.168.1.XXX, where XXX is any value except 250 (which is used by the recorder) from 2 to 254.

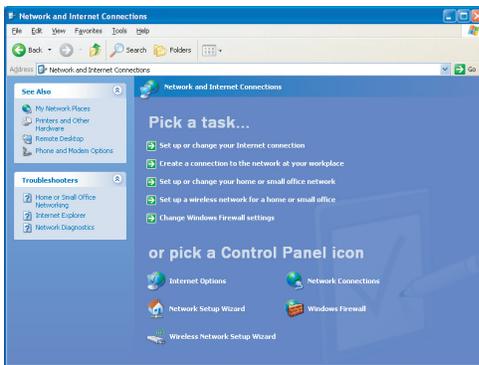
1 Log in to the PC as an administrator.

2 Click [Start] and then select [Control Panel].



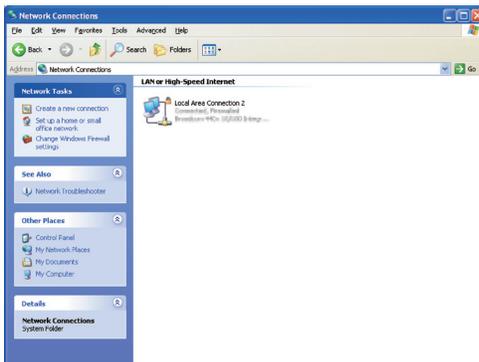
3 Click [Network and Internet Connections].

This will display the [Network and Internet Connections] window.



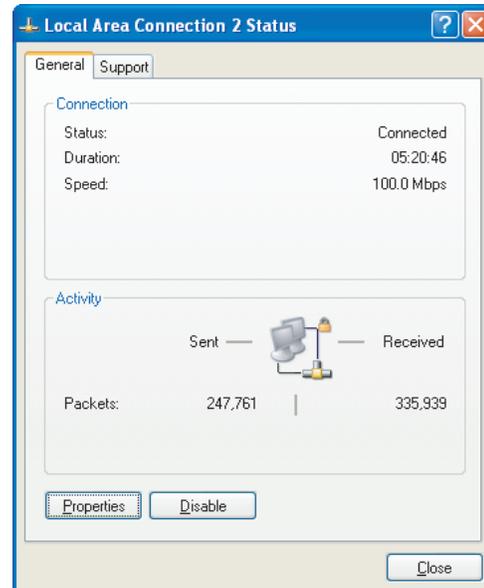
4 Click [Network Connections].

This will display the [Network Connections] window.



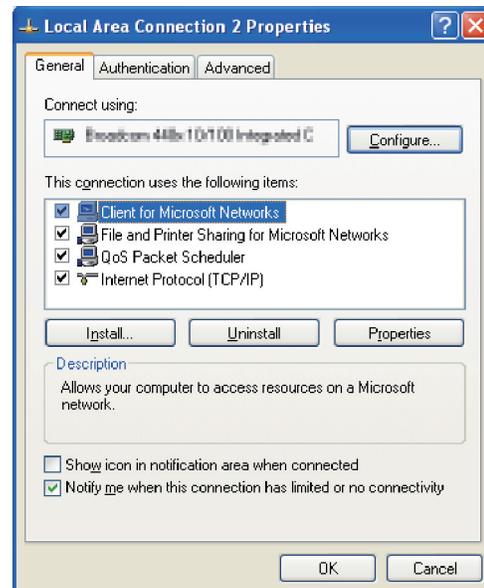
5 Double click [Local Area Connection].

This will display the [Local Area Connection Status] window.



6 Click [Properties].

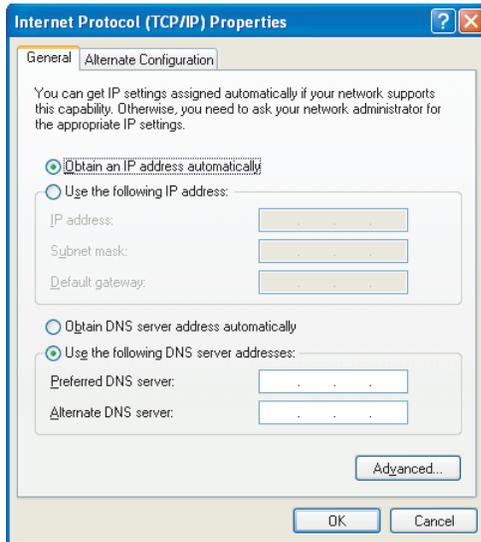
This will display the [Local Area Connection Properties] window.



Network settings

7 Click [Internet Protocol (TCP/IP)] and then click [Properties].

This will display the [Internet Protocol (TCP/IP) Properties] window.



8 Click [Use the following IP address] and then configure the IP address and subnet mask.

- For the IP address, set the same subnet mask area as the recorder.
- Depending on the network configuration, the default gateway setting is required. For details about settings, refer to your network administrator.

9 Click the [OK] button to close the window.

About operating windows

Display and close the operating window

Operate the recorder from a web browser on a PC.

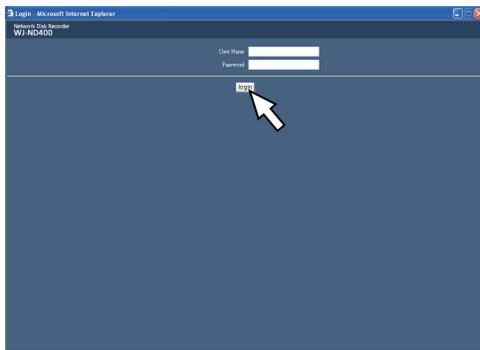
- 1 Start the PC.
- 2 Launch the web browser.



- 3 Enter the URL or IP address set for the recorder into the address box and press the [Enter] key.

The authentication window is displayed.

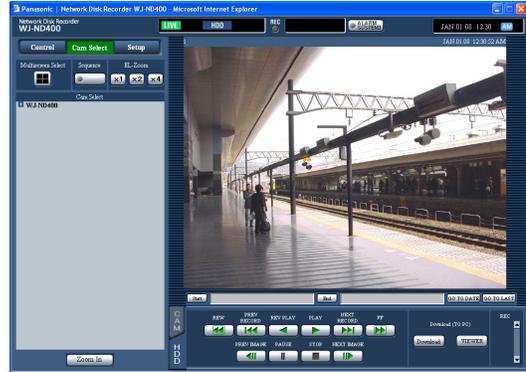
- If [User authentication] is [Off], the authentication window does not open (page 68).



Important:

- Refer to your system administrator for the IP address settings.
- If the [Host authentication] is [On] (page 72), only PCs that have an IP address that is registered with the recorder can connect to the recorder. For more information, contact your system administrator.
- Do not enter "0" on the front of the IP address when inputting it.
Example:
OK: 192.168.0.50
NG: 192.168.0.050
- Refer to page 96 if a message appears in the information bar.

- 4 Enter a "User name" and "Password" that is registered with the recorder, and click the [Login] button.
The top page is displayed.



Important:

- Refer to your system administrator for the user name and password set for you. Refer to "Users (page 70)" for information about user registration.
- The default user name and password settings are shown below.
User name: ADMIN
Password: 12345
- To ensure security, change the ADMIN password before starting operations. Also, change the password periodically. Refer to page 70 for information about changing passwords.
- When the unit is being operated without changing the default administrator name and password, the pop-up window saying that it is recommended to change the password will be displayed.



About operating windows

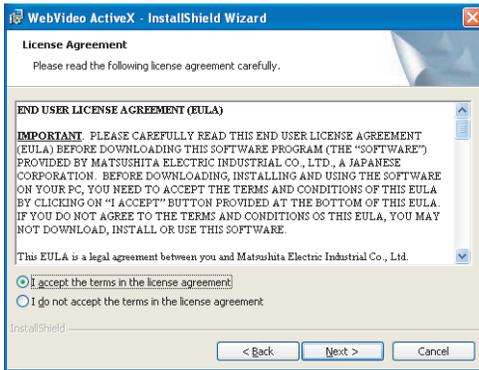
5 Click the buttons and tabs to set up operations.

Important:

- Refer to page 96 if a message appears in the information bar.

Note:

- The first time the recorder's top page is displayed on a PC the wizard for installing ActiveX, which must be installed to view images, is displayed. Follow the on-screen instructions.



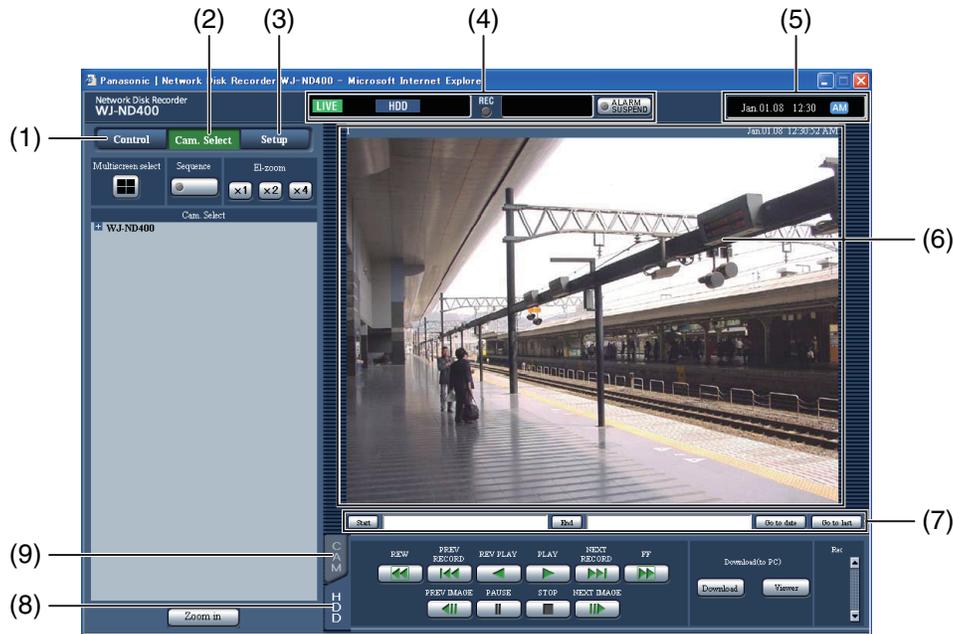
- If WJ-ND200/WJ-ND300 ActiveX is already installed, delete WebVideo ActiveX using Add or Remove Programs and then install WJ-ND400 ActiveX.
- When the install wizard is displayed again even after completing the installation of the ActiveX, restart the PC.

6 Close the web browser after operations and settings are finished.

Follow the on-screen instructions for setting and ending functions.

Names and functions of components

Top page



(1) [Control] button (page 18)

Performs operations such as searching for recorded images. You can also perform the functions of the camera picture switcher such as changing the display of camera live pictures to multiscreen or sequential display.

(2) [Cam. select] button (page 19)

The switcher functions such as switching camera channels are operable on this page.

(3) [Setup] button (page 20)

Sets up the recorder.

(4) Status display area (page 21)

Displays the recorder's status, such as the recording and playback status.

(5) Current time display area

Displays the current time.

(6) Image display

Displays live and recorded images. Displays the camera title in the upper left and the date/time in the upper right (current for live, recorded for recorded images). Click the camera title when viewing multiscreen to view the clicked image on a single screen.

(7) Playback point operation area (page 22)

Specify the playback position or skip to the latest images.

(8) [HDD] tab (page 22)

Controls recorded images, such as playing images or downloading to save to a PC.

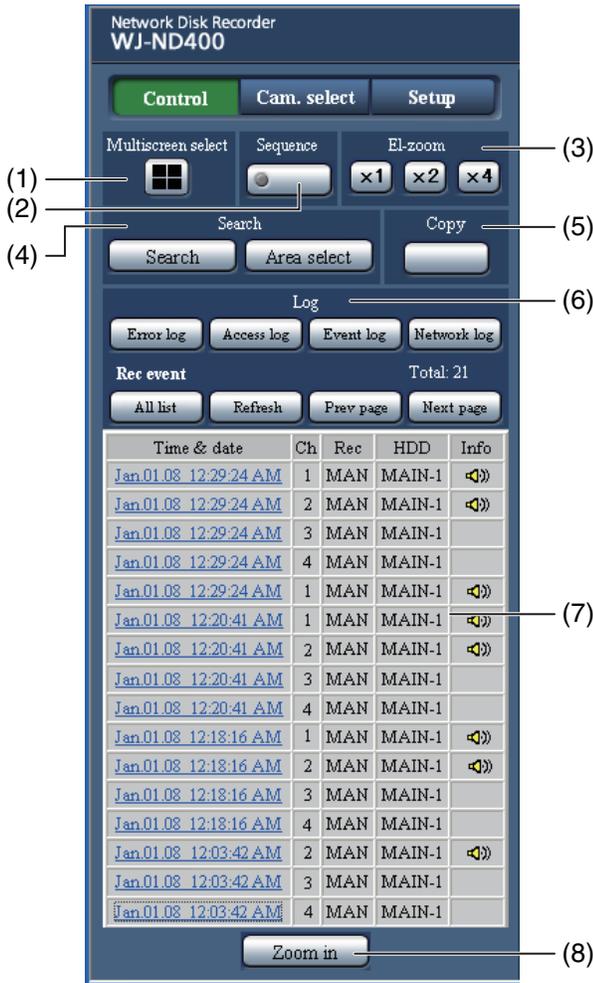
(9) [CAM] tab (page 24)

Controls the cameras' zoom, focus, and automatic functions.

About operating windows

[Control] button

The following operation panel appears when you click the [Control] button.



- (1) **[Multiscreen select] box**
Displays multiple images from up to 4 cameras at the same time. Switches between the four screens with each clicking the button following the preset camera combination (page 50).
- (2) **[Sequence] box**
Switches the camera images automatically in a preset sequence. The button indicator lights green during sequence (page 53).
- (3) **[El-zoom] box**
Displays the camera image at the magnification of the button clicked.



- (4) **[Search] box**
[Search] button
Searches for recorded images. The search results are shown on the rec event list window. (refer to the Operating Instructions (PDF file))
[Area select] button
Selects disk to play or search. (refer to the Operating Instructions (PDF file))
- (5) **[Copy] box**
Copies recorded images into the copy area of the HDD.
- (6) **[Log] box**
The history is shown on the rec event list window.
[Error log] button
Displays a log of the errors that occur.
[Access log] button
Displays the log in/log out time and date, the user name or IP address.
[Event log] button
Displays the event log (when it occurred and a description).
[Network log] button
Displays a log of the problems that occur on the network.
- (7) **Rec event list**
Number of events
Displays the total number of events in a list. If there are more than 10 000 events, [>10000] is displayed.
[All list] button
Removes any conditions and all rec events are listed.
[Refresh] button
Updates the display to the most recent status.
[Prev page] button
Displays the previous page of the list.
[Next page] button
Displays the next page of the list.
[Time & date]
Displays the time and date.
[Ch]
Displays the channel of the recorded data.
[Rec]
Displays the recording mode (refer to the Operating Instructions (PDF file)).
[HDD]
Displays the number of the disk where data is stored.
[Info]
An icon is displayed on the image when audio is available.
- (8) **[Zoom in] button**
Enlarges the display of live and recorded images.

Note:

- The rec event list is displayed when the [Refresh] button is pressed, or when searching or when selecting an area. Refer to the Operating Instructions (PDF file) for information about searching and selecting an area.
- The [All list] button is disabled during playback. Stop playback and then do the search operation.
- When there are many cameras, the recording start time may vary for each channel.

[Cam. select] button

The following operation panel appears when you click the [Cam. select] button.



(1) [Multiscreen select] box

Displays multiple images from up to 4 cameras at the same time. Switches between the four screens by each clicking the button following the preset camera combination (page 50).

(2) [Sequence] box

Switches the camera images automatically in a preset sequence. The button indicator lights green during sequence (page 53).

(3) [EI-zoom] box

Displays the camera image at the magnification of the button clicked.

-  : 1x
-  : 2x
-  : 4x

(4) [Cam. select] box

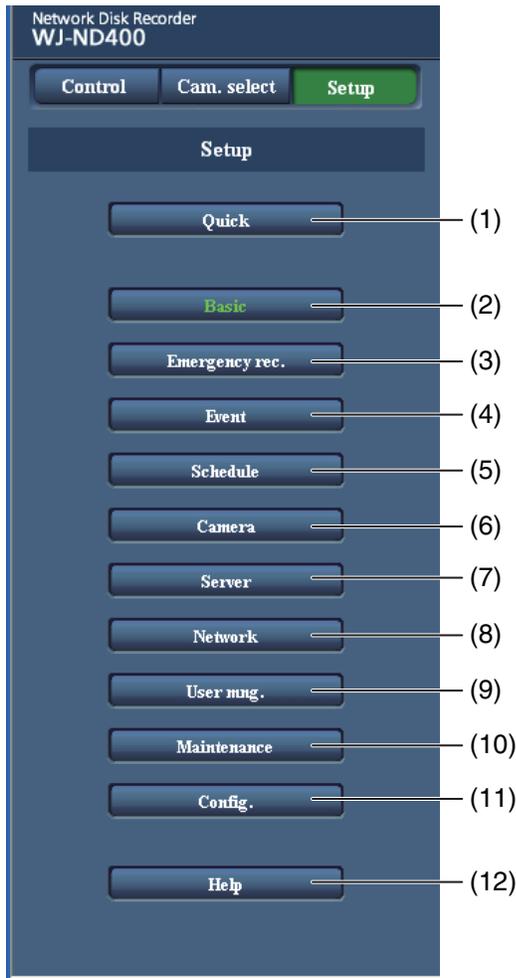
Displays the group titles of the cameras connected to the recorder when clicking [WJ-ND400]. Refer to page 52 for information about group settings.

Displays the cameras the belong to that group when clicking a group title. Displays the image of camera when clicking a camera title on 1-screen.

About operating windows

[Setup] button

The following operation panel appears when you click the [Setup] button.



(1) [Quick] button

Displays a menu with the minimum settings necessary to operate the recorder.

(2) [Basic] button

Displays a menu for system and date/time settings necessary for basic operations of the recorder.

(3) [Emergency rec.] button

Displays a menu for emergency recording settings.

(4) [Event] button

Displays a menu for setting the operations for the occurrence of each type of event (site alarm, terminal alarm, command alarm).

(5) [Schedule] button

Displays a menu for setting recording/event action for specified days and times.

(6) [Camera] button

Displays a menu for setting the network, group, and sequence of cameras.

(7) [Server] button

Displays a menu for setting the server.

(8) [Network] button

Displays a menu for setting the network.

(9) [User mng.] button

Displays a menu for setting authentication.

(10) [Maintenance] button

Displays a menu for setting HDDs.

(11) [Config.] button

Displays a menu for disk information and formatting disks.

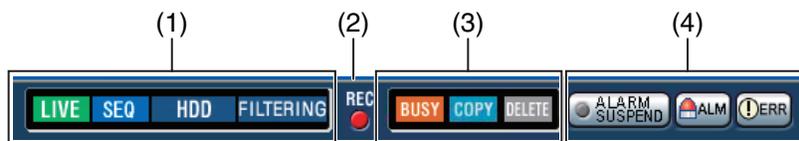
Important:

- When settings are activated, all logged in users log out.

(12) [Help] button

Displays the Help window.

Status display area



(1) Displays the status of live and playback images.

- : Live images are being displayed.
- : Recorded images are being played back.
- : Images are being played back reversely.
- : Images are being played back at fast forward.
- : Images are being played back reversely at fast forward.
- : Playback is paused.
- : Recorded images and audio are being downloaded.
- : Recorded images and audio have been downloaded.

[Step 1] to [Step 7]

: The playback speed is displayed.

- : 1x
- : Approx. 4x
- : Approx. 8x
- : Approx. 16x
- : Approx. 32x
- : Approx. 48x
- : Approx. 96x

: The sequence is being activated.

: Normal recording area or event recording area of the HDD on the recorder is selected.

: HDD copy area is selected.

: SD memory data is currently being obtained.

: RAID is being recovered.

: Rec event list is filtered. For details on filtering of recording event searches, refer to the Operating Instructions (PDF File).

(2) [REC] indicator

Displays the recording status.

- : Recording is being performed.
- : Recording is not being performed.

(3) Display the following statuses.

: Camera cannot be operated because a user with a higher priority is using the camera.

: Copying is being performed.

: Image data is being deleted.

(4) Information about the events and errors is displayed.

"Alarm suspend [ALARM SUSPEND]" button

: Clicking this button to temporarily disable alarm detection. (refer to the Operating Instructions (PDF file))

: This indication will be displayed while an alarm is being suspended.

"Alarm [ALM]" button

: Displays when an event occurs. Clicking this button clears the alarm action. (refer to the Operating Instructions (PDF file))

"Error [ERR]" button

: An error has occurred. Clicking this button clears the error occurrence. Refer to the Operating Instructions (PDF file) for further information about errors.

Note:

- Emergency recording does not stop even if you click the "Alarm [ALM]" button while recording. However, recording does stop if the recording time is set to [Continue] for emergency recording.

About operating windows

Playback point operation area



(1) **Displays the time and date for the download start point/ending point.**

- [Start] : Set the time and date to start the image to be downloaded.
- [End] : Set the time and date to end the image to be downloaded.

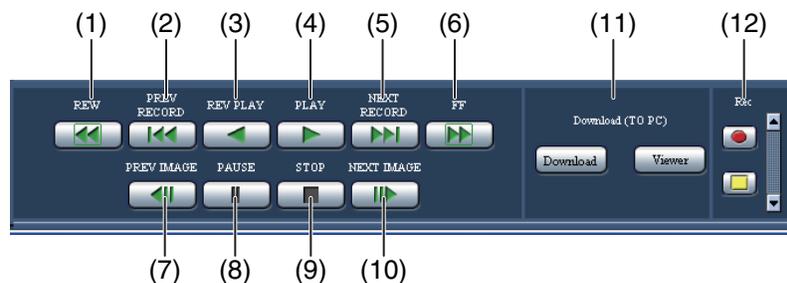
(2) **[Go to date] button**

Used to playback images from a specified time and date.

(3) **[Go to last] button**

Skips to the latest recorded image on the displayed camera channel and starts playback.

[HDD] tab



(1) **[REW] button**

Plays recorded images reversely at high speed.
Each time the button is clicked, the reverse speed changes Step 2 (4x) > Step 3 (8x) > Step 4 (16x) > Step 5 (32x) > Step 6 (48x) > Step 7 (96x).

(2) **[PREV RECORD] button**

Skips backward to play back recorded images.

(3) **[REV PLAY] button**

Plays recorded images in reverse.

(4) **[PLAY] button**

Plays recorded images.

(5) **[NEXT RECORD] button**

Skips forward to play back recorded images.

(6) **[FF] button**

Plays recorded images at high speed.
Each time the button is clicked, the speed changes Step 2 (4x) > Step 3 (8x) > Step 4 (16x) > Step 5 (32x) > Step 6 (48x) > Step 7 (96x).

(7) **[PREV IMAGE] button**

Clicking during playback or pause plays back one frame at a time reversely, and then pauses.

(8) **[PAUSE] button**

Clicking during playback pauses playback.
Clicking during pause restarts playback.

(9) **[STOP] button**

Stops playback and displays live images from the camera.

(10) **[NEXT IMAGE] button**

Clicking during playback or pause plays back one frame at a time forward and then pauses.

(11) **[Download (TO PC)] box**

Downloads the image being played to the PC.

[Download] : Images and audio can be downloaded.

[Viewer] : Downloads viewer software for playing back downloaded images.

(12) **[Rec] box**

Click [Up] button to display the [Recording] and [Recording stop] buttons.

Click [Down] button to hide the [Recording] and [Recording stop] buttons.



[Recording] button : Starts recording manually.



[Recording stop] button : Stops recording manually.

Important:

- When displaying the [Recording] or [Recording stop] buttons, click and hold [Up] button until displayed.

Note:

- The operations are as follows when the image for playback is an MPEG-4 image.

Date/Time Search : Playback may start a few seconds before or after the specified time.

Reverse Playback : Not all recorded images are displayed. Reverse playback is performed at the refresh rate set for the camera at the time of recording.

Playback During Playback : Performing the playback operations again during playback skips ahead a few seconds.

Single Frame Reverse : Not all recorded images are displayed. Single frame reverse is performed at the refresh rate set for the camera at the time of recording.

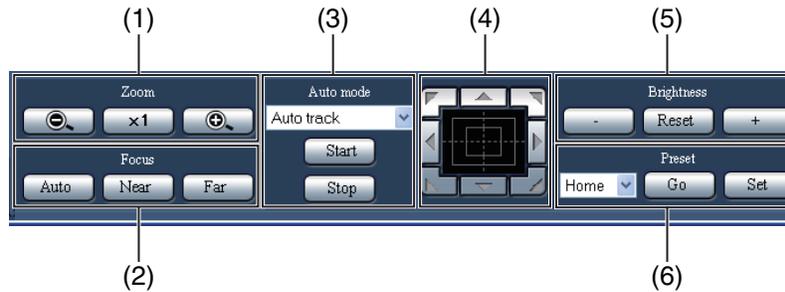
Fast Forward/Fast Reverse : Not all recorded images are displayed. Fast forward and fast reverse are performed at the refresh rate set for the camera at the time of recording.

Downloading Images During Playback : Image may be saved including a few seconds before the starting time and date and a few seconds after the ending time and date.

About operating windows

[CAM] tab

The camera can be controlled (pan/tilt, zoom, focus, brightness, preset, auto mode) when the live image is from a camera that can pan and tilt. Some camera operations cannot be done depending on the type of camera connected.



(1) [Zoom] box

Click [-] or [+] to adjust the zoom. Click [x1] to return the zoom to normal.

(2) [Focus] box

Click [Near] or [Far] to adjust the image focus.
Click [Auto] to adjust the focus automatically (auto focus).

(3) [Auto mode] box

Select the camera's auto mode function. Click [V] and select an auto mode function (auto track, auto pan, preset sequence, sort, patrol), and then click [Start]. Click [Stop] to turn off the auto mode function.

(4) Control pad/buttons

Click the buttons on the control pad to move the camera to the direction of the button (pan/tilt). Also, click in the control pad to adjust the horizontal/vertical position (pan/tilt) of the image. The pan/tilt movement increases if a clicked point gets farther from the center point of the control pad.

(5) [Brightness] box

Click [-] (Dark) or [+] (Bright) to adjust the lens iris (brightness).
Click [Reset] to reset the brightness.

(6) [Preset] box

[Go] button

The camera moves to the pre-registered preset position. Click [V], select a preset number ([Home], 1 to 256), and then click [Go]. To perform the preset operation, register the camera's preset positions in advance.

[Set] button

Register preset positions that specify the direction of the camera. Move the camera to the direction to register, click [V], select a preset number (1 to 256), and then click [Set] ([Home] cannot be registered.).

Quick settings

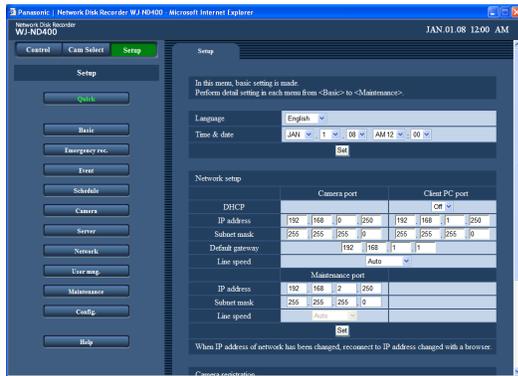
Configure the language, time & date, network setup, camera registration, and the minimum required settings to operate the recorder.

Settings

Language, and time & date settings

This section explains how to configure settings for the display language, and the current time and date.

- 1 Click the [Quick] button on the setup menu.
This will display the setting window.



- 2 Configure the settings for each item.
Refer to “Quick settings 1” table for details about the settings.
- 3 Under [Time & date], click the [Set] button.

Important:

- For around 4 seconds after changing the time and date, for example, when switching to summer time or when setting the time and date, the live image display will turn black and recording may not be possible.

Note:

- If there is no camera set up, the [Quick] window appears.
- There is one item for language and Time & date, one item for network settings, one item for Camera registration, and one item for Program setup. When you make the settings, click the [Set] button and apply the settings to the recorder.

Quick settings 1

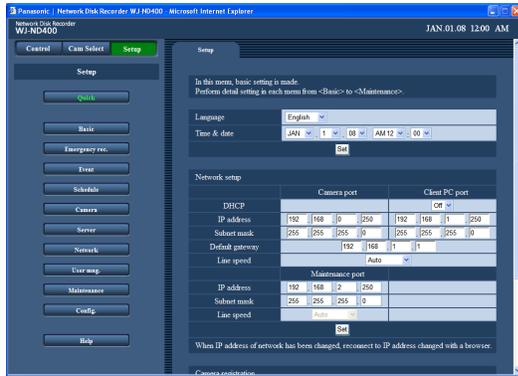
Item	Settings	Description
Language	Japanese / English♦ / Français / Español / Deutsch / Italiano / Russian / Chinese / Custom	Specifies the language used in browser screens. <ul style="list-style-type: none"> • Contact your dealer for further information about the customized language (Custom).
Time & date	08 to 34 (Year) / Jan to Dec (Month) / 1 to 31 (Day) / 0 to 23 (hour) / 0 to 59 (minute)	For setting the current time and date. Configure the setting as year / month / day / hour / minute

♦ Initial default

Network setup

This section explains how to configure recorder network settings.

- 1 Click the [Quick] button on the setup menu. This will display the setting window.



- 2 Configure the settings for each item. Refer to "Quick settings 2" table for details about the settings.

- 3 Under the "Network setup" item, click the [Set] button. When you change the Client PC port IP address, the "Change IP Address" window will appear. Click [OK] to complete the process.



Note:

- Changing the "Client PC port" IP address causes all connected users to be forcibly logged out. Reconnect with the new IP address.
- The recorder reboots after changing the line speed settings and pressing [Set].

Quick settings 2

Item	Settings	Description
Network setup- Camera port/Client PC port		
DHCP	Off♦ / On	Specifies whether a DHCP server is used. Select [On] to obtain the IP address, subnet mask, and default gateway from a DHCP server. Select [Off] to enter these addresses manually.
IP address	Address input*1	When [DHCP] is [Off], specify the IP address here.
Subnet mask	Address input*1	When [DHCP] is [Off], specify the subnet mask here.
Default gateway	Address input*1	When [DHCP] is [Off], specify the default gateway here.
Line speed	Auto♦ / 1000M-Full / 100M-Full / 100M-Half / 10M-Full / 10M-Half	Specifies the data line speed.
Network setup - Maintenance port		
IP address	Address input*1	Specifies the IP address.
Subnet mask	Address input*1	Specifies the subnet mask.

♦ Initial default

*1 Refer to "Recorder network settings (page 11)" for information on initial default settings.

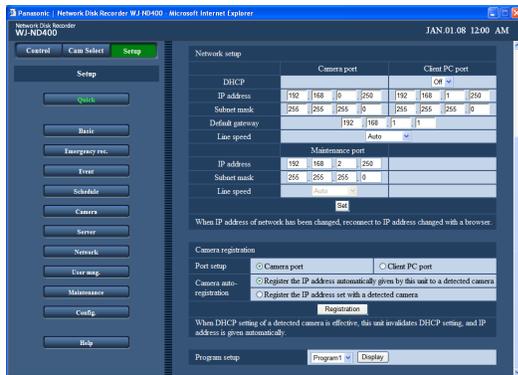
Important:

- A different subnet should be set for each port.
- When DHCP is set to [On] and "SD memory rec." is set, an error may occur in the process of startup of the unit when a request to write onto the SD memory card is made. This occurs when the response from the DHCP server is slow. Once the address has been obtained from the DHCP server, the error is resolved.

Camera registration

This section explains how to register a camera on the recorder. The recorder supports registration of up to 64 cameras.

- 1 Click the **[Quick]** button on the setup menu. This will display the setup window.



- 2 Select the network port for detecting cameras from the following.
[Camera port] / [Client PC port]
- 3 Use the **Camera auto-registration** item to specify whether to assign an IP address to the detected camera.
[Register the IP address automatically given by this unit to a detected camera]
[Register the IP address set with a detected camera]

Note:

- After executing [Register the IP address automatically given by this unit to a detected camera], the recorder will automatically detect blank IP addresses for setting, but depending on the network environment, the IP address may be already used for the other network device (when the Windows XP firewall function is being used, for example). If the same IP address is used by another device, check the IP address setting and change it manually.
- When [Register the IP address automatically given by this unit to a detected camera] is executed and [On] is selected for the DHCP setting of the detected camera, the recorder will change the DHCP setting to [Off] and provide an IP address automatically.
- Only when the DHCP setting of the recorder is [Off] are IP addresses automatically provided.
- In the case of IP auto addressing, set the subnet mask of the network port to 255.255.255.0.
- When automatically assigning IP addresses, make sure the octets of the port selected in step 2 match the gateway. Depending on the camera, IP addresses cannot be assigned if it is not set.
- Registering an IP address to a camera automatically sets the camera's HTTP port number to 80. Also, the camera's subnet mask and default gateway are set to the same values as the recorder's network port subnet mask and default gateway.

- 4 Click the **[Registration]** button. This will display a camera registration confirmation message.



- 5 Click the **[OK]** button. This will detect the camera and perform registration. The "Setting" dialog box appears while registration is in progress.

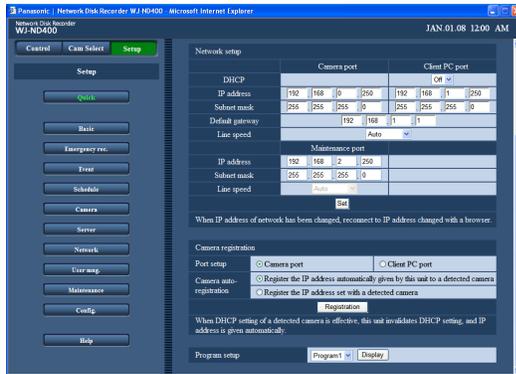


A "Camera Registration Result" window will appear after registration is complete.



- 6 Check the registration results.
 - Up to 64 cameras can be registered.
 - Only newly registered cameras appear in the "Camera registration result" window. If there are more than 64 cameras on the same network, only 64 will be displayed.
 - If multiple cameras have the same IP address, the IP address and MAC address will be displayed in red. In this case, change the IP address for one of the cameras and make sure that the same IP address is not used for two cameras or more.

- 7** Click the [OK] button.
This completes registration.



Important:

- Execute [Register the IP address automatically given by this unit to a detected camera] to automatically provide IP addresses to all detected cameras. Note that some cameras may already be operating.

Note:

- When a camera you want to register is not detected or when you want to change the settings of a camera, refer to "NW camera (page 48)".
- Registering a camera forcibly logs out any other users currently logged in to the recorder.
- All recording is disabled while auto camera registration is in progress.
- Camera auto-registration is unavailable for cameras on a different subnet accessed through a router.
- For improved security, some camera models whose settings have been changed from initial defaults are detected for the only first 20 minutes after power is turned on. For details refer to the operating instructions for the camera.
- The compression format of registered cameras is set automatically to JPEG or M-JPEG.

Quick settings 3

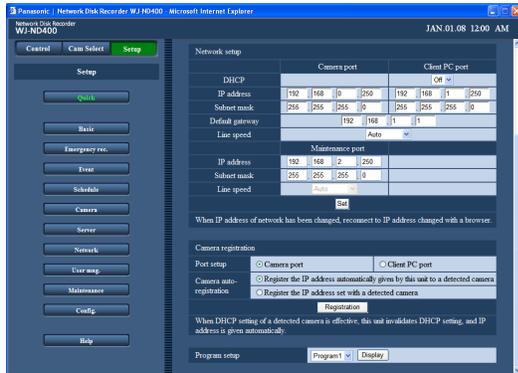
Item	Settings	Description
Port setup	Camera port ♦ / Client PC port	Select the network port to which the camera being registered is connected.
Camera auto-registration	Register the IP address automatically given by this unit to a detected camera ♦ / Register the IP address set with a detected camera	Specifies the IP address given to the detected camera by the recorder. <ul style="list-style-type: none"> When [On] is selected for [DHCP] for the recorder [Network setup], no IP address can be given to the camera.

♦ Initial default

Program settings

Use the following procedure to select the recording program that determines the live image rate, recording rate, and other operations.

- 1 Click the **[Quick]** button on the setup menu.
This will display the setting window.



- 2 Configure the settings for each item.
Refer to "Quick settings 4" table for details about the settings.
- 3 Click the **[Set]** button.

Quick settings 4

Item	Settings	Description
Program setup	Program1♦ to Program8	Selects the recording program. To check the details of the selected program, click the [Display] button. <ul style="list-style-type: none"> • Refer to "Program (page 42)" for details about programs.

♦Initial default

Note:

- Performing [Camera registration] sets both the live video rate and manual record rate of [Program1] to [Program8] to "1 ips".

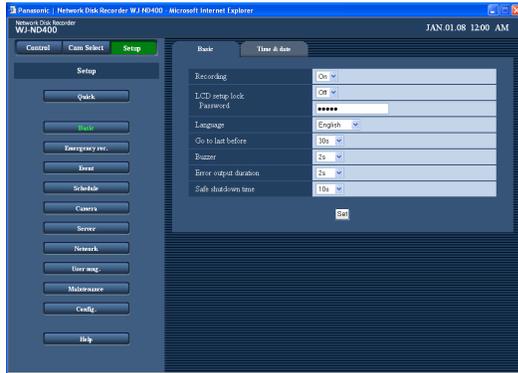
Basics

Configure the system settings to operate the recorder.

Basics

Use the following procedure to configure basic system settings.

- 1 Click the [Basic] button on the setup menu.
- 2 On the sub-menu that appears, click [Basic]. This will display the setting window.
- 3 Configure the settings for each item. Refer to “Basic setup” table for details about the settings.
- 4 Click the [Set] button.



Basic setup

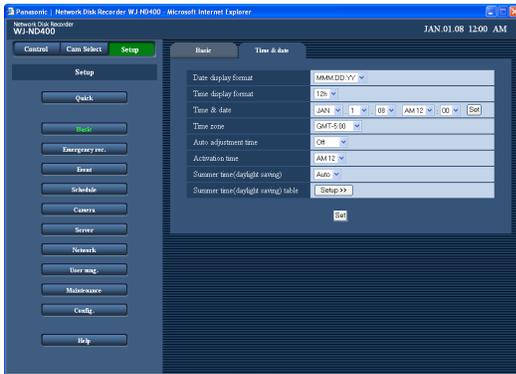
Item	Settings	Description
Recording	Off / On ♦	Specifies whether recording should be performed. <ul style="list-style-type: none"> Recording is not performed when [Off] is selected. Select [On] for this setting except to force a recording to stop.
LCD setup lock	Off ♦ / On	Locks front panel buttons to prevent them from being operated. <ul style="list-style-type: none"> When [On] is selected, buttons can be unlocked by entering a password, but they will re-lock automatically if no operation is performed for a certain period of time (about one minute).
Password	Enter password (12345 ♦)	Specifies a password for releasing LCD setup lock. Sets a password of five single-byte characters.
Language	Japanese / English ♦ / Français / Español / Deutsch / Italiano / Russian / Chinese / Custom	Specifies the language used in browser screens. <ul style="list-style-type: none"> Contact your dealer for further information about the customized language (Custom).
Go to last before	5s / 10s / 30s ♦ / 1min / 5min	Specifies the time the image is displayed when the [Go to last] button is clicked on the operation window.
Buzzer	Off / 2s ♦ / 5s / 10s / 20s / 30s / 1min / Ext	Specifies the duration that the buzzer sounds whenever an error occurs on the recorder. <ul style="list-style-type: none"> Selecting [Ext] causes the buzzer to continue to sound until the [ERR] button is clicked or the [BUZZER STOP] button on the front panel is pressed.
Error output duration	Off / 2s ♦ / 5s / 10s / 20s / 30s / 1min / Ext	Specifies the duration of the error output whenever an error occurs on the recorder. For details about error output, refer to the Installation Guide. <ul style="list-style-type: none"> Selecting [Ext] causes signal output to continue until the [ERR] button is clicked.
Safe shutdown time	10s ♦ / 20s / 30s / 1min / 2min / 3min / 4min / 5min	Specifies the time until shutdown starts after a power down detection signal is input to the recorder.

♦ Initial default

Time & date

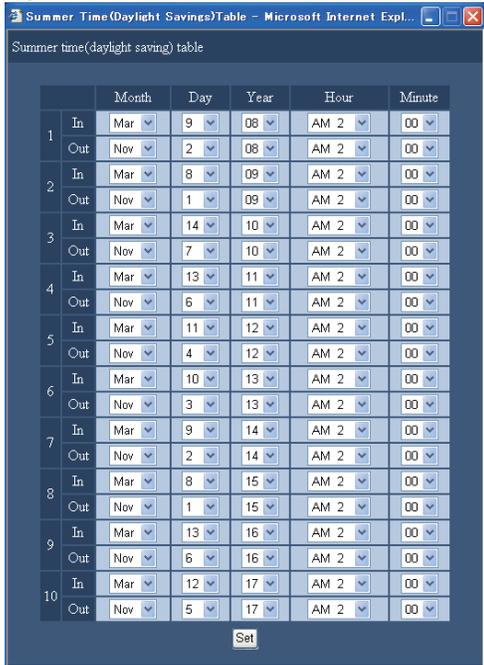
Use the following procedure to set the current time and date.

- 1** Click the [Basic] button on the setup menu.
- 2** On the sub-menu that appears, click [Time & date]. This will display the "Time display format" window.
- 3** Configure the settings for each item. Refer to "Time display format" table for details about the settings.
- 4** Click the [Set] button.



Time display format

Item	Settings	Description
Date display format	YY.MM.DD / MMM.DD.YY / DD.MMM.YY NTSC model : MMM.DD.YY ♦ PAL model : DD.MMM.YY ♦	Specifies the date format. Example: April 1, 2008 <ul style="list-style-type: none"> • Selecting [YY.MM.DD] displays the date as [08.04.01]. • Selecting [MMM.DD.YY] displays the date as [APR.01.08]. • Selecting [DD.MMM.YY] displays the date as [01.APR.08].
Time display format	24 h / 12 h NTSC model : 12 h ♦ PAL model : 24 h ♦	Specifies the time format. Example: 3:00 p.m. <ul style="list-style-type: none"> • Selecting [24h] displays the time as [15:00]. • Selecting [12h] displays the time as [3:00 PM].
Time & date	08 to 34 (year) / Jan to Dec (month) / 1 to 31 (day) / 0 to 23 (hour) / 0 to 59 (minute)	Sets the current time and date. Configure the year / month / day / hour / minute settings, and then click the [Set] button. Timekeeping starts from the time you set, the moment you click the [Set] button.
Time zone	GMT-12:00 to GMT+13:00 NTSC model : (GMT-5:00 ♦) PAL model : (GMT+0:00 ♦)	Specifies the time zone of the recorder.
Auto adjustment time	Off ♦ / Slave / Master	Specifies the auto time adjustment method. <ul style="list-style-type: none"> • Selecting [Slave] specifies that the recorder's time should be adjusted in accordance with an externally input time. The time is adjusted automatically in accordance with a signal input from the alarm/control terminal on the rear panel of the recorder. • Selecting [Master] specifies that the time of other devices should be adjusted in accordance with the recorder. A signal is output from the alarm/control terminal on the rear panel of the recorder and sent to other devices.

Item	Settings	Description
Activation time	0 ♦ to 23	<p>Specifies the time for auto time adjustment.</p> <ul style="list-style-type: none"> When [Slave] is selected for [Auto adjustment time], this setting specifies the time that the recorder's time is auto adjusted. When [Master] is selected for [Auto adjustment time], this setting specifies the time that the time setting is output from the alarm/control terminal.
Summer time (daylight saving)	Out / Auto ♦	<p>Specifies the summer time switching method.</p> <ul style="list-style-type: none"> Selecting [Out] disables summer time. Selecting [Auto] enables summer time automatically in accordance with the summer time switching setup. An asterisk (*) next to the time indicates that summer time is in effect.
Summer time (daylight saving) table		<p>Specifies the summer time start and end time and date settings. Clicking the [Setup >>] button displays the summer time switching window.</p>  <ul style="list-style-type: none"> [In] specifies the summer time start time and date, while [Out] specifies the end time and date. Set the rightmost two digits of the year for the "Year" setting. Up to 10 settings can be configured. After configuring the settings you want, click the [Set] button and then click the [x] button in the upper right corner to close the window.

♦ Initial default

Important:

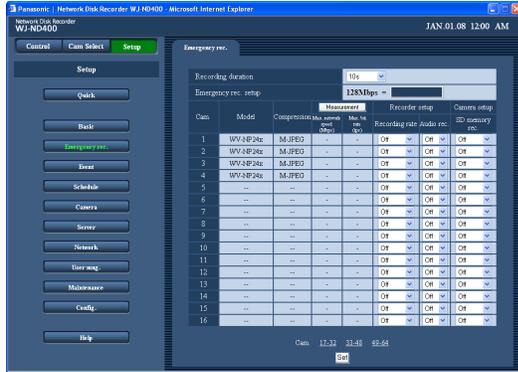
- Recording may not be possible and the live image display turns black for about four seconds immediately after one of the following operations is performed.
 - Current time and date setting
 - Shifting to/from summertime (daylight saving)
 - While [Slave] is selected for auto time adjustment, execution of auto time adjustment (While emergency recording is in progress, recording takes priority and time adjustment is not performed.).

Emergency recording

Emergency recording

Sets the recording duration or recording rate when performing emergency recording by input of the emergency recording input signal. For details about emergency recording, refer to the Installation Guide.

- 1 Click the [Emergency rec.] button on the setup menu. This will display the "Emergency rec." window.



Button Functions

[Measurement] button : Click to check for proper operation at the specified recording rate. (page 36)

- 2 Configure the settings for each item. Refer to "Emergency recording settings" table for details about the settings.

- To configure the settings of a camera that is not shown on the display, click the applicable camera number range above the [Set] button to change the contents of the display.
- Clicking a camera number range will save the currently displayed camera settings.

- 3 Click the [Set] button.

Important:

- Recording may not be possible for about four seconds immediately after emergency recording is complete.

Emergency recording settings

Item	Settings	Description
Recording duration	2s / 5s / 10s♦ / 20s / 30s / 1min / 3min / 5min / 10min / 30min / Manual / Continue	Specifies the duration of emergency recording. <ul style="list-style-type: none"> • Selecting [Manual] records while the emergency recording input signal is being input. Also, recording is performed for a minimum of 8 seconds. • Selecting [Continue] causes recording to continue until the "Alarm [ALM]" button is clicked.
Model		Shows the registered model numbers of the cameras.
Compression		Shows the image compression format for registered camera images. <ul style="list-style-type: none"> • Refer to "Checking and changing a camera (Manually setting) (page 50)" for details about compression method settings.
Measurement		
Max. network speed (Mbps)		Shows the maximum bit rate on the network being used when the [Measurement] button is clicked.
Max. bit rate (ips)		Shows the maximum recording rate on the network being used when the [Measurement] button is clicked. <ul style="list-style-type: none"> • A red rate setting value indicates that live images or recording of the image may not be possible at the specified rate.
Recorder setup		
Recording rate	Off♦ / 1ips / 2ips / 3ips / 5ips / 10ips / 15ips / All / I-Frame	Specifies the rate of emergency recording. <ul style="list-style-type: none"> • Available settings differ according to the compression format of the camera. Refer to "Checking and changing a camera (Manually setting) (page 50)" for details about compression method settings.

Item	Settings	Description
Audio rec. (Audio recording)	Off♦ / On	Specifies whether to record audio images. <ul style="list-style-type: none"> Audio and images are recorded at the same time. Audio recording without image is not supported. Audio recording can be selected only for a camera model that supports audio recording. Refer to the "readme.txt" file on the CD-ROM bundled with the recorder for information about the camera models that support recording.
Camera setup		
SD memory rec. (SD memory recording)	Off♦ / 0.1ips / 0.5ips / 1ips	Specifies whether images should be saved to an SD memory card if the signal is lost during emergency recording. <ul style="list-style-type: none"> If the camera is a model that supports SD memory recording and the recording format is [M-JPEG], you can specify a recording rate. For information about SD memory recording, refer to About SD memory recording (page 36). Do not set SD memory recording rates on multiple network disk recorders for the same camera. Audio recording and SD memory recording cannot be done at the same time. If the SD memory recording rate for a camera is set to anything except [Off], audio recording for that camera channel is automatically set to [Off].

♦Initial default

Important:

- When there is input of emergency recording to the recorder and when network communication is impossible between the recorder and cameras, SD memory recording cannot be performed because the camera does not recognize emergency recording.
- When "Audio rec." is set to [On], ensure that the audio mode of the camera is set to [On]. Also, set the camera's audio bit rate to "32 kbps".
- When the camera's audio bit rate is set again during operation, set the audio recording settings on the recorder to [Off] and then back to [On] again.
- Audio interruptions may occur because of the "Mic input interval" (intervals for audio reception) setting of the camera. Select the interval setting of the camera according to the network environment.
- Audio interruptions may occur because of the recording rate. To resolve this, change the recording rate according to the network environment.
- To record audio, set the camera's "Audio transmission/reception" to "Mic input" or "Interactive(full duplex)". Some models and versions of cameras do not support "Interactive(full duplex)". For details refer to the operating instructions for the camera.
- Audio is recorded regardless of whether single or multiple screen display is set.

Emergency recording

About the [Measurement] button

By clicking the [Measurement] button, you can check that the specified rates provide proper operation on the network. A red rate setting value indicates that live images or recording of the image may not be possible at the specified rate.

Measurement takes about 90 seconds.

- When measurement results (total of all camera maximum speeds) are greater than the recorder network speed, heavy network traffic may cause dropping of recorded images, live images, alarms, and other data, degraded operational response, restarts, and other problems. (Guideline network speed: 128 Mbps)
- Even when measurement results do not exceed the above guideline network speed, the number of connected cameras and PCs can cause some of the phenomena described above.

Important:

- Network traffic volume fluctuates depending on the network environment. Set a rate based on measurement results to ensure enough margin for maximum network speed.
- Recording, playback, live video, a copying are all disabled while measurement is in progress.

Note:

- Other users connected to the recorder are logged out automatically during measurement. They are logged back in after measurement is complete.
- Measurement results are for reference only. They are subject to change in accordance with the network environment.
- The target for measurement is the value after clicking [Set].
- Since the recorder uses a network, network traffic and other factors can make it impossible to obtain live video and recorded images as expected from the setup, slow browser response, or disconnection. Also, recording may not be possible when the recorder is in use or malfunctioning. We are not liable for lost content.

About SD memory recording

SD memory recording is a camera function that saves images to the camera's internal SD memory when communication with the camera is not possible within the programmed recording time set on the recorder.

Recording rate setting

SD memory recording can only be set if the camera supports SD memory recording and the compression format is set to [M-JPEG].

The recording rate can be set for each camera channel. (page 42)

The start time of SD memory recording depends on the recording rate setting.

Set the SD memory recording rate to a smaller setting than the emergency recording rate.

Note:

- When the recording rate for SD memory recording is set, be sure to set to use recording to the SD memory card in the camera. When the camera is set to not use SD memory cards, or when an SD memory card is not inserted in the camera (or inserted incorrectly), an error message appears several times a day and recording is not done.

Acquiring images saved on the SD memory card

The images are acquired from the SD memory card and recorded on the HDD.

You can confirm when data is being acquired from the SD memory in the "Status display area".

SD memory acquisition is described below.

- 15 minutes past each hour (0:15, 1:15, ...23:15)

Important:

- When communication with the camera is discontinued during emergency recording, the recording rate set for SD memory recording is used.
- SD memory recording cannot be done when the network communication between the camera and the recorder is disconnected, and the alarm is entered to the recorder or it reached start time of the scheduled recording time starts.
- Do not set SD memory recording rates on multiple network disk recorders for the same camera.
- The time recorded on the acquired SD memory data is the time set on the camera. The NTP function can be used to synchronize the time on the camera and the recorder. You may not be able to back up SD memory if the time is not synchronized.
- If the recording conditions for multiple cameras are changed and emergency recording is done, recording may be delayed for up to six seconds when 64 cameras are recording at the same time.

Note:

- Depending on the schedule's time table and the amount of images, it may not be possible to acquire them all automatically at one time. The images that cannot be acquired may be acquired at the next acquisition.
- Image acquisition is not done in the following situations. During playback, HTTP download, emergency recording, and external recording
- SD memory data acquisition is interrupted if the following operations occur.
 - Login
 - Emergency recording
 - External recording
 - Shifting to/from summertime (daylight savings)

Event

The recorder's alarm action starts according to the settings when an event occurs. The event function includes, terminal alarms, command alarms, and site alarms.

Event functions

About events

Event action will be performed when some events occur.

Events include, terminal alarms, site alarms, and command alarms.

For example, if a camera sends a site alarm, the recorder receives the alarm and an event occurs.

About event action

Event action is the action done when an event occurs.

Depending on the settings event action include, recording images, recording logs, sending external notification (mail notification, LED, buzzers, transmitting to FTP and others). Here, action that send external notifications are called alarms.

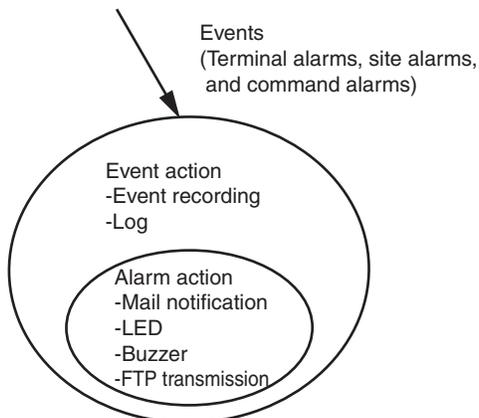


Image of event/alarm action

The recorder starts an event according to the settings when the following events occur.

- **Terminal Alarm** : Signals from door sensors or other external devices are transmitted through the alarm terminal on the rear panel of the recorder.
- **Command Alarm** : Receives command alarms from PCs via a network.
- **Site Alarm** : Receives the Panasonic alarm protocol from network cameras.

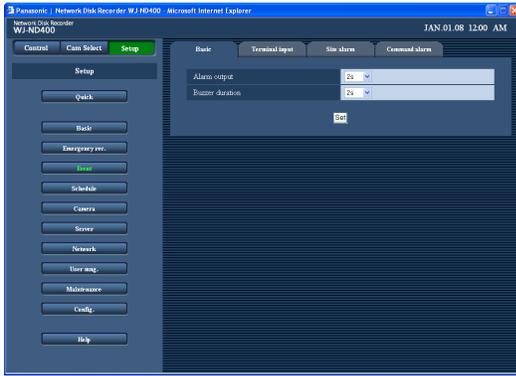
Event action include the following.

- **Start recording images**
Recording is done according to the recording duration and rate settings on the setup menu. The images from a camera before an event occurs can be recorded and linked to the event (pre-event recording). Refer to "Program (page 42)" for details about setting the recording rates.
 - **Display alarm messages**
A pop-up window appears to indicate an event has occurred.
 - **Alarm indicator blinks**
Alarm indicator on the front of the recorder blinks.
 - **Buzzer sounds**
The buzzer sounds according to the settings on the setup menu (page 38).
 - **The camera goes to its preset position.**
The camera moves to a pre-registered preset position. Refer to the Operating Instructions (PDF file) for information about registering preset positions.
 - **Notify of an event occurrence by sending e-mails**
Alarm mail (notification of the time and date of an event) is sent to registered e-mail addresses when an event occurs. A JPEG image can be attached to this e-mail. Up to 4 addresses can be registered to receive the alarm mail. Refer to "Mail (page 58)" for information about the settings.
 - **Alarm signal output from the Alarm/Control connector on the rear panel of the recorder (Alarm output)**
When an event occurs, a signal is output from the Alarm/Control connector on the rear panel of the recorder to sound the buzzer. The time the signal is output is set on the setup menu (page 38).
 - **Event log is recorded**
When an event occurs, the type of event and the time it occurred are recorded in an event log.
 - **Images recorded during events are sent to an FTP server**
When an event occurs, images are recorded from when the event starts for a set period of time and are automatically sent to an FTP server. Refer to "Time table (page 46), FTP (page 56)" for information about the settings.
 - **A PC is notified of an alarm according to Panasonic alarm protocol settings**
When an event or error occurs, a PC is automatically notified regarding event or error information according to the [Panasonic alarm protocol] settings. Install the software* (option) on the PC designated to receive and display event or error notification.
- * Refer to the "readme.txt" file on the CD-ROM for details about the software.

Basics

Use the procedures in this section to configure alarm output duration and buzzer duration settings for when an event (site alarm, terminal alarm, command alarm) occurs.

- 1** Click the [Event] button on the setup menu.
- 2** On the sub-menu that appears, click [Basic].
This displays the event action basic setup window.
- 3** Configure the settings for each item.
Refer to “Basic event settings” table for details about the settings.
- 4** Click the [Set] button.



Basic event settings

Item	Settings	Description
Alarm output	Off / 2s ♦ / 5s / 10s / 20s / 30s / 1min / Ext / Rec	Specifies the alarm output duration. <ul style="list-style-type: none"> • Selecting [Ext] causes alarm output to continue until the "Alarm [ALM]" button is clicked. • Selecting [Rec] causes alarm output while event recording is in progress.
Buzzer duration	Off / 2s ♦ / 5s / 10s / 20s / 30s / 1min / Ext / Rec	Specifies buzzer duration. <ul style="list-style-type: none"> • Selecting [Ext] causes the buzzer to continue to sound until the "Alarm [ALM]" button is clicked or the [BUZZER STOP] button on the front panel is pressed. • Selecting [Rec] causes the buzzer to sound while event recording is in progress.

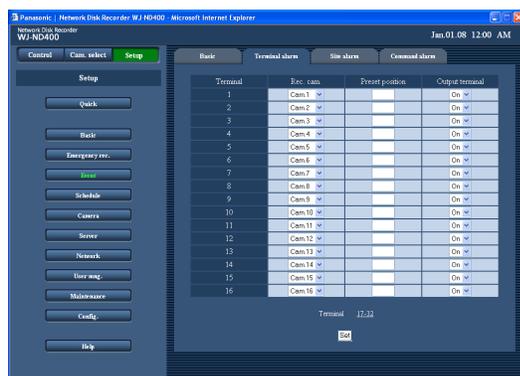
♦ Initial default

Terminal alarm

Use the following procedure to configure settings the control alarm action when a terminal alarm occurs.

For information on how to register preset positions for the camera, refer to the Operating Instructions.

- 1 Click the [Event] button on the setup menu.
- 2 On the sub-menu that appears, click [Terminal alarm].
This will display the terminal alarm setting window.



- 3 **Configure the settings for each item.**
Refer to "Terminal alarm settings" table for details about the settings.
 - To configure the settings of a terminal that is not shown on the display, click the terminal number range above the [Set] button to change the contents of the window.
 - Clicking a terminal number range will save the currently displayed camera settings.
- 4 Click the [Set] button.

Terminal alarm settings

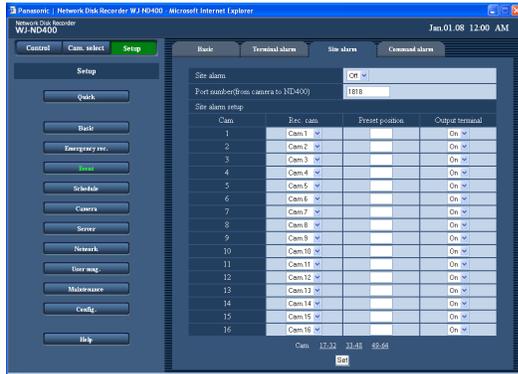
Item	Settings	Description
Rec. cam.	Cam.1 to Cam.64 / --	Specifies the channel of the recording camera.
Preset position	Number input (Blank◆)	Specifies the preset position (1 to 256) during alarm input. <ul style="list-style-type: none"> • When this setting is blank, the camera does not move to a preset position.
Output terminal	Off / On◆	Specifies whether an alarm signal should be output when an event occurs.

◆ Initial default

Site alarm

Use the following procedure to configure settings that control terminal alarm action when a Panasonic alarm protocol alarm (site alarm) is sent from a camera.

- 1 Click the [Event] button on the setup menu.
- 2 On the sub-menu that appears, click [Site alarm].
This will display the site alarm setting window.



- 3 **Configure the settings for each item.**
Refer to “Site alarm settings” table for details about the settings.
 - To configure the settings of a camera that is not shown on the display, click the applicable camera number range above the [Set] button to change the contents of the display.
 - Clicking a camera number range saves the currently displayed camera settings.

- 4 Click the [Set] button.

Site alarm settings

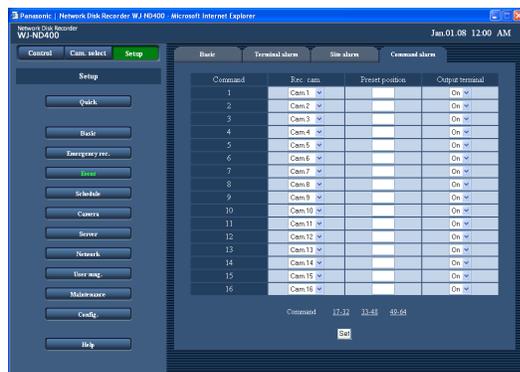
Item	Settings	Description
Site alarm	Off♦ / On	Specifies whether to validate the site alarm.
Port number (from camera to ND400)	Port number input (1818♦)	Specifies the port number that receives the site alarm.
Site alarm setup		
Rec. cam.	Cam.1 to Cam.64 / --	Specifies the channel of the recording camera.
Preset position	Signal input (Blank♦)	Specifies the preset position (1 to 256) during alarm input. <ul style="list-style-type: none"> • When this setting is blank, the camera does not move to a preset position.
Output terminal	Off / On♦	Specifies whether an alarm signal should be output when an event occurs.

♦Initial default

Command alarm

Use the following procedure to configure settings that control command alarm action when an event occurs.

- 1 Click the [Event] button on the setup menu.
- 2 On the sub-menu that appears, click [Command alarm].
This will display the command alarm setting window.



- 3 **Configure the settings for each item.**
Refer to “Command alarm settings” table for details about the settings.
 - To configure the settings of a command alarm that is not shown on the display, click the applicable command alarm number range above the [Set] button to change the contents of the display.
 - Clicking a command number saves the currently displayed command settings.
- 4 Click the [Set] button.

Command alarm settings

Item	Settings	Description
Rec. cam.	Cam.1 to Cam.64 / --	Specifies the channel of the recording camera.
Preset position	Number input (Blank◆)	Specifies the preset position (1 to 256) during alarm input. <ul style="list-style-type: none"> • When this setting is blank, the camera does not move to a preset position.
Output terminal	Off / On◆	Specifies whether an alarm signal should be output when an event occurs.

◆ Initial default

Schedules

Create a schedule by specifying the day and time to record.

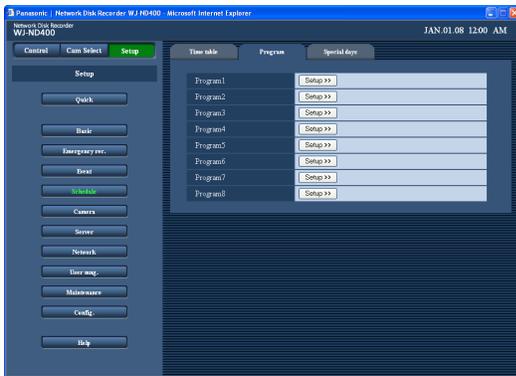
Program

Use the procedure in this section to create a recording program that controls live images, the recording rate, etc. You can create up to eight recording programs on the recorder.

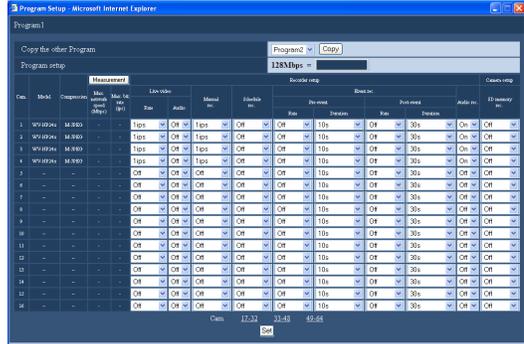
1 Click the [Schedule] button on the setup menu.



2 On the sub-menu that appears, click [Program]. This will display the schedule program setting window.



3 Click the [Setup >>] button of the program number whose settings you want to configure. This will display the program setting window.



Button Functions

[Copy] button : Copies the settings of the currently selected program. Changes the settings of the currently displayed window.

[Measurement] button : Click to check for proper operation at the specified recording rate. (page 45)

4 Configure the settings for each item.

Refer to “Program settings” table for details about the settings.

- To configure the settings of a camera that is not shown on the display, click the applicable camera number range above the [Set] button to change the contents of the display.
- Clicking a camera number range will save the currently displayed camera settings.

5 Click the [Set] button.

Important:

- Only the currently displayed page (the selected program) can be copied.

Program settings

Item	Settings	Description
Model		Shows the model number of the selected camera.
Compression		Shows the compression format of the recorded image. <ul style="list-style-type: none"> To change the compression format, refer to "NW camera (page 48)".
Measurement		
Max. network speed (Mbps)		Shows the maximum bit rate on the network being used when the [Measurement] button is clicked.
Max. bit rate (ips)		Shows the maximum recording rate on the network being used when the [Measurement] button is clicked. <ul style="list-style-type: none"> A red rate setting value indicates that live images or recording of the image may not be possible at the specified rate.
Recorder setup - Live video		
Rate	Off ¹ / 1ips ² / 2ips / 3ips / 5ips / 10ips / 15ips / All ³ / I-Frame	Specifies the live image rate of the camera image. <ul style="list-style-type: none"> Available settings differ according to the currently selected compression format. Refer to "Checking and changing a camera (Manually setting) (page 50)" for details about compression method settings.
Audio	Off ^{1,2,3} / On	Specifies whether audio should be transmitted with live images. <ul style="list-style-type: none"> Audio and live video are sent at the same time. Audio cannot be transmitted unless live images are transmitted. Audio transmitting can be selected only for a camera model that supports audio transmitting.
Recorder setup		
Manual rec.	Off ¹ / 0.1ips / 0.2ips / 0.3ips / 0.5ips / 1ips ² / 2ips / 3ips / 5ips / 10ips / 15ips / All / I-Frame ³	Specifies the recording rate for manual recording. Available settings differ according to the currently selected compression format.
Schedule rec.	Off ^{1,2,3} / 0.1ips / 0.2ips / 0.3ips / 0.5ips / 1ips / 2ips / 3ips / 5ips / 10ips / 15ips / All / I-Frame	Specifies the recording rate for schedule recording. Available settings differ according to the currently selected compression format.
Recorder setup - Event rec. - Pre-event		
Rate	Off ^{1,2,3} / 1ips / 2ips / 3ips / 5ips / 10ips / 15ips / All / I-Frame	Specifies the rate of pre-event recording. <ul style="list-style-type: none"> Available settings differ according to the currently selected compression format. Refer to "Checking and changing a camera (Manually setting) (page 50)" for details about compression method settings. [All] cannot be selected when [M-JPEG] is selected as the compression format.
Duration	2s / 5s / 10s ^{1,2,3} / 20s / 30s / 1min / 3min / 5min / 10min / 15min	Specifies the time of pre-event recording. <ul style="list-style-type: none"> Pre-event recording on a camera channel for which a pre-recording area has been made on the HDD is performed at all times by the pre-recording area in the HDD. Refer to "Pre-event recording area formatting (page 88)" for details about pre-recording area. For guidelines on times in pre-event recording when the pre-recording area has not been made on the HDD, refer to the memo at page 44.
Recorder setup - Event rec. - Post-event		
Rate	Off ^{1,2,3} / 1ips / 2ips / 3ips / 5ips / 10ips / 15ips / All / I-Frame	Specifies the rate of post-event recording. <ul style="list-style-type: none"> Available settings differ according to the currently selected compression format. Refer to "Checking and changing a camera (Manually setting) (page 50)" for details about compression method settings.

Schedules

Item	Settings	Description
Duration	2s / 5s / 10s / 20s / 30s ^{*1*2*3} / 1min / 2min / 3min / 5min / 10min / 15min / Manual / Continue	Specifies the time of post-event recording. <ul style="list-style-type: none"> When [Manual] is selected, recording is performed only while the alarm signal is being input. At that time, minimum recording time is eight seconds. Selecting [Continue] causes recording to continue until the "Alarm [ALM]" button is clicked.
Recorder setup		
Audio rec. (Audio recording)	Off ^{*1*2*3} / On	Specifies whether audio should be recorded with images. <ul style="list-style-type: none"> Audio and images are recorded at the same time. Audio only recording without image recording is not supported. Audio recording can be selected only for a camera model that supports audio recording.
Camera setup		
SD memory rec. (SD memory recording)	Off ^{*1*2*3} / 0.1ips / 0.5ips / 1ips	Specifies whether images should be saved to an SD memory card if the signal is lost during recording. <ul style="list-style-type: none"> If the camera is a model that supports SD memory recording and the recording format is [M-JPEG], you can specify a recording rate. For information about SD memory recording, refer to About SD memory recording (page 36). Do not set SD memory recording rates on multiple network disk recorders for the same camera. Audio recording and SD memory recording cannot be done at the same time. If the SD memory recording rate for a camera is set to anything except [Off], audio recording for that camera channel is automatically set to [Off].

*1 Initial default setting when camera is not registered

*2 Initial default setting when camera is registered (Compression Format: JPEG, M-JPEG)

*3 Initial default setting when camera is registered (Compression Format: MPEG-4)

Important:

- Recording at the set recording rate and for the set recording time may not be possible depending on the network environment or the size of image data.
- When a pre-event recording area has not been assigned to the HDD, the maximum pre-event recording time with audio on is 30 seconds.
- We recommend setting the camera's refresh cycle to one second if the camera's compression format is MPEG-4. If the camera's refresh cycle is too long, pre-event recording data may not be created.
- Recording for the set Post-event recording time may not be possible depending on the timing of the event occurrence.
- When "Audio" and "Audio rec." are set to [On], ensure that the audio mode of the camera is set to [On]. Also, set the camera's audio bit rate to "32 kbps".
- When the camera's audio bit rate is set again during operation, set the audio recording settings on the recorder to [Off] and then back to [On] again.
- Audio interruptions may occur because of the "Mic input interval" (intervals for audio reception) setting of the camera. Select the interval setting of the camera according to the network environment.
- Audio interruptions may occur because of the recording rate. To resolve this, change the recording rate according to the network environment.
- To record audio, set the camera's "Audio transmission/reception" to "Mic input" or "Interactive(full duplex)". Some models and versions of cameras do not support "Interactive(full duplex)". For details refer to the operating instructions for the camera.
- Audio is recorded regardless of whether single or multiple screen display is set.

Note:

- In the case of an MPEG-4 image, set a recording time of at least 10 seconds.
- Refer to the following table as a guideline when setting the times in pre-event recording.

Pre-event recording rate	JPEG resolution/image quality VGA/24 KB or equivalent	JPEG resolution/image quality VGA/48 KB or equivalent	JPEG resolution/image quality VGA/128 KB or equivalent
3ips	50s	25s	10s
5ips	30s	15s	6s
10ips	15s	8s	3s

About the [Measurement] button

Clicking the [Measurement] button displays a window that you can use to confirm that the specified rates provide proper operation on the network being used. A red rate setting value indicates that live images or recording of the image may not be possible at the specified rate.

Measurement takes about 90 seconds.

- When measurement results (total of all camera maximum speeds) are greater than the recorder network speed, heavy network traffic can cause dropping of recorded images, live images, alarms, and other data, degraded operational response, restarts, and other problems. (Guideline network speed: 128 Mbps)
- Even when measurement results do not exceed the above guideline network speed, the number of connected cameras and PCs can cause some of the phenomena described above.

Important:

- Network traffic volume fluctuates depending on the network environment. Set a rate based on measurement results to ensure enough margin for maximum network speed.
- Recording, playback, live video, a copying are all disabled while measurement is in progress.

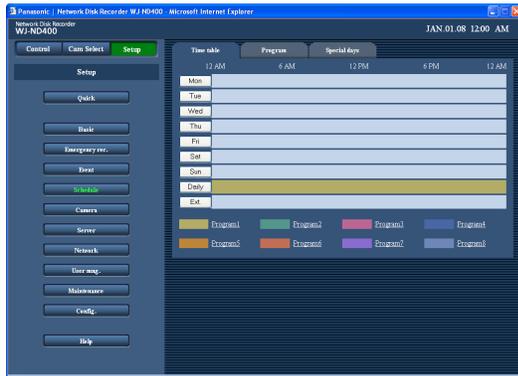
Note:

- Other users connected to the recorder are logged out automatically during measurement. They are logged back in after measurement is complete.
 - Measurement results are for reference only. They are subject to change in accordance with the network environment.
 - The target for measurement is the value after clicking [Set].
 - Since the recorder uses a network, network traffic and other factors can make it impossible to obtain live video and recorded images as expected from the setup, slow browser response, or broken connections. Also, recording may not be possible when the recorder is in use or malfunctioning. We are not liable for lost content.
-

Time table

Use the procedure in this section to configure time table settings to schedule recording operations for each day of the week, and to assign each time table to a recording program. You can configure up to six time tables, for specific days of the week. You also can configure settings for externally controlled recording. Refer to page 47 for details about external recording.

- 1 Click the [Schedule] button on the setup menu.
- 2 On the sub-menu that appears, click [Time table]. This will display the schedule time table setting window.



- 3 Click a day of the week, [Daily], or [Ext.] to select the type of setting you want to configure. This will display the "Time table Setup" window.

- To copy the time table currently configured for another day of the week, select the day of the week with the "Copy the other program" box and then click the [Copy] button.



Button Functions

- [Copy] button : Copies the settings of the currently selected day of the week.
- [View] button : Displays the contents of the currently selected program.

- 4 Configure the settings for each item. Refer to "Time table setup" table for details about the settings.
- 5 Click the [Set] button.
 - The set time table and program are reflected.
 - Programs are displayed by color.

Time table setup

Item	Settings	Description
Start ¹	-- / 00:00 to 23:45	Specifies the recording start time. <ul style="list-style-type: none"> • No time after [23:46] is supported for the recording start time setting. • Repeat steps 1-5 to set programs of another day of the week.
End ¹	-- / 00:15 to 24:00	Specifies the recording end time.
Program	Program 1 ♦ to Program 8	Selects the recording program.
Event	Off / On ♦	Set whether event operations are done when an event occurs. <ul style="list-style-type: none"> • Event operations are not done if set to [Off].
FTP transmission by periodic timer	Off ♦ / On	Specifies whether images should be sent periodically to the FTP server. <ul style="list-style-type: none"> • If you select [On], also configure "FTP (page 56)".
FTP image transmission by alarm	Off ♦ / On	Specifies whether images of the alarm location should be sent to the FTP server when an event occurs. <ul style="list-style-type: none"> • If you select [On], also configure "FTP (page 56)".

Item	Settings	Description
Alarm message	Off / On ♦	Specifies whether an event alert pop-up should appear on the PC window of the administrator when an event occurs.
Panasonic alarm protocol	Off ♦ / On	Specifies whether event information should be sent to a PC automatically when an event occurs. <ul style="list-style-type: none"> Refer to "Panasonic alarm protocol (page 67)" for details about destination address settings. Special software² is required for a PC to display received information.
Alarm mail	Off ♦ / On	Specifies whether alarm mail should be output when an event occurs. <ul style="list-style-type: none"> For information about configuring the mail server address, destination address, and other mail settings, refer to "Mail (page 58)". For information about mail, refer to "Alarm mail notification (page 90)".

♦ Initial default

*1 There must be at least 15 minutes between the specified start and end times.

*2 Refer to the "readme.txt" file on the CD-ROM for details about the software.

Note:

- If an error occurs, alarm message, Panasonic alarm protocol, and alarm mail operate even if they are off.

About externally controlled recording

Connecting an external switch to the recorder makes it possible control recording in accordance with external switch On/Off operations. In order to perform externally controlled recording, you will need to configure a recording program with schedule indicating when the external switch is to be used.

For information about external switch connection, refer to the Installation Guide.

The following is the priority sequence used when the individual day, daily, and external recording schedules overlap.

[Ext.] > "[Mon] through [Sun] (day of week)" > [Daily]

Important:

- Recording is not performed when input is received from an external switch during a time for which there is no recording program allocated. Be sure to allow enough margin when allocating externally controlled recording times.

Special days

The special days feature lets you assign the time table configured for a day of the week to another day. You can assign up to 30 special days.

The following is the priority sequence used when the individual day, daily, external recording, and special day schedules overlap.

[Ext.] > [Special days] > "[Mon] through [Sun] (day of week)" > [Daily]

- Click the [Schedule] button on the setup menu.
- On the sub-menu that appears, click [Special days]. This will display the special days setting window.



- Enter the date and day of the week of the special day.
- Click the [Set] button.

Camera

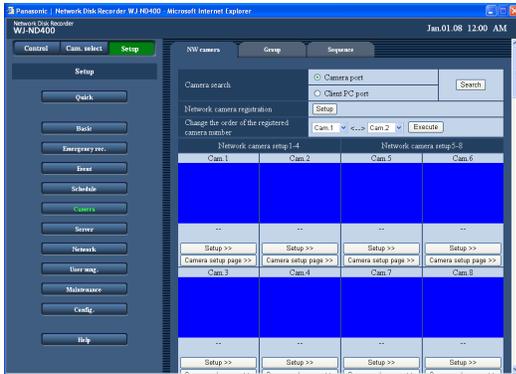
Configure the network settings (address, ports etc.) and group settings, and sequence operations for the cameras.

NW camera

Use the procedures in this section to register and modify network cameras.

Automatically detecting and registering cameras

- 1 Click the [Camera] button on the setup menu.
- 2 Click the [NW camera] tab.
This will display the "NW camera setup" window.



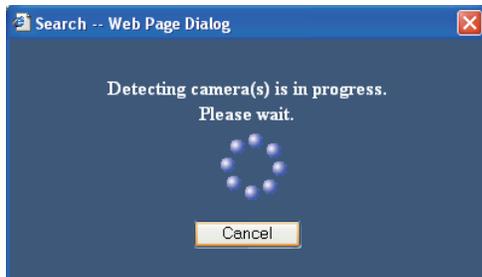
Button Functions

[Search] button : This causes the cameras to be detected automatically.

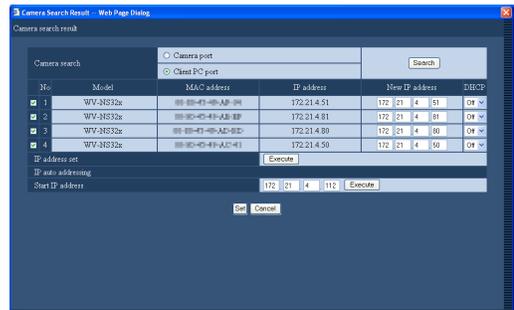
- 3 Select one of the following for the camera detect network port.
[Camera port] / [Client PC port]
- 4 Click the [Search] button.
This will display a camera search confirmation message.



- 5 Click the [OK] button.
This will detect the camera and perform registration. The "Search" dialog box appears while registration is in progress.



- 6 Find the camera you want to register, and check if its check box under "Camera search" is selected.
If the check box is not selected, select it.
 - You can register up to 64 cameras (the list of detected cameras can show up to 128). Registration will not be possible if more than 64 cameras are selected in the list. Adjust the list so there are no more than 64 cameras selected.
 - If multiple cameras have the same IP address, the IP address and MAC address will be displayed in red. In this case, change the IP address for one of the cameras and make sure that the same IP address is not used for two cameras or more.



- 7 To change the IP address of a camera, enter the new address into the "New IP address" field and then click the [Execute] button.

Note:

- Entering a start address and then clicking the [Execute] button automatically assigns the numbers in the blank following the IP address.

- 8 Click the [Set] button.
This completes registration.
 - When the recorder is configured to assign IP addresses to cameras, the above procedure will cause the camera IP address to be changed.

NW camera settings 1

Item	Settings	Description
Model		Shows the model number of a detected camera.
MAC address		Shows the MAC address of the camera.
IP address		Shows the IP address of the camera.
New IP address	Address input	Enter a new IP address to assign it to a camera.
DHCP	Off / On	Specifies whether DHCP is used by the camera.

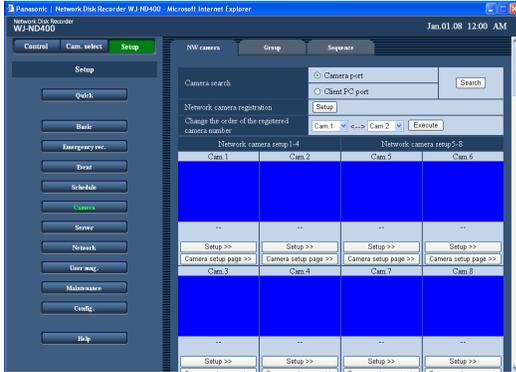
◆ Initial default

Note:

- Registering a camera forcibly logs out any other users currently logged in to the recorder.
- All recording is disabled while camera registration is in progress.
- Camera search cannot be used with cameras on another subnet accessed via a router.
- For improved security, some camera models whose settings have been changed from initial defaults are detected for the only first 20 minutes after power is turned on. For details refer to the operating instructions for the camera.
- The compression format of registered cameras is set automatically to JPEG or M-JPEG.
- In the case of IP auto addressing, set 255.255.255.0 for the subnet mask of the port connected to the cameras.
- When automatically assigning IP addresses, make sure the octets of the port selected in step 3 on "Automatically detecting and registering cameras (page 48)" match the gateway. Depending on the camera, IP addresses cannot be assigned if it is not set.
- Registering an IP address to a camera automatically sets the camera's HTTP port number to 80. Also, the camera's subnet mask and default gateway are set to the same values as the camera's network port subnet mask and default gateway.
- When the [Execute] button is clicked and the IP addresses of the cameras are changed, the checkboxes of the detected cameras (1-64) on the "Camera Search Result" window will be checked.
- When the [Execute] button of "Start IP Address" is clicked, the unit will automatically find an unused IP address and set it to the detected camera. However, depending on the network environment, the set IP address may be already used for the other network device such as when using the firewall function of Windows®. In this case, check the IP address setting and register the other IP address for the camera manually. When a message saying there is no available IP address is displayed, check and arrange the IP address settings to manually register an unused IP address to the camera.
- "Start IP Address" is available only when "OFF" is set for the DHCP settings of the unit.

Switch cameras (4-screen display setting)

- 1 Click the [Camera] button on the setup menu.
- 2 Click the [NW camera] tab.
This will display the "NW camera setup" window.



- 3 Select the numbers of the cameras to switch in the pull down menu for switching cameras.

- The 4-screen combinations are displayed as channels 1 to 4, 5 to 8, and so on up to 61 to 64. To change the combination, change the sequence of the camera channels.
- The settings are shared by the 4-screen live sequence display.

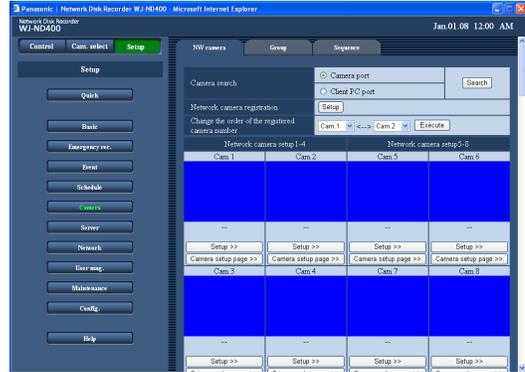
- 4 Click the [Execute] button.
This changes the camera channel number.

Important:

- When you camera channel number is changed, it is also changed for the following settings.
 - "Emergency recording (page 34)"
 - "Program (page 42)"
 - "Network information (page 79)"

Checking and changing a camera (Manually setting)

- 1 Click the [Camera] button on the setup menu.
- 2 Click the [NW camera] tab.
This will display the "NW camera setup" window.



Button Functions

[Setup] button : Displays a list of camera setup screens.

[Setup >>] button : Displays individual camera setup screens.

[Camera setup page: >>] button : The setup menu on the camera can be called up. For information about camera settings, refer to the camera operating instructions.

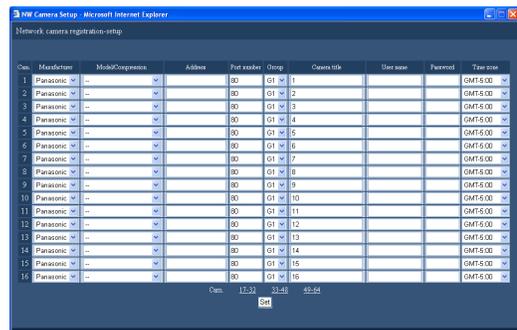
Important:

- To call up the camera setup menus, "On" must be selected for [Port forwarding] (page 61).
- A camera setup menu may not be able to display an image.
- Cameras may not be controllable unless the camera's user name and password are entered.

- 3 Click the [Setup] button or the [Setup >>] button for the camera whose settings you want to check or change.

This will display the [Network camera registration-setup] window. (The setup is shown below)

- To configure the settings of a camera that is not shown on the display, click the applicable camera number range above the [Set] button to change the contents of the display.



- 4 Check or change the items you want.**
Refer to "NW camera settings 2" table for details about the settings.
- 5 Click the [Set] button.**

NW camera settings 2

Item	Settings	Description
Manufacturer	Panasonic◆ / Axis	Specifies the camera manufacturer.
Model/Compression	--◆ Model/JPEG Model/M-JPEG Model/MPEG4	Specifies the camera model and image compression format. Refer to the "readme.txt" file on the CD-ROM for details about camera's model number. Changing the compression format automatically changes the live video and recording rate settings. If you change the setting, reconfigure the rate setting (page 42). <ul style="list-style-type: none"> Changing from MPEG-4 to JPEG or M-JPEG will change the rate setting to [1ips]. Changing from JPEG or M-JPEG to MPEG-4 will change the rate setting to [I-Frame]. Changing the compression mode and non-compression mode items at the same time will change the rate setting to [Off].
Address	Address input (Blank◆)	For entering the address of the camera
Port number	Port number input (80◆)	For setting the HTTP port used by the camera in the range of 1 to 65535.
Group	G1◆ to G8	Specifies the group to which the camera belongs.
Camera title	Title input (Camera 1:1◆ to Camera 64:64◆)	Specifies the camera title, which is displayed on the [Cam. select] box, etc. <ul style="list-style-type: none"> The camera title can be made up of up to 16 single-byte numerals and symbols, or 16 two-byte characters. The following characters are not allowed as symbols. "!\$%'<=>@[]^_`{ }~"
User name	Name input (Blank◆)	Specifies the user name for accessing a camera and logging in. <ul style="list-style-type: none"> The password can be up to 32 single-byte characters long.
Password	Enter password (Blank◆)	Specifies the password for accessing a camera and logging in. <ul style="list-style-type: none"> The password can be up to 32 single-byte characters long.
Time zone	GMT-12:00 to GMT+13:00 NTSC model : (GMT-5:00◆) PAL model : (GMT+0:00◆)	Specifies the time zone of the camera.

◆ Initial default

Note:

- When the set camera is disconnected, [CONNECT ERROR] is displayed. In this case, [Model/Compression] is set as [--] for the removed camera on the network camera registration window. Delete the address in [Address].
- If the camera cannot be connected with, the reasons are displayed in the thumbnail. The primarily displayed contents are as follows.

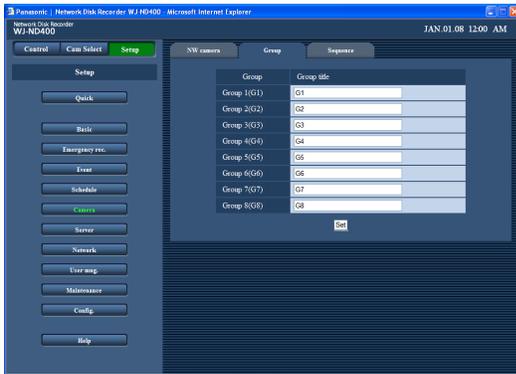
Item	Description
CONNECT ERROR	Could not communicate with the camera.
ATTEST ERROR	Camera user authentication failed.
DNS ERROR	The DNS server cannot resolve the camera address.
CAMERA ERROR	The response from the camera is incorrect.
PROXY(CONNECT) ERROR	Cannot connect with the proxy server.
PROXY(DNS) ERROR	Cannot resolve the proxy server address.
PROXY(CAMERA) ERROR	The response from the proxy server is incorrect.

Group

Use the following procedure to specify the group title of a camera.

- 1** Click the [Camera] button on the setup menu.
- 2** Click the [Group] tab.
This will display the "Group Setting" window.

- 3** Input a group title.
Refer to "Group settings" table for details about the settings.
- 4** Click the [Set] button.



Group settings

Item	Settings	Description
Group title	Title input (Group 1: G1 ♦ to Group 8: G8 ♦)	Specifies the group title of a camera. <ul style="list-style-type: none"> The group title can be made up of up to 16 single-byte numerals and symbols, or 16 two-byte characters. The following characters are not allowed as symbols. "!\$%'<=>@[]^_`{ }~"

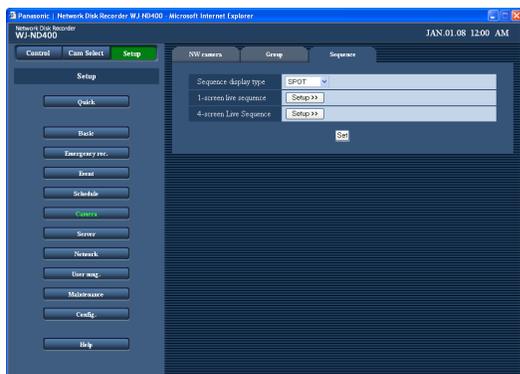
♦ Initial default

Sequence

Use the following procedure to configure settings for automatically switching the camera image in a preset sequence.

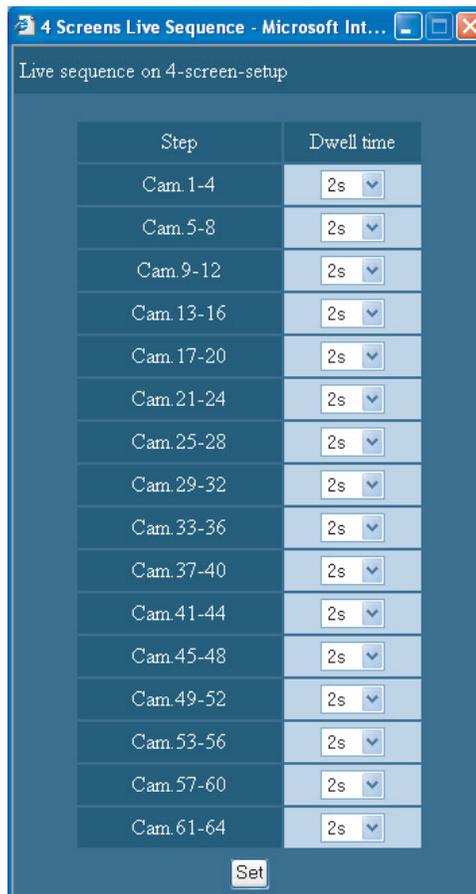
1 Click the [Camera] button on the setup menu.

2 Click the [Sequence] tab.
This will display the "Sequence Setting" window.



3 Configure the settings for each item.
Refer to "Sequence display type settings" table for details about the settings.

- Clicking the [Setup >>] button will display an advanced settings window for the selected sequence.



4 Click the [Set] button.

Note:

- You must change the camera number when you change the 4-screen live sequence display (page 50).
- When the camera image compression format specified for the selected camera channel is MPEG-4, the image is skipped and the next image is displayed.

Sequence display type settings

Item	Settings	Description
Sequence display type	1-screen ♦ / 4-screen	Selects 1-screen or 4-screen during sequence display.

♦ Initial default

1-screen live sequence

Item	Settings	Description
Cam.	Cam.1 to Cam.64 / --	Specifies the camera images displayed for each step. <ul style="list-style-type: none"> Selecting [--] causes the step to be skipped.
Preset position	Signal input (Blank ♦)	Specifies the camera preset position (1 to 256). <ul style="list-style-type: none"> When this setting is blank, the camera does not move to a preset position.
Dwell time	2s ♦ / 3s / 5s / 10s / 20s	Specifies the amount of time until a switch is made to the next step in the sequence.

♦ Initial default

4-screen live sequence

Item	Settings	Description
Dwell time	2s ♦ / 3s / 5s / 10s / 20s	Specifies the amount of time until a switch is made to the next step in the sequence.

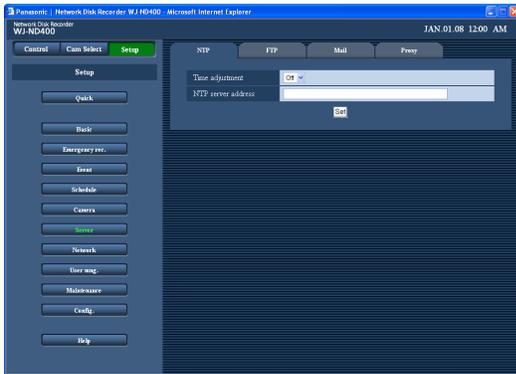
♦ Initial default

NTP

Configures settings for clock adjustment based on an NTP (Network Time Protocol) server.

- 1 Click the [Server] button on the setup menu.
- 2 On the sub-menu that appears, click [NTP].
This will display the "NTP Setup" window.

- 3 Configure the settings for each item.
Refer to "NTP settings" table for details about the settings.
- 4 Click the [Set] button.



NTP settings

Item	Settings	Description
Time adjustment	Off♦ / On	Specifies whether an NTP server is used.
NTP server address	Address input (Blank♦)	Enter the name or IP address of the NTP server. When entering a server name, you must use the DNS. <ul style="list-style-type: none">• Enter up to 255 single-byte alpha-numeric characters, including hyphen (-) and period (.).

♦ Initial default

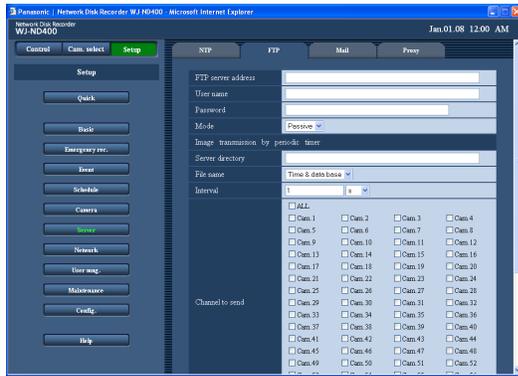
Important:

- "Time adjustment" may not operate when the recorder's DHCP setting is [On] and operating, and the time setting for NTP server and recorder are more than 1000 seconds out of sync.
- About the NTP Server Function
The recorder can operate as a camera's NTP server. When it does, set the port number of the camera to 123.
For information about camera settings, refer to the camera operating instructions.

FTP

Use the following procedure to send images from a camera connected to the recorder to a specified FTP server.

- 1** Click the [Server] button on the setup menu.
- 2** On the sub-menu that appears, click [FTP].
This will display the "FTP Setup" screen.
- 3** Configure the settings for each item.
Refer to "FTP settings" table for details about the settings.
- 4** Click the [Set] button.



FTP settings

Item	Settings	Description
FTP server address	Address input (Blank◆)	Enter the name or IP address of the FTP server where images are sent. <ul style="list-style-type: none"> Enter up to 255 single-byte alpha-numeric characters, including hyphen (-) and period (.). When entering a server name, you must use the DNS.
User name	Name input (Blank◆)	Enter the user name (log in name) for accessing the FTP server. <ul style="list-style-type: none"> Enter up to 32 single-byte alpha-numeric characters and symbols, excluding ampersand (&) and spaces.
Password	Enter password (Blank◆)	Enter the password for the above user name. <ul style="list-style-type: none"> Enter up to 32 single-byte alpha-numeric characters and symbols, excluding ampersand (&) and spaces.
Mode	Active / Passive◆	Specifies the mode when sending images to the FTP server. <ul style="list-style-type: none"> When send is not possible with [Passive], change to [Active].
Image transmission by periodic timer		Set the following items to periodically transmit live images. Setting whether or not to transmit live images to the FTP server can be set for scheduled time periods with "Time table (page 46)".
Server directory	Name input (Blank◆)	Enter the send destination directory. <ul style="list-style-type: none"> Enter up to 255 single-byte alpha-numeric characters and symbols, excluding &*:<>? ~ and spaces.
File name	Time & date base◆ / Serial number	Specify the rules for the file name used for sending images.
Interval	Value input s / min (units) (1s◆)	Specifies the interval for image transmission by periodic timer. <ul style="list-style-type: none"> Enter a number (0.1 - 0.9 (in steps of 0.1 sec.), 1-1440) for transmission interval, and select "s" (seconds) or "min" (minutes) for the transmission interval. Select either [s] (seconds) or [min] (minutes) as the time unit. When selecting "s", 0.1 - 0.9 (0.1, 0.2, 0.3, 0.4, 0.5, 0.6, 0.7, 0.8, 0.9) are available.

Item	Settings	Description
Channel to send	Unselected ♦ / All / Cam.1 to Cam.64	Select the camera channel for image transmission by periodic timer. Images from the camera whose check box is selected are sent to the FTP server. <ul style="list-style-type: none"> Image transmission by periodic timer cannot be used when the image compression format of the selected camera channel is [MPEG-4].
Image transmission by alarm		Set the following items to transmit images of where an alarm occurs at an event. Setting whether or not to transmit live images to the FTP server where an alarm occurs at an event can be set for scheduled time periods with "Time table (page 46)".
Server directory	Name input (Blank ♦)	Enter the send destination directory. <ul style="list-style-type: none"> Enter up to 255 single-byte alpha-numeric characters and symbols, excluding &*:<>? \~ and spaces.*¹
Duration-Pre	Off ♦ / 1 s to 10 s (Settable in 1-second units.)	Specify the time of the pre-event image to be sent. <ul style="list-style-type: none"> Transmission of images to the FTP server may not be possible for "Duration-Pre" when the image compression method of the selected camera channel is [MPEG-4].
Duration-Post	Off / 1 s to 10 s (Settable in 1-second units.) (5s ♦)	Specify the time of the post-event image to be sent. <ul style="list-style-type: none"> Transmission of images to the FTP server may not be possible for "Duration-Post" when the image compression method of the selected camera channel is [MPEG-4].
Alteration Detection	Off ♦ / On	Specifies whether data should be included for alteration detection by the viewer software.

♦ Initial default

*1 You can enter the following single-byte alpha-numeric characters and symbols.

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z a b c d e f g h i j k l m n o p q r s t u v w x y z
0 1 2 3 4 5 6 7 8 9 ! # \$ % ` () + , - . / ; = @ [] ^ _ ` { }

Important:

- Pre-event images are not sent when pre-event recording is not specified. For information about configuring pre-event recording settings, refer to page 42.

Note:

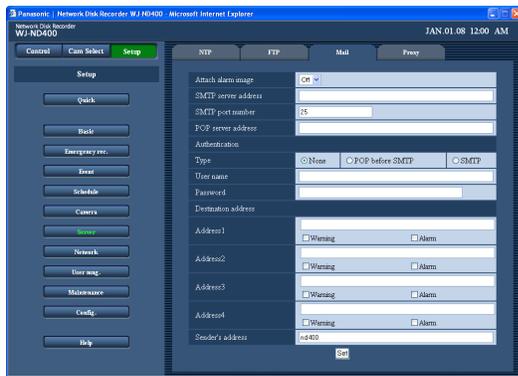
- Images recorded with emergency recording can be transmitted to the FTP server. The camera channels transmitted to the FTP server, recorded images, and the directory of the FTP server are as follows.
 - Camera channels to transmit : Camera channel of emergency recording
 - Recorded images : Images recorded from the start of emergency recording to the time set for "Duration-Post".
 - Directory of the FTP server : Directory set under [Image transmission by alarm] - [Server directory] for the FTP server set for [FTP server address].

Mail

Use the following procedure to configure settings for sending alarm mail and for warning mail notification.

- 1** Click the [Server] button on the setup menu.
- 2** On the sub-menu that appears, click [Mail].
This will display the [Mail] setup window.

- 3** Configure the settings for each item.
Refer to “Mail settings” table for details about the settings.
- 4** Click the [Set] button.



Mail settings

Item	Settings	Description
Attach alarm image	Off♦/On	Specifies whether the image when the event occurred should be attached to the mail. <ul style="list-style-type: none"> Image attachment is not supported when the compression format specified for the camera image being sent is MPEG-4. Even if [On] is selected here, the image will not be attached if [Off] is selected for the recording rate setting of event recording.
SMTP server address	Address input (Blank♦)	Enter the server name or IP address of the SMTP server sending the mail. <ul style="list-style-type: none"> Enter up to 255 single-byte alpha-numeric characters, including hyphen (-) and period (.). When entering a server name, you must use the DNS.
SMTP port number	Port number input (25♦)	Specifies the SMTP port number in the range of 1 to 65535.
POP server address	Address input (Blank♦)	Enter the server name or IP address of the POP server receiving the mail. <ul style="list-style-type: none"> Enter up to 255 single-byte alpha-numeric characters, including hyphen (-) and period (.). When entering a server name, you must use the DNS.
Authentication		
Type	None♦ / POP before SMTP / SMTP	Specifies the type of authentication when sending e-mails.
User name	Name input (Blank♦)	Enter the user name (log in name) used for authentication. <ul style="list-style-type: none"> Enter up to 32 single-byte alpha-numeric characters and symbols, excluding ampersand (&) and spaces.*1
Password	Enter password (Blank♦)	Enter the password for the above user name. <ul style="list-style-type: none"> Enter up to 32 single-byte alpha-numeric characters and symbols, excluding ampersand (&) and spaces.*1
Destination address		
Address1 to Address4	Address input (Blank♦)	Specifies destination mail addresses for alarm mail and warning mail. Up to four addresses can be specified. Select the check box next to the type of mail (warning/alarm) to be sent. <ul style="list-style-type: none"> Enter up to 255 single-byte alpha-numeric characters, including hyphen (-), period (.), at (@), and underscore (_).
Sender's address	Address input (nd400♦)	Enter the sender's mail address. The address entered here will appear in the From field of the recipient's mail message. <ul style="list-style-type: none"> Enter up to 127 single-byte alpha-numeric characters, including hyphen (-), period (.), at (@), and underscore (_).

♦Initial default

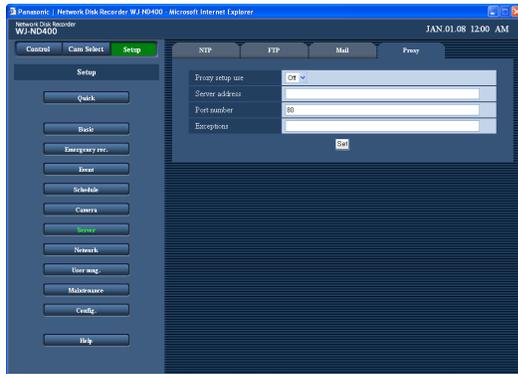
*1 You can enter the following single-byte alpha-numeric characters and symbols.

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z a b c d e f g h i j k l m n o p q r s t u v w x y z
0 1 2 3 4 5 6 7 8 9 ! # \$ % ^ ` () * + , - . / : ; < = > ? @ [\] ^ _ { | } ~

Proxy

Use the following procedure to configure settings to use the proxy server.

- 1** Click the [Server] button on the setup menu.
- 2** On the sub-menu that appears, click [Proxy]. This will display the "Proxy setting" window.
- 3** Configure the settings for each item. Refer to "Proxy settings" table for details about the settings.
- 4** Click the [Set] button.



Proxy settings

Item	Settings	Description
Proxy setup use	Off♦ / On	Specifies whether a proxy server is used. <ul style="list-style-type: none"> When [On] is selected, configure the [Server address], [Port number], and [Exceptions] settings.
Server address	Address input (Blank♦)	Enter the name or IP address of the proxy server. When entering a server name, you must use the DNS. <ul style="list-style-type: none"> Enter up to 255 single-byte alpha-numeric characters, including hyphen (-) and period (.).
Port number	Port number input (80♦)	Enter the proxy server port number.
Exceptions	Address input (Blank♦)	Specifies cameras that do not use the proxy server. Enter the IP addresses of the exception cameras. <ul style="list-style-type: none"> Enter up to 128 single-byte alphanumeric characters, including asterisk (*) and period (.). When specifying multiple addresses, separate them by semicolons (;). You can use the "*" special character to represent any number.

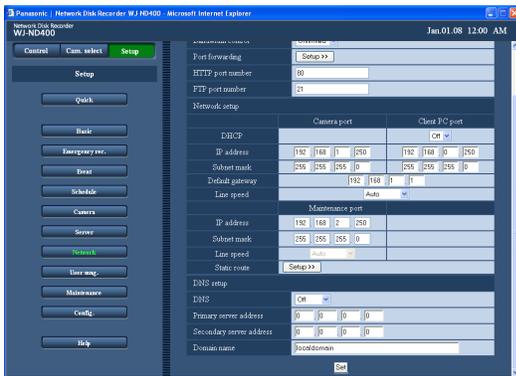
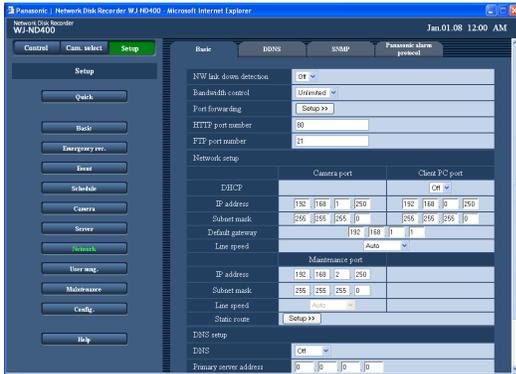
♦ Initial default

Basics

This section explains how to configure recorder network settings. Configure network configuration settings like the IP address, default gateway and DNS (Domain Name System) server.

1 Click the [Network] button on the setup menu.

2 On the sub-menu that appears, click [Basic]. This will display the basic network setting window.



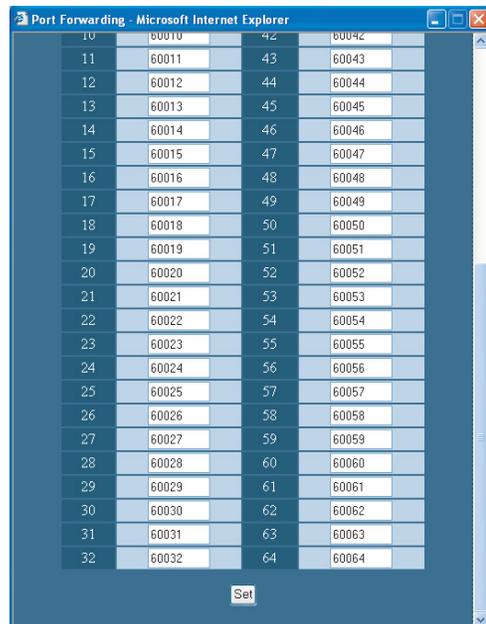
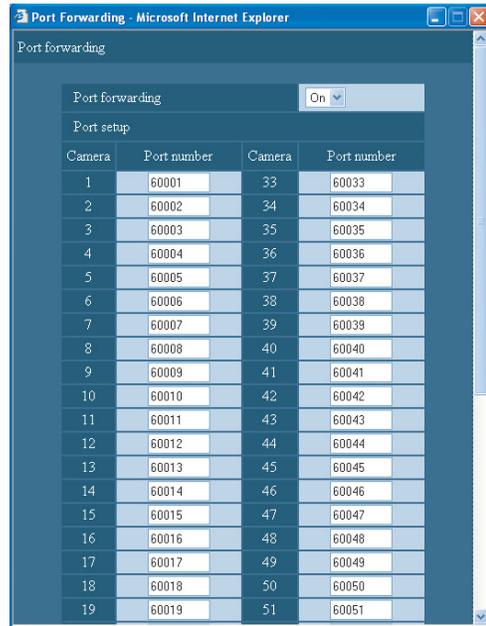
3 Configure the settings for each item.

Refer to "Network settings" table for details about setting items.

- If you want to configure port forwarding, do the operations from step 5.
- To configure the static route, go to step 7 and follow the procedures.

4 Click the [Set] button.

5 Click the port forwarding [Setup >>] button. This will display the "Port forwarding" window.



6 Configure the port number settings and then click the [Set] button.

The Port forwarding window closes.

Network settings

Item	Settings	Description
NW link down detection	Off♦ / On	Specifies whether to detect disconnected network connection of Camera port/Client PC.
Bandwidth control	Unlimited♦ / 32Kbps / 64Kbps / 128Kbps / 256Kbps / 512Kbps / 1024Kbps / 2Mbps / 5Mbps / 10Mbps	Specifies the maximum rate for data transmitted to the network. <ul style="list-style-type: none"> The transmission amount is not limited in the case of an MPEG-4 live image.
Port forwarding		Specifies whether port forwarding is enabled. To configure this setting, click the [Setup >>] button.
HTTP port number	Port number input (80♦)	Sets the HTTP port used when sending images in the range of 1 to 65535. Normally this setting is 80. <ul style="list-style-type: none"> Depending on network settings, changing the HTTP port number may make communication impossible. If this happens, contact your network administrator. Do not specify any of the following numbers for an FTP port number, site alarm port number, or port forwarding port number. 20, 21, 23, 25, 42, 53, 67, 68, 69, 79, 105, 110, 123, 161, 162, 546, 547, 995, 10001, 10002, 10003, 10004, 10005, 10006, 10007
FTP port number	Port number input (21♦)	Specifies the recorder FTP port number in the range of 1 to 65535. Normally this setting is 21. <ul style="list-style-type: none"> Do not specify any of the following numbers for an HTTP port number, site alarm port number, or port forwarding port number. 20, 23, 25, 42, 53, 67, 68, 69, 79, 80, 105, 110, 123, 161, 162, 546, 547, 995, 10001, 10002, 10003, 10004, 10005, 10006, 10007
Network setup - Camera port/Client PC port		
DHCP	Off♦ / On	Specifies whether a DHCP server is used. <ul style="list-style-type: none"> Select [On] to obtain the IP address, subnet mask, and default gateway from a DHCP server. Select [Off] to enter them manually.
IP address	Address input ¹	When [DHCP] is [Off], specify the IP address here.
Subnet mask	Address input ¹	When [DHCP] is [Off], specify the subnet mask here.
Default gateway	Address input ¹	When [DHCP] is [Off], specify the default gateway here.
Line speed	Auto♦ / 1000M-Full / 100M-Full / 100M-Half / 10M-Full / 10M-Half	Specifies the data line speed.
Network setup - Maintenance port		
IP address	Address input ¹	Specifies the IP address.
Subnet mask	Address input ¹	Specifies the subnet mask.
Static route		Determine whether or not to validate the static route setting. To configure this setting, click the [Setup >>] button.
DNS setup		
DNS	Off♦ / Auto / Manual	Specifies whether a DNS is used. <ul style="list-style-type: none"> Selecting [Auto] enables auto detection of the DNS server. This setting is available only when [On] is selected for the [DHCP] setting of the Client PC port (page 61). When [Manual] is selected, a primary address and secondary address can be specified for the DNS server IP address.
Primary server address	Address input (0.0.0.0♦)	Enter the IP address of the primary DNS server.
Secondary server address	Address input (0.0.0.0♦)	Enter the IP address of the secondary DNS server.

Item	Settings	Description
Domain name	Name input (local domain ♦)	Enter the domain name of the recorder. <ul style="list-style-type: none"> Enter up to 255 single-byte alpha-numeric characters, including hyphen (-) and period (.). Use an alphabetic character as the first character of the domain name.

♦ Initial default

*1 Refer to "Recorder network settings (page 11)" for information on initial default settings.

Important:

- A different subnet should be set for each port.
- If DHCP is set to [On] and "SD Memory recording" is set, write requests to the camera's SD memory data may fail at startup. This occurs because the response from the DHCP server is slow. Once the address has been obtained from the DHCP server, the error is resolved.

Port forwarding

Item	Settings	Description
Port forwarding	Off / On ♦	Specifies whether port forwarding is enabled.
Port number	Port number input (Camera 1:60001 ♦ to camera 64:60064 ♦)	When port forwarding is [On], specifies camera port numbers in the range of 1 to 65535. <ul style="list-style-type: none"> Do not specify any of the following numbers for an HTTP port number, FTP port number, site alarm port number, or port forwarding port number. 20, 21, 23, 25, 42, 53, 67, 68, 69, 79, 80, 105, 110, 123, 161, 162, 546, 547, 995, 10001, 10002, 10003, 10004, 10005, 10006, 10007

♦ Initial default

Static route

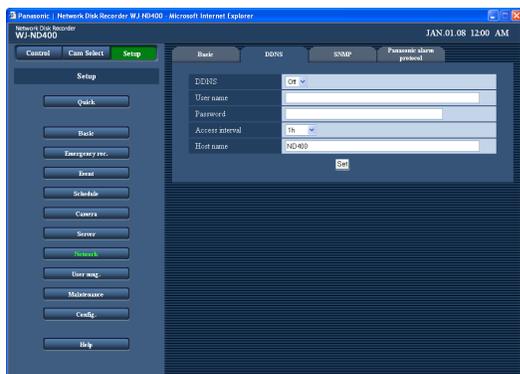
Item	Parameter	Description
Static route setting	Off ♦ / On	Determine whether or not to validate the static route setting. Configure this setting after considering the network connection environment of this product.
Address	Address entry field (Blank ♦)	Enter the destination address. <ul style="list-style-type: none"> The following values are unavailable. Broadcast address, loop-back address, class D address, class E address, "000.000.000.000", "111.111.111.111", and any of the address used for the camera port/client PC port/maintenance port.
Subnet mask	Subnet mask entry field (Blank ♦)	Enter the subnet mask of the destination. <ul style="list-style-type: none"> The following values are unavailable. Broadcast address, loop-back address, class D address, class E address, "000.000.000.000", "111.111.111.111", and any of the address used for the camera port/client PC port/maintenance port.
Gateway	Gateway entry field (Blank ♦)	Enter the gateway of the destination. <ul style="list-style-type: none"> The following values are unavailable. Broadcast address, loop-back address, class D address, class E address, "000.000.000.000", "111.111.111.111", and any of the address used for the camera port/client PC port/maintenance port and camera port/client PC port maintenance port and another network.

♦ Default

DDNS

Use the following procedure to configure settings for using a DDNS (Dynamic Domain Name System).

- 1 Click the [Network] button on the setup menu.
- 2 On the sub-menu that appears, click [DDNS].
This will display the [DDNS] setup window.
- 3 Configure the settings for each item.
Refer to “DDNS settings” table for details about setting items.
- 4 Click the [Set] button.



DDNS settings

Item	Settings	Description
DDNS	Off♦ / On	Specifies whether a DDNS is used.
User name	Name input (Blank♦)	Enter the user name to be registered on the DDNS. • Enter up to 32 single-byte alphanumeric characters and symbols.*1
Password	Password input (Blank♦)	Enter the password for the above user name. • Enter up to 32 single-byte alphanumeric characters and symbols.*1
Access interval	10min / 30min / 1h♦ / 6h / 24h	Specifies the DNS update interval.
Host name	Name input (ND400♦)	Enter the host name to be registered on the DDNS. • Enter up to 255 single-byte alpha-numeric characters, including hyphen (-) and period (.).

♦ Initial default

*1 You can enter the following single-byte alpha-numeric characters and symbols.

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z a b c d e f g h i j k l m n o p q r s t u v w x y z
0 1 2 3 4 5 6 7 8 9 ! # \$ % ` () * + , - . / : ; < = > ? @ [\ ^ _ { | } ~

SNMP

Use the following procedure to configure settings for using SNMP (Simple Network Management Protocol). Configure these settings when connecting to an SNMP manager and check the status of the recorder.

1 Click the [Network] button on the setup menu.

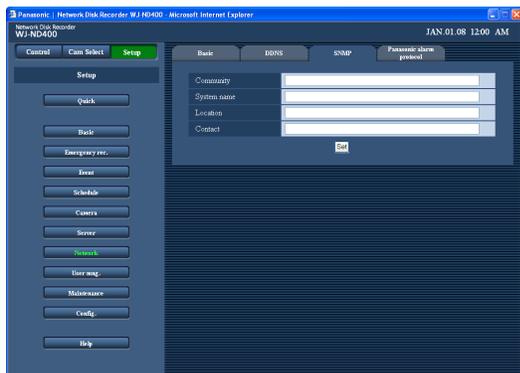
2 On the sub-menu that appears, click [SNMP].

This will display the "SNMP Setup" window.

3 Configure the settings for each item.

Refer to "SNMP settings" table for details about the settings.

4 Click the [Set] button.



SNMP settings

Item	Settings	Description
Community	Name input (Blank ◆)	Enter the community name to be monitored. • Enter up to 32 single-byte alphanumeric characters and symbols.*1
System name	Name input (Blank ◆)	Enter a name to be used by the SNMP system to manage the recorder. • You can input up to 255 single-byte alphanumeric characters.
Location	Name input (Blank ◆)	Enter the location of the recorder. • You can input up to 255 single-byte alphanumeric characters.
Contact	Address input (Blank ◆)	Enter contact information (mail address, etc.) for the recorder administrator. • You can input up to 255 single-byte alphanumeric characters.

◆ Initial default

*1 You can enter the following single-byte alpha-numeric characters and symbols.

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z a b c d e f g h i j k l m n o p q r s t u v w x y z
0 1 2 3 4 5 6 7 8 9 ! # \$ % ^ ` () * + , - . / : ; < = > ? @ [\] ^ _ { | } ~

Panasonic alarm protocol

Use the following procedure to configure settings for sending a message to a preset address whenever an event or error occurs.

Up to four destinations can be specified.

Special separately available software* must be installed on the PC receiving the notification in order to display the received event or error information.

* Refer to the "readme.txt" file on the CD-ROM for details about the software.

1 Click the [Network] button on the setup menu.

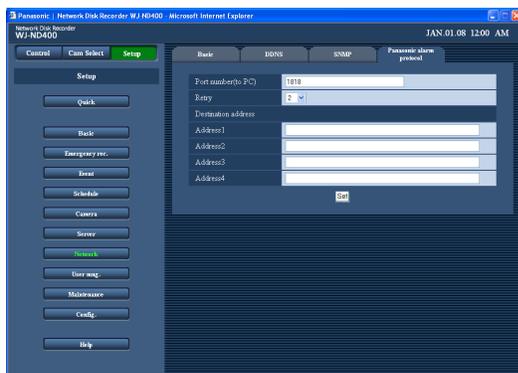
2 On the sub-menu that appears, click [Panasonic alarm protocol].

This will display the "Panasonic Alarm Protocol Settings" window.

3 Configure the settings for each item.

Refer to "Panasonic alarm protocol settings" table for details about the settings.

4 Click the [Set] button.



Panasonic alarm protocol settings

Item	Settings	Description
Port number (to PC)	Port number input (1818♦)	Enter the port number to be used for Panasonic alarm protocol.
Retry	1 to 30 (2♦)	Specifies the number of retries when sending to the PC is unsuccessful.
Destination address		
Address1 to 4	Address input (Blank♦)	Specifies the address of the Panasonic alarm protocol destination PC. Enter an IP address or host name for addresses 1 through 4. <ul style="list-style-type: none"> Enter up to 255 single-byte alphanumeric characters, including hyphen (-) and period (.). When entering a host name, you must use the DNS.

♦ Initial default

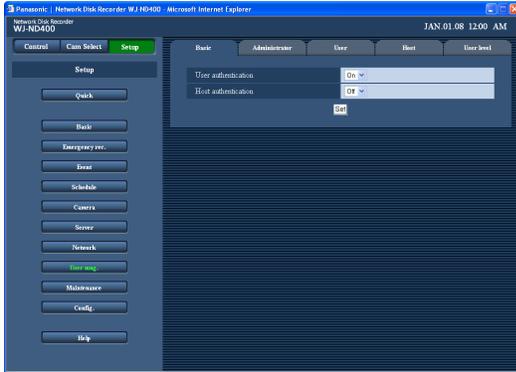
User management

Configure the user and host authentication required to access the recorder from a PC.
It is possible to restrict access by users and hosts (PCs).

Basics

Use the following procedure to specify whether user and host authentication should be performed.

- 1** Click the [User mng.] button on the setup menu.
- 2** On the sub-menu that appears, click [Basic].
This displays the basic user management settings window.
- 3** Configure the settings for each item.
Refer to "Basic user management settings" table for details about the settings.
- 4** Click the [Set] button.



Basic user management settings

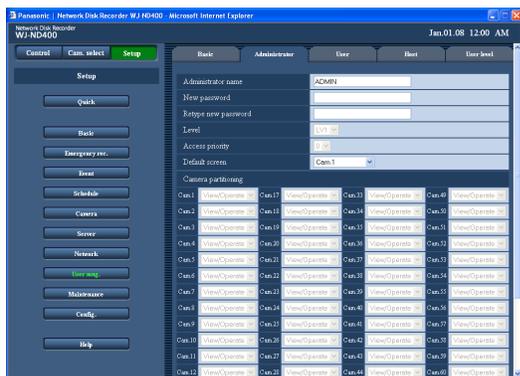
Item	Settings	Description
User authentication	Off / On ♦	Specifies whether user authentication should be performed.
Host authentication	Off ♦ / On	Specifies whether host authentication should be performed. <ul style="list-style-type: none">[On] cannot be selected for host authentication unless the host is registered. First perform settings for the "Hosts (page 72)".

♦ Initial default

Administrator

Use the following procedure to configure settings to assign recorder administrator privileges to a user (administrator).
The administrator name and password can be changed, and the operation level and other operation privileges can be configured.

- 1** Click the [User mng.] button on the setup menu.
- 2** On the sub-menu that appears, click [Administrator].
This will display the "Administrator Settings" window.
- 3** Configure the settings for each item.
Refer to "Administrator settings" table for details about the settings.
- 4** Click the [Set] button.



Important:

- Administrator settings can be configured only by a user who is logged in as an administrator.
- If you do not change the administrator password, a prompt to change the password will appear on the display after log in.

Administrator settings

Item	Settings	Description
Administrator name	Name input (ADMIN◆)	Change the administrator name here. • Enter between 5 and 14 single-byte alphanumeric characters.
New password Retype new password	Enter password (Blank◆)	Enters the password. • Enter between 5 and 8 single-byte alphanumeric characters. • Use a password that is not easily guessable by another person. Also, take care that you do not forget the password. • To ensure security, change passwords periodically.
Level	LV1◆	Shows the user level. The level of the administrator is [LV1], which cannot be changed. • For operations that can be performed at each level, refer to "User level (page 74)".
Access priority	0◆	Shows the priority sequence for operations when multiple users are logged in on the recorder at the same time. The access priority of the administrator is [0] (highest), which cannot be changed.
Default screen	[Cam.1]◆ to [Cam.64] / [Cam.1-4] / [Cam.5-8] / to / [Cam.61-64] / [Seq]	Specifies the live image displayed immediately after log in. • [Selecting [Cam.1] to [Cam.64] displays the images of the selected cameras on a 1-image screen. • Selecting [Cam.1-4] to [Cam.61-64] displays the live images of the selected cameras on a 4-image screen. • Selecting [Seq] displays images in a specified sequence.
Camera partitioning	[View/Operate]◆	Shows the scope of control for each camera channel. The scope of the administrator is [View/Operate], which cannot be changed.

◆ Initial default

Users

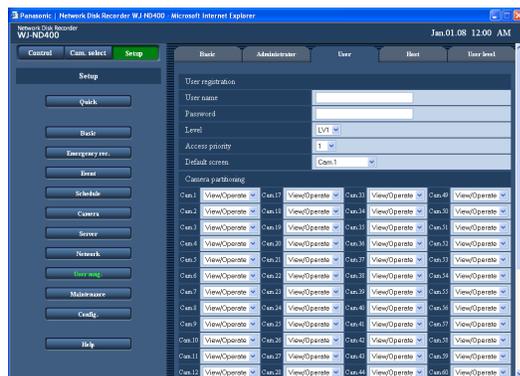
Use the following procedure to configure information (user name, password, operation level, etc.) about recorder users.

Up to 32 users can be registered.

1 Click the [User mng.] button on the setup menu.

2 On the sub-menu that appears, click [User].

This will display the "User Settings" window.



3 Configure the settings for each item.

Refer to "User setups" table for details about the settings.

4 Click the [Registration] button.

5 If you want to configure settings for more users, repeat steps 3 and 4.

6 To complete user registration, click the [Set] button.

User setups

Item	Settings	Description
User name	Name input (Blank◆)	Enters the user name. • Enter between 5 and 14 single-byte alphanumeric characters.
Password	Enter password (Blank◆)	Enters the password. • Enter between 5 and 8 single-byte alphanumeric characters. • Use a password that is not easily guessable by another person. Also, take care that you do not forget the password. • To ensure security, change passwords periodically.
Level	LV1◆ / LV2 / LV3 / LV4	Specifies the user level. • For operations that can be performed at each level, refer to "User level (page 74)".
Access priority	1◆ to 16	Specifies the priority sequence for operations when multiple users are logged in on the recorder at the same time.
Default screen	[Cam.1]◆ to [Cam.64] / [Cam.1-4] / [Cam.5-8] / to / [Cam.61-64] / [Seq]	Specifies the live image display immediately after log in. • Selecting [Cam.1] to [Cam.64] displays the images of the selected cameras on a 1-image screen. • Selecting [Cam.1-4] to [Cam.61-64] displays the live images of the selected cameras on a 4-image screen. • Selecting [Seq] displays images in a specified sequence.
Camera partitioning	[View/Operate]◆ / [View] / [--]	Specifies the scope of control for each camera channel. • When [View/Operate] is selected, live/recorded image display or camera operation can be performed. • When [View] is selected, live/recorded image display can be performed, but camera operation cannot. • When [--] is selected, neither live/recorded image display nor camera operation can be performed.

◆ Initial default

Important:

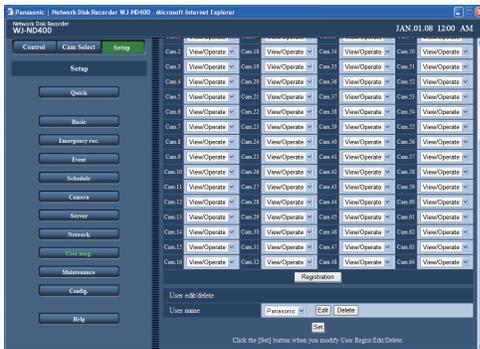
- You must click press the [Set] button to activate settings on the recorder when registering, editing, or deleting users.

Note:

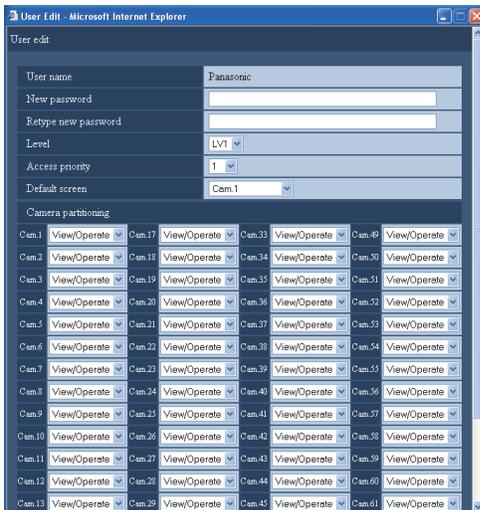
- Clicking the [Registration] button does not log out other users.

Editing user information

- 1 Click the [User mng.] button on the setup menu.
- 2 On the sub-menu that appears, click [User].
This will display the "User settings" window.
- 3 In "User edit/delete" select the name of the user you want to edit.



- 4 Click the [Edit] button.
This will display the "User edit" window.



- 5 Configure the settings for each item.
Refer to "User setups" table for details about the settings.
- 6 Click the [Registration] button.
- 7 Click the [Set] button.
This will close the "User edit" window.

Deleting user information

- 1 Click the [User mng.] button on the setup menu.
- 2 On the sub-menu that appears, click [User].
This will display the "User settings" window.
- 3 In "User edit/delete" select the name of the user you want to delete.
- 4 Click the [Delete] button.
- 5 Click the [Set] button.

Important:

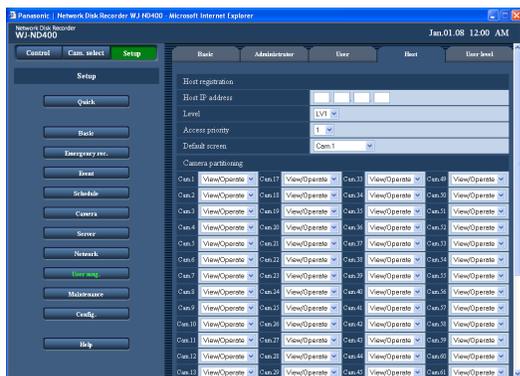
- Clicking the [Set] button applies the registered settings, and forcibly logs out all users, including the user who clicked the [Set] button.

Hosts

The following procedure is to register information for PCs (hosts) that can access the camera over a network.

Up to 32 hosts can be registered.

- 1** Click the [User mng.] button on the setup menu.
- 2** On the sub-menu that appears, click [Host].
This will display the "Host setting" window.
- 3** Configure the settings for each item.
Refer to "Host settings" table for details about the settings.
- 4** Click the [Set] button.



Host settings

Item	Settings	Description
Host IP address	Address input (Blank◆)	Enter the IP address. <ul style="list-style-type: none"> Enter single-byte numerals in the range of 0 to 255. You can use the "*" special character to represent any number. "0.0.0.0" or "*.*.*.*" cannot be registered.
Level	LV1◆ / LV2 / LV3 / LV4	Specifies the user level. <ul style="list-style-type: none"> For operations that can be performed at each level, refer to "User level (page 74)".
Access priority	1◆ to 16	Specifies the priority sequence for operations when multiple users are logged in on the recorder at the same time.
Default screen	[Cam.1]◆ to [Cam.64] / [Cam.1-4] / [Cam.5-8] / to / [Cam.61-64] / [Seq]	Specifies the live image display immediately after log in. <ul style="list-style-type: none"> Selecting [Cam.1] to [Cam.64] displays the images of the selected cameras on a 1-image screen. Selecting [Cam.1-4] to [Cam.61-64] displays the live images of the selected cameras on a 4-image screen. Selecting [Seq] displays images in a specified sequence.
Camera partitioning	[View/Operate]◆ / [View] / [--]	Specifies the scope of control for each camera channel. <ul style="list-style-type: none"> When [View/Operate] is selected, live/recorded image display or camera operation can be performed. When [View] is selected, live/recorded image display can be performed, but camera operation cannot. When [--] is selected, neither live/recorded image display nor camera operation can be performed.

◆ Initial default

Important:

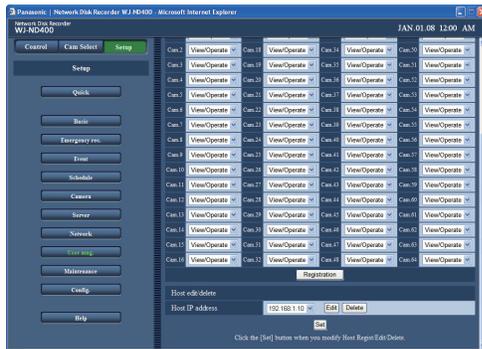
- You must click press the [Set] button to activate settings on the recorder when registering, editing, or deleting hosts.

Note:

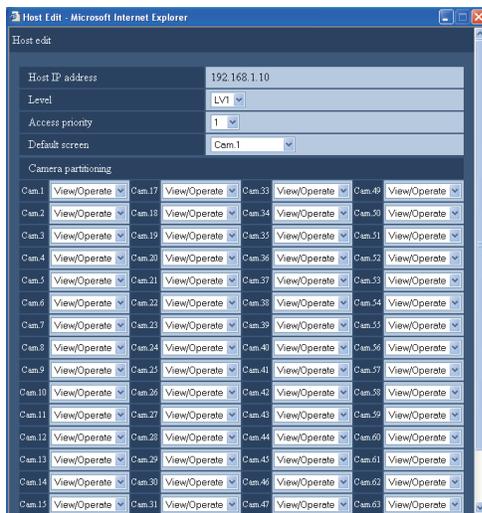
- Clicking the [Registration] button does not log out other users.

Editing host information

- 1 Click the [User mng.] button on the setup menu.
- 2 On the sub-menu that appears, click [Host].
This will display the "Host setting" window.
- 3 In "Host edit/delete" select the name of the host you want to edit.



- 4 Click the [Edit] button.
This will display the [Host edit] window.



- 5 Configure the settings for each item.
Refer to "Host settings" table for details about the settings.
- 6 Click the [Registration] button.
- 7 Click the [Set] button.

Deleting host information

- 1 Click the [User mng.] button on the setup menu.
- 2 On the sub-menu that appears, click [Host].
This will display the "Host setting" window.
- 3 In "Host edit/delete" select the name of the host you want to delete.
- 4 Click the [Delete] button.
- 5 Click the [Set] button.

Important:

- Clicking the [Set] button applies the registered settings, and forcibly logs out all users, including the user who clicked the [Set] button.

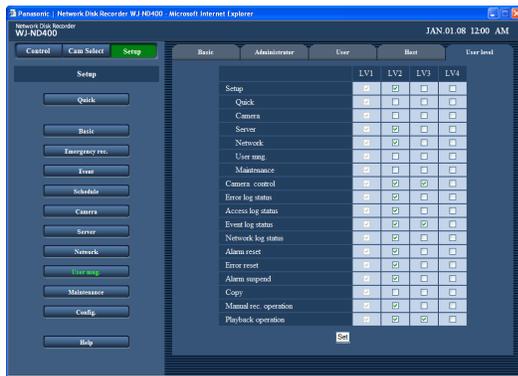
User level

Use the following procedure to define which operations can be performed at each user level.

You can specify functions that can be accessed at each user level (LV1/LV2/LV3/LV4).

- 1 Click the [User mng.] button on the setup menu.
- 2 On the sub-menu that appears, click [User level].
This will display the "User level Settings" window.

- 3 Configure the settings for each item.
Refer to "User level settings" table for details about the settings.
- 4 Click the [Set] button.



Note:

- The functions that can be used at each user level are as follows at default.

- LV1 : Level of the administrator who can perform all operations for the camera and recorder.
- LV2 : High level operator with limits who can view recorder settings and logs and reset alarms.
- LV3 : A general operator who can perform playback and monitoring.
- LV4 : Operator who can only monitor (playback unavailable).

User level settings

Item	Settings	Description
Setup	Checked ^{*1*2} / Unchecked ^{*3*4}	Modification of some settings ([Basic], [Emergency rec.], [Event], [Schedule], [Config.]) allowed in setup menu display.
Quick	Checked ^{*1} / Unchecked ^{*2*3*4}	Modification of setup menu [Quick] settings allowed.
Camera	Checked ^{*1} / Unchecked ^{*2*3*4}	Modification of setup menu [Camera] settings allowed.
Server	Checked ^{*1*2} / Unchecked ^{*3*4}	Modification of setup menu [Server] settings allowed.
Network	Checked ^{*1*2} / Unchecked ^{*3*4}	Modification of setup menu [Network] settings allowed.
User mng.	Checked ^{*1} / Unchecked ^{*2*3*4}	Modification of setup menu [User mng.] settings allowed.
Maintenance	Checked ^{*1} / Unchecked ^{*2*3*4}	Modification of setup menu [Maintenance] settings allowed.
Camera control	Checked ^{*1*2*3} / Unchecked ^{*4}	Pan, tilt, and other camera control allowed.
Error log status	Checked ^{*1*2} / Unchecked ^{*3*4}	Error log access allowed. (refer to the Operating Instructions (PDF file))
Access log status	Checked ^{*1*2} / Unchecked ^{*3*4}	Access log access allowed. (refer to the Operating Instructions (PDF file))
Event log status	Checked ^{*1*2*3} / Unchecked ^{*4}	Event log access allowed. (refer to the Operating Instructions (PDF file))
Network log status	Checked ^{*1*2} / Unchecked ^{*3*4}	Network log access allowed. (refer to the Operating Instructions (PDF file))
Alarm reset	Checked ^{*1*2} / Unchecked ^{*3*4}	Alarm action reset allowed. (refer to the Operating Instructions (PDF file))
Error reset	Checked ^{*1*2} / Unchecked ^{*3*4}	Error action reset allowed. (refer to the Operating Instructions (PDF file))
Alarm suspend	Checked ^{*1*2} / Unchecked ^{*3*4}	Alarm action suspend allowed. (refer to the Operating Instructions (PDF file))
Copy	Checked ^{*1} / Unchecked ^{*2*3*4}	Copy recorded images to the Copy area. (refer to the Operating Instructions (PDF file))
Manual rec. operation	Checked ^{*1*2} / Unchecked ^{*3*4}	Manual recording start/stop allowed.
Playback operation	Checked ^{*1*2*3} / Unchecked ^{*4}	Recorded image playback allowed.

*1 LV1 initial default setting

*2 LV2 initial default setting

*3 LV3 initial default setting

*4 LV4 initial default setting

Note:

- Selecting the [Quick], [Camera], [Server], [Network], [User mng.], or [Maintenance] check box will cause the [Setup] check box to be selected automatically.
- Selecting the [Setup] check box does not select the [Quick], [Camera], [Server], [Network], [User mng.], and [Maintenance] check boxes.

Maintenance

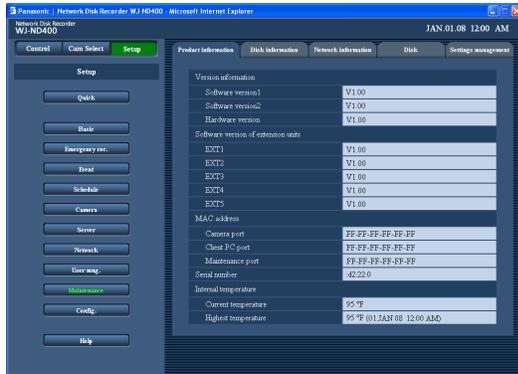
Check the recorder and network status, and configure HDDs.

Recorder information

Use the following procedure to view software and hardware versions, MAC address, serial number, internal temperature, and Extension unit software version information.

- 1** Click the [Maintenance] button on the setup menu.
- 2** On the sub-menu that appears, click [Product information].
This will display the "Product information" window.

- 3** Check the items you want.
Refer to "Recorder information" table for details about the settings.



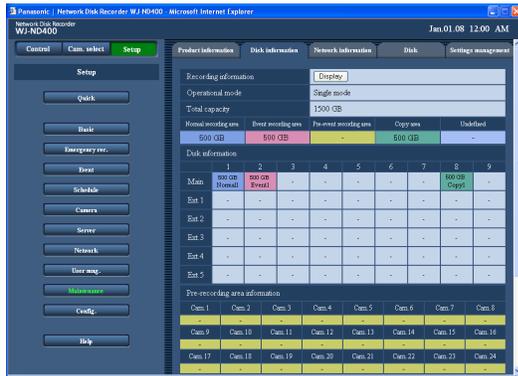
Recorder information

Item	Description
Version information	
Software version 1	Shows the Software 1 version.
Software version 2	Shows the Software 2 version.
Hardware version	Shows the hardware version.
Software version of extension units	
Ext. 1 to 5	Shows the software versions of Extension units 1 to 5.
MAC address	
Camera port	Shows the MAC address of the Camera port.
Client PC port	Shows the MAC address of the Client PC port.
Maintenance port	Shows the MAC address of the Maintenance port.
Serial number	Shows the serial number of the recorder.
Internal temperature	
Current temperature	Shows the recorder's internal temperature.
Highest temperature	Shows the highest internal temperature recorded up to now since power was turned on and the time it was recorded.

Disk information

Use the following procedure to view the capacities of the HDDs and Extension units (Ext.1 to 5), the capacity of each recording area, and other disk partition information. You also can view the remaining HDD capacity, the time and date ranges of images recorded on the HDD, and the HDD operating time (hour meter).

- 1 Click the [Maintenance] button on the setup menu.
- 2 On the sub-menu that appears, click [Disk information]. This will display the "Disk information" window.



- 3 Check the items you want. Refer to "Disk information" table for details about the settings.

- 4 Click the recording information [Display] button. The "Recording information" window shows the time and date ranges of the images recorded on each HDD.

Disk	Capacity	Remain capacity	Hour meter	Recorded time range
1	500 GB	499 GB	12 h	-
2	- GB	- GB	- h	-
3	- GB	- GB	- h	-
4	- GB	- GB	- h	-
5	- GB	- GB	- h	-
6	- GB	- GB	- h	-
7	- GB	- GB	- h	-
8	- GB	- GB	- h	-
9	- GB	- GB	- h	-
1	- GB	- GB	- h	-
2	- GB	- GB	- h	-
3	- GB	- GB	- h	-
4	- GB	- GB	- h	-
5	- GB	- GB	- h	-
6	- GB	- GB	- h	-
7	- GB	- GB	- h	-
8	- GB	- GB	- h	-
9	- GB	- GB	- h	-
1	- GB	- GB	- h	-
2	- GB	- GB	- h	-
3	- GB	- GB	- h	-
4	- GB	- GB	- h	-
5	- GB	- GB	- h	-
6	- GB	- GB	- h	-
7	- GB	- GB	- h	-
8	- GB	- GB	- h	-
9	- GB	- GB	- h	-
1	- GB	- GB	- h	-
2	- GB	- GB	- h	-
3	- GB	- GB	- h	-
4	- GB	- GB	- h	-
5	- GB	- GB	- h	-
6	- GB	- GB	- h	-
7	- GB	- GB	- h	-
8	- GB	- GB	- h	-
9	- GB	- GB	- h	-

- 5 Check the items you want. Refer to "Recording information" table for details about the settings.

Disk information

Item	Description
Recording Information	Clicking the [Display] button displays the capacity, hour meters, and recorded image time and date ranges for each HDD. <ul style="list-style-type: none"> Shows HDD1 information when RAID5/RAID6 is operating.
Operational mode	Shows the recorder operation mode. HDD Operational mode: Single mode/RAID5 mode/RAID6 mode
Total capacity	Shows the sum of the capacities of all the HDDs.
Normal recording area	Shows the storage area capacity of images recorded by manual recording and schedule recording.
Event recording area	Shows the storage area capacity of images recorded by emergency recording and post-event recording.
Pre-event recording area	Shows the storage area capacity of images recorded by pre-event recording.
Copy area	Shows the capacity of the storage area for copying.
Undefined	Shows the HDD capacity that is not allocated to image areas.
Disk information	Shows the HDD capacities and formatted areas of the main and extension units. <ul style="list-style-type: none"> When RAID5/RAID6 is operating the HDD1 capacity is displayed. Formatted areas are shown as follows. <p>Normal* : HDD formatted for normal recording area</p> <p>Event* : HDD formatted for event recording area</p> <p>Pre-event : HDD formatted for pre-event recording area</p> <p>Copy* : HDD formatted for copy area</p> <p>Remove : Faulty HDD, removed from operations</p> <p>Error : Error has occurred on this HDD during formatting</p> <p>N-Used : HDD formatted on different ND400 for normal recording area (recording not possible, playback only possible)</p> <p>E-Used : HDD formatted on different ND400 for event recording area (recording not possible, playback only possible)</p> <p>P-Used : HDD formatted on different ND400 for pre-event recording area (recording not possible, playback only possible)</p> <p>C-Used : HDD formatted on different ND400 for copy area (recording not possible, playback only possible)</p> <p>* Indicates order of recording.</p> <p>The (R) by the HDD capacity indicates the HDD that is recording.</p>
Pre-recording area information	Shows the pre-recording area capacity allocated to each camera.

Recording information

Item	Description
Capacity	Shows the capacity of the HDD.
Remain capacity	Shows the remaining capacity of the HDD. <ul style="list-style-type: none"> The displayed available space on the HDD does not include the space necessary for data management. Thus, the available HDD space appears small. The capacity remaining for the pre-event recording area is not shown.
Hour meter	Shows the operating time of the HDD.
Recorded time range	Shows the time and date range of recorded images. <ul style="list-style-type: none"> The date range of images recorded in the pre-event recording area is not shown.

Network information

Use the following procedure to view each recorder's IP address, and the line speed, number of users logged in, and other network information.

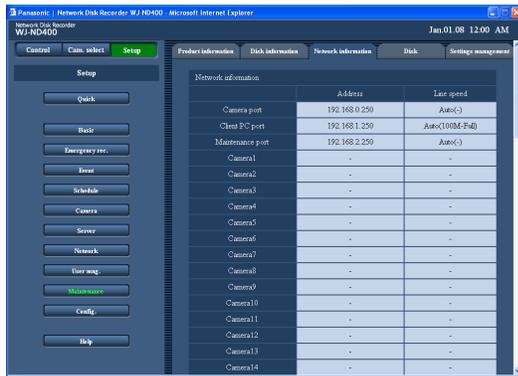
1 Click the [Maintenance] button on the setup menu.

2 On the sub-menu that appears, click [Network information].

This will display the "Network information" window.

3 Check the items you want.

Refer to "Network information" table for details about the settings.



Network information

Item	Description
Network Information	
Address	Shows the IP addresses of each recorder port and connected device <ul style="list-style-type: none"> In the case of a camera connected via a proxy server, the IP address of the proxy server is displayed as the camera address.
Line speed	Shows the line speed.
Login user	
User	Shows the number of users logged into the recorder.
Number of FTP users	Shows the number of users logged into the recorder by FTP.

Disk

Use the following procedure to configure settings for operation when the HDD in the recorder becomes full. It also can be used to configure the warning operation when the HDD becomes full.

1 Click the [Maintenance] button on the setup menu.

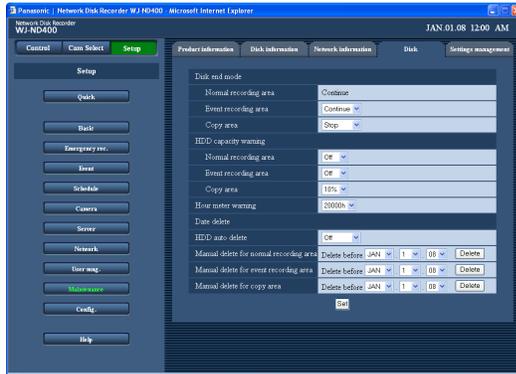
2 On the sub-menu that appears, click [Disk].

This will display the "Disk setting" window.

3 Configure the settings for each item.

Refer to "Disk settings" table for details about the settings.

4 Click the [Set] button.



Disk settings

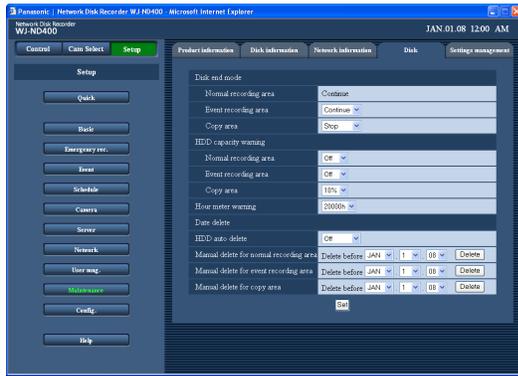
Item	Settings	Description
Disk end mode		
Normal recording area	Continue ♦	When the normal recording area becomes full, the oldest data is sequentially overwritten with new data.
Event recording area	Continue ♦ / Stop	Specifies operations when the event recording area becomes full. <ul style="list-style-type: none"> When the event recording area becomes full while [Continue] is selected, the oldest data is sequentially overwritten with new data. When the event recording area becomes full while [Stop] is selected, recording stops.
Copy area	Continue / Stop ♦	Specifies operations when the copy area becomes full. <ul style="list-style-type: none"> When the copy area becomes full while [Continue] is selected, the oldest data is sequentially overwritten with new data. When the copy area becomes full while [Stop] is selected, copying stops.
HDD capacity warning		
Normal recording area	Off ♦ / 1% to 10%	Configures settings for warnings issued when the remaining normal recording area reaches a specified value.
Event recording area	Off ♦ / 1% to 10%	Configures settings for warnings issued when the remaining event recording area becomes a specified value.
Copy area	Off / 1% to 10% ♦	Configures settings for warnings issued when the remaining copy area becomes a specified value.
Hour meter warning	10000h / 20000h ♦ / 30000h	Configures settings for warnings issued when the remaining HDD operating time (hour meter) becomes a specified value.

♦ Initial default

Deleting image data from a disk

Use the following procedure to delete image data from the HDD of the recorder.
There are two methods available for deletion: auto delete and manual delete.

- 1** Click the [Maintenance] button on the setup menu.
- 2** On the sub-menu that appears, click [Disk].
This will display the "Disk setting" window.
- 3** Configure the settings for each item.
Refer to "Data delete" table for details about the settings.
- 4** Click the [Set] button.



Data delete

Item	Settings	Description
HDD auto delete	Off♦ / 1day / 2days / 3days / 4days / 5days / 6days / 7days / 8days / 9days / 10days / 14days / 30days / 1month / 45days / 60days / 90days / 120days / 150days / 180days	Specifies automatic image data deletion after the specified period passes. <ul style="list-style-type: none"> The execution time of the auto delete operation is 00:05:00.
Manual delete for normal recording area	08 to 34 (Year) / Jan to Dec (Month) / 1 to 31 (Day)	Deletes image data in the normal recording area until the day before the specified date. After specifying the date, click the [Delete] button.
Manual delete for event recording area	08 to 34 (Year) / Jan to Dec (Month) / 1 to 31 (Day)	Deletes image data in the event recording area until the day before the specified date. After specifying the date, click the [Delete] button.
Manual delete for copy area	08 to 34 (Year) / Jan to Dec (Month) / 1 to 31 (Day)	Deletes image data in the copy area until the day before the specified date. After specifying the date, click the [Delete] button.

♦ Initial default

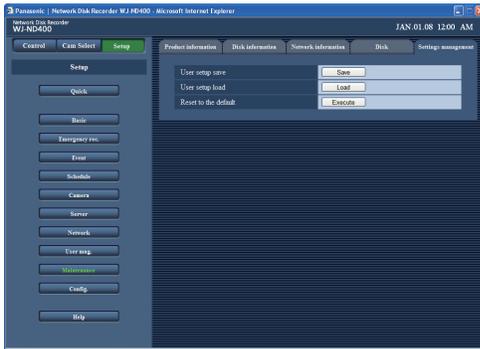
Note:

- HDD auto delete does not delete image or video data in the Copy or Pre-event recording areas.

Settings management

Use the following procedure to save setup menu settings to the recorder and to load previously saved settings. This procedure also can be used to return setup menu settings to their initial defaults.

- 1** Click the [Maintenance] button on the setup menu.
- 2** On the sub-menu that appears, click [Settings management].
This will display the "Settings management" window.
- 3** Click the button of the respective item to suit your particular requirements.
 - Each selected item is executed.
 Refer to "Settings management" table for details about each item.



Settings management

Item	Description
User setup save	Saves user setup data to the recorder.
User setup load	Loads user setup data saved on the recorder.
Reset to the default	Initializes settings.

Important:

- Even if you perform [User setup load]/[Reset to the default], the following settings cannot be loaded or initialized.
 - [NW link down detection]
 - [Bandwidth control]
 - [HTTP port number]
 - [FTP port number]
 - [Network settings]
 - [DNS Settings]
- Performing [User setup load] sets host authentication to [Off].

Configuring disks

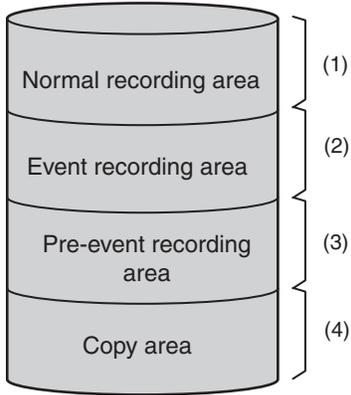
Display disk configuration to do operations to the HDD.

With disk configuration, it is possible to check the total HDD capacity and the capacity of each recording area, and to format HDDs.

HDD space management

The HDDs in the recorder are virtually divided in the 4 image areas shown below.

You can set only one area for each HDD.



You can check the remaining capacity for each area on the Setup menu.

(1) Normal recording area

Area for recording except events.
Manual recording/schedule recording/SD memory data

(2) Event recording area

Area for recording when events occur.
Post-event recording/emergency recording

(3) Pre-event recording area

Area for pre-event recording.

(4) Copy area

Area where copied data is saved.

Note:

- The HDD provided in the recorder at the factory is initialized as normal recording area. Unformatted HDDs inserted into the recorder are automatically initialized as normal recording area. However, if you remove an HDD operating in an area other than normal video and audio recording (see the basic manual), any unformatted HDD inserted into that spot is formatted the same as the previous HDD.
 - Recording/playback is not possible if only the Pre-event recording area and the Copy area are created. Create either one normal recording area or event recording area.
 - If a normal recording area is not created, manual and schedule recordings are recorded to the event recording area. Also, if an event recording area is not created, event and emergency recordings are recorded to the normal recording area.
-

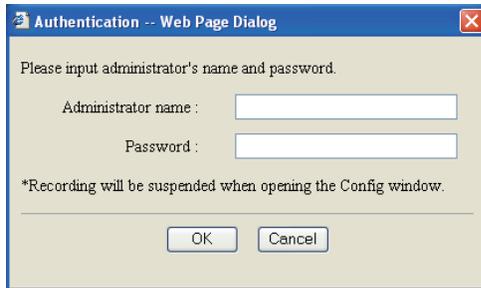
Disk partition information

Important:

- When the "Config" page is displayed, all operations (recording, playback, etc.) except disc configuration stop.
- Displaying the config window forcibly logs out any other users currently logged in to the main unit. Also installing or removing HDD or HDD units from the front panel forcibly logs out any other users logged in to the main unit.
- To exit the disk config window, click the [Main] button. Clicking the [x] button in the upper right corner of the window may cause operation troubles.

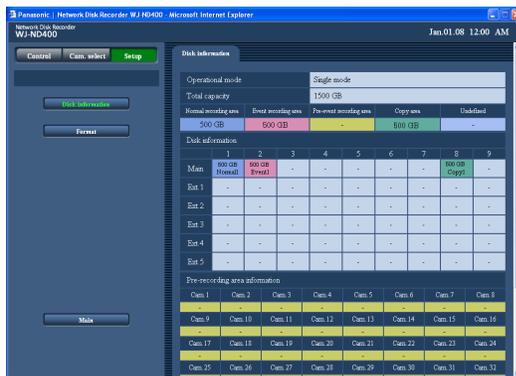
1 Click the [Config.] button on the setup menu.

This will display the administrator authentication window.



2 Enter the "Administrator name" and "Password", and then click the [OK] button.

This will display the configuration settings top window (Disk Information window).



3 Check the items you want.

Refer to "Disk information" table for details about the window items.

Disk information

Item	Description
Operational mode	Shows the recorder operation mode. HDD Operational mode: Single mode/RAID5 mode/RAID6 mode
Total capacity	Shows the sum of the capacities of all the HDDs.
Normal recording area	Shows the storage area capacity of images recorded by manual recording and schedule recording.
Event recording area	Shows the storage area capacity of images recorded by emergency recording and post-event recording.
Pre-event recording area	Shows the storage area capacity of images recorded by pre-event recording.
Copy area	Shows the capacity of the storage area for copying.
Undefined	Shows the HDD capacity that is not allocated to image areas.
Disk information	<p>Shows the HDD capacities and formatted areas of the main and extension units.</p> <ul style="list-style-type: none"> • When RAID5/RAID6 is operating the HDD1 capacity is displayed. • Formatted areas are shown as follows. <p>Normal* : HDD formatted for normal recording area</p> <p>Event* : HDD formatted for event recording area</p> <p>Pre-event : HDD formatted for pre-event recording area</p> <p>Copy* : HDD formatted for copy area</p> <p>Remove : Faulty HDD, removed from operations</p> <p>Error : Error has occurred on this HDD during formatting</p> <p>N-Used : HDD formatted on different ND400 for normal recording area (recording not possible, playback only possible)</p> <p>E-Used : HDD formatted on different ND400 for event recording area (recording not possible, playback only possible)</p> <p>P-Used : HDD formatted on different ND400 for pre-event recording area (recording not possible, playback only possible)</p> <p>C-Used : HDD formatted on different ND400 for copy area (recording not possible, playback only possible)</p> <p>* Indicates order of recording.</p> <p>The (R) by the HDD capacity indicates the HDD that is recording.</p>
Pre-recording area information	Shows the pre-recording area capacity allocated to each camera.

Formatting disks

When necessary, format HDDs when using them for the first time after replacing or adding HDDs, or when connecting an extension unit. HDDs can be formatted as a group or individually (select units when running RAID5 or RAID6).

You must also divide the HDD into the normal recording area, event recording area, copy area and the play recording area.

When an HDD is formatted, all the data on it is destroyed.

Format

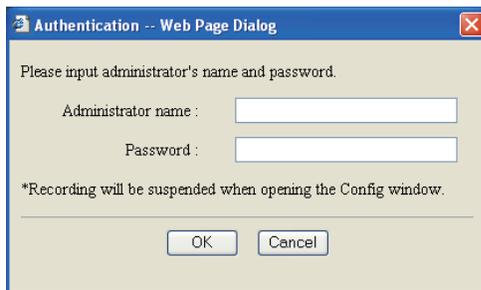
Use the following procedure to allocate an event recording area and copy area to an HDD, and to re-format an HDD.

- Unformatted HDDs in the recorder and internal HDDs when shipped are automatically formatted as Normal recording areas when recognized.
- Formatting one HDD takes about 30 seconds.

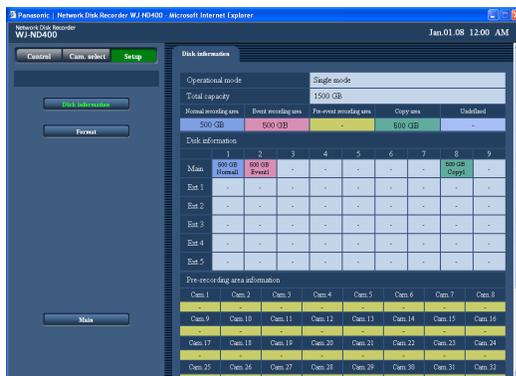
Important:

- When the "Config" page is displayed, all operations (recording, playback, etc.) except disc configuration stop.
- Displaying the config window forcibly logs out any other users currently logged in to the main unit. Also installing or removing HDD or HDD units from the front panel forcibly logs out any other users logged in to the main unit.
- To exit the disk config window, click the [Main] button. Clicking the [x] button in the upper right corner of the window may cause operation troubles.

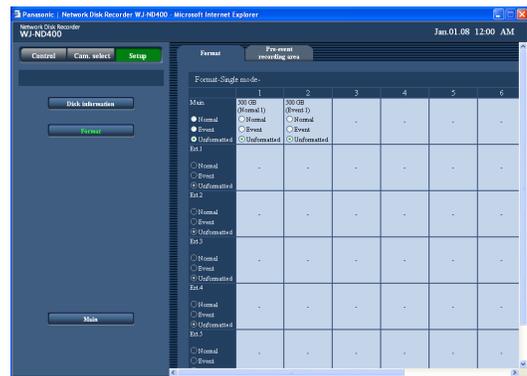
- 1 Click the [Config.] button on the setup menu.
This will display the administrator authentication window.



- 2 Enter the "Administrator name" and "Password", and then click the [OK] button.
This will display the configuration settings top window (Disk Information window).



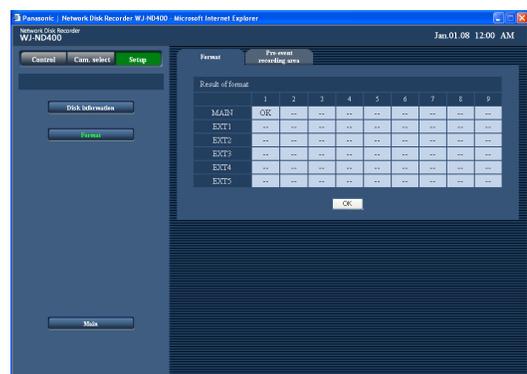
- 3 On the configuration settings top window (Disk Information window), click [Format].
This will display the "Format" window.



- 4 Select the HDD to be formatted and select the check boxes of the recording areas to be allocated.
Selection of multiple HDDs is supported.

- Normal : Formatted as normal recording area
- Event : Formatted as event recording area
- Copy : Formatted as copy area
- Unformatted : Do not format

- 5 Click the [Format] button.
A "Format result" window will appear after formatting is complete.



6 Click the [OK] button.
This will return to the "Format" window.

7 Click the [Main] button.
This will return to the "Cam. select" window.

Note:

- Multiple recording areas cannot be allocated to a single HDD.
 - The copy area can be allocated to an HDD plugged into the main unit's HDD8 or HDD9 positions only during single operation. A copy area cannot be allocated to HDD 1 to 7 or to an extension unit HDD.
Copy areas cannot be set during RAID5/RAID6.
-

Pre-event recording area formatting

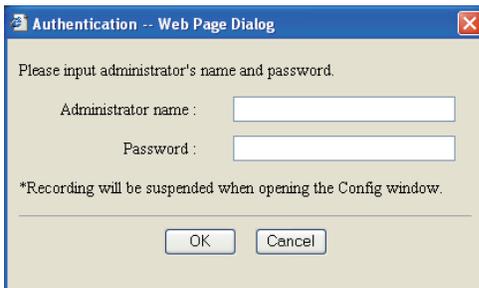
Use the following procedure to format a pre-event recording area. Pre-event recording area space can be allocated for each camera channel.

- Formatting the pre-event recording area may take around 10 minutes depending on the number of cameras.

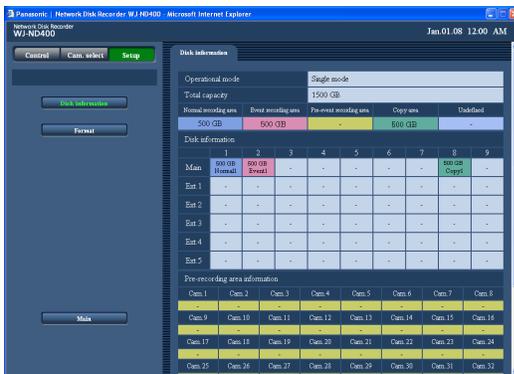
Important:

- When the "Config" page is displayed, all operations (recording, playback, etc.) except disc configuration stop.
- Displaying the config window forcibly logs out any other users currently logged in to the main unit. Also installing or removing HDD or HDD units from the front panel forcibly logs out any other users logged in to the main unit.
- To exit the disk config window, click the [Main] button. Clicking the [x] button in the upper right corner of the window may cause operation troubles.
- Before formatting the pre-event recording area, set the camera channels for pre-event recording area as follows.
 - Set the Model/Compression, address, user name, and password on [NW camera].
 - Set the pre-event recording rate and pre-event recording time on [Program]
 After finishing the settings, connect a camera and make sure an image is displayed.
 You may not be able to record data at the time you want if you connect a camera that is not set and format the pre-event recording while an image is not displayed.
- Pre-event recording formatting cannot be done during RAID5/RAID6 operation with just the recorder. You need to connect an extension unit to set up pre-event recording in a RAID configuration.

- 1 Click the [Config.] button on the setup menu. This will display the administrator authentication window.

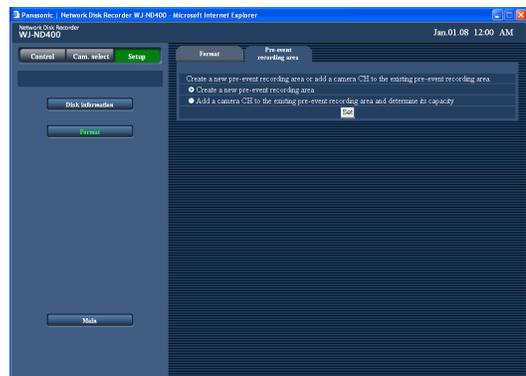


- 2 Enter the "Administrator name" and "Password", and then click the [OK] button. This will display the disk information window.



- 3 On the disk config top window, click [Format]. This will display the "Format" window.

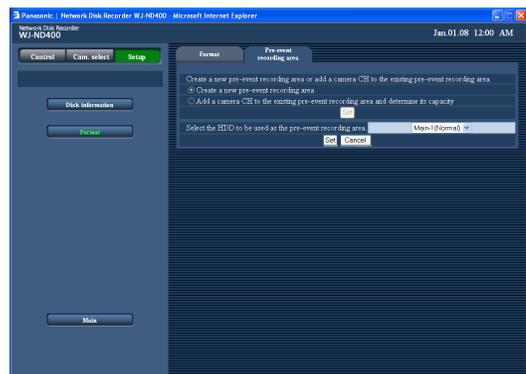
- 4 On the sub-menu that appears, click [Pre-event recording area]. This will display the "Pre-event recording area setting" window.



- 5 Select the [Pre-event recording area setting] window and click the [Set] button.

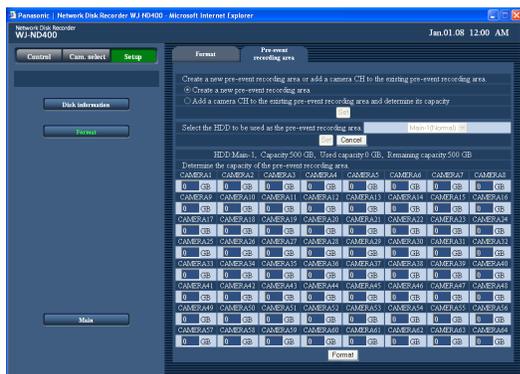
- Create a new pre-event recording area
- Add a camera to pre-event recording areas that are created and assign areas

This will display the "Pre-event recording area HDD setting" window.



6 Select the HDD you want to format as the HDD to set with a pre-event recording area, and then click the [Set] button.

This will display a window for allocating pre-event recording area.



7 Select the camera channel and enter the amount of space to be allocated.

- Pre-event recording areas can be created for up to 64 channels on a single HDD.
- A camera channel that is already specified for a pre-event recording area on another HDD cannot be selected. (If an HDD formatted for pre-event recording area from another ND400 is recognized, channels pre-set on the HDD cannot be selected.)
- Set at least 5 GB of space for the pre-event recording area of each camera channel. Enter 0 to not set the capacity.

8 Click the [Format] button.

About mail notification

Alarm mail notification

The main unit's address appears in the alarm mail as shown below.
Contents of the alarm mail

ND400 (192.168.0.250), alarm was occurred.
Alarm date: xx-xxx-xxxx xx:xx:xx GMT xx:xx (Example: 01-JAN-2008 GMT+0:00)
Cause of alarm: Displays an event type and a camera channel or an alarm number (Example: COMMAND ALARM 5CH)
File name of alarm image: The file name of the image attached to an e-mail.
URL:http://192.168.0.250/

Warning mail notification

The following mail will be sent to notify of a trouble occurrence to a registered address when the trouble occurs.
ND400 (192.168.0.250) STATUS REPORT.
DATE: 1-JAN-2008 12:00:00 GMT+0:00
STATUS: The description of the trouble will be displayed. (Ex. MAIN THERMAL ERROR)

Item	Description
DATE	Time and date when the trouble occurred will be displayed.
STATUS	The description of the trouble will be displayed.
	HDD capacity warning ¹ : <Anything other than FULL> NORMAL-HDD CAPACITY REMAINS **% EVENT-HDD CAPACITY REMAINS **% COPY-HDD CAPACITY REMAINS **% ** is remaining capacity (%). : <FULL> EVENT-HDD FULL COPY-HDD FULL
	Power outage detection : POWER LOSS
	Recover from a power outage : POWER RECOVERED
	NW camera error detection : CAM** COMMUNICATION ERROR ** is camera channel.
	NW camera error recovery : CAM** COMMUNICATION RECOVERED ** is camera channel.
	NW camera error detection (audio) : CAM** COMMUNICATION ERROR (AUDIO) ** is camera channel.
	NW camera error recovery (audio) : CAM** COMMUNICATION RECOVERED (AUDIO) ** is camera channel.
	HDD smart warning ² : Recorder: MAIN-y SMART WARNING Extension unit: EXTx-y SMART WARNING x is unit number, y is disk number.
	HDD hour meter warning : Recorder: MAIN-y HOUR METER WARNING Extension unit: EXTx-y HOUR METER WARNING x is unit number, y is disk number.
	Remove auto links (per HDD) : Recorder: MAIN-y LOGICALLY REMOVED Extension unit: EXTx-y LOGICALLY REMOVED x is unit number, y is disk number.
	Remove auto links (per unit) : Recorder: MAIN LOGICALLY REMOVED Extension unit: EXTx LOGICALLY REMOVED x is unit number.

Item	Description
RAID5 recovery failure	: Recorder: MAIN RAID5 RECOVERY FAILURE Extension unit: EXTx RAID5 RECOVERY FAILURE x is unit number.
RAID6 recovery failure	: Recorder: MAIN RAID6 RECOVERY FAILURE Extension unit: EXTx RAID6 RECOVERY FAILURE x is unit number.
Fan trouble	: Recorder: MAIN FANy ERROR Extension unit: EXTx FANy ERROR x is unit number, y is FAN number.
Thermal trouble	: Recorder: MAIN THERMAL ERROR Extension unit: EXTx THERMAL ERROR x is unit number.
NW link error	: NETWORK LINK ERROR
RAID5 1 DOWN	: Recorder: MAIN RAID5 1 DOWN Extension unit: EXTx RAID5 1 DOWN x is unit number.
RAID5 2 DOWN	: Recorder: MAIN RAID5 2 DOWN Extension unit: EXTx RAID5 2 DOWN x is unit number.
RAID6 1 DOWN	: Recorder: MAIN RAID6 1 DOWN Extension unit: EXTx RAID6 1 DOWN x is unit number.
RAID6 2 DOWN	: Recorder: MAIN RAID6 2 DOWN Extension unit: EXTx RAID6 2 DOWN x is unit number.
RAID6 3 DOWN	: Recorder: MAIN RAID6 3 DOWN Extension unit: EXTx RAID6 3 DOWN x is unit number.
Camera SD memory card error	: CAM xx SD ERR ** is camera channel.
Camera SD memory card starting write error	: CAM xx SD START ERR ** is camera channel.
Camera SD memory card ending write error	: CAM xx SD END ERR ** is camera channel.
Camera SD memory card list request error	: CAM xx GET LIST ERR ** is camera channel.
Camera SD memory card data obtainment failure	: CAM xx GET IMG ERR ** is camera channel.
Camera SD memory card data deletion failure	: CAM xx DEL IMG ERR ** is camera channel.
Video loss detection	: CAM xx VIDEO LOSS ** is camera channel.
Video loss recovery	: CAM xx VIDEO RECOVERED ** is camera channel.
Single mode format failure	: Recorder: MAIN-y SINGLE FORMAT ERROR Extension unit: EXTx-y SINGLE FORMAT ERROR x is unit number, y is disk number.
RAID5 mode format failure	: Recorder: MAIN RAID5 FORMAT ERROR Extension unit: EXTx RAID5 FORMAT ERROR x is unit number.

About mail notification

Item	Description
	RAID6 mode format failure : Recorder: MAIN RAID6 FORMAT ERROR Extension unit: EXTx RAID6 FORMAT ERROR x is unit number.
	HDD remove error : Recorder: MAIN-y SWAP WARNING Extension unit: EXTx-y SWAP WARNING x is unit number, y is disk number.
	Alteration detected : ALTERED **CH ** is camera channel.

*1 HDD capacity warning

A warning mail with the <except FULL> content will be sent when the available disk space becomes less than the set value for "HDD capacity warning" of "Disk" of the "Maintenance" menu. After a warning mail is sent, a warning mail with the <except FULL> content will be sent each time 1% of the available disk space is reduced, and a warning mail with the <FULL> content will be sent when there is no available disk space.

*2 The HDD smart warning mail is not sent in the RAID5 mode or the RAID6 mode.

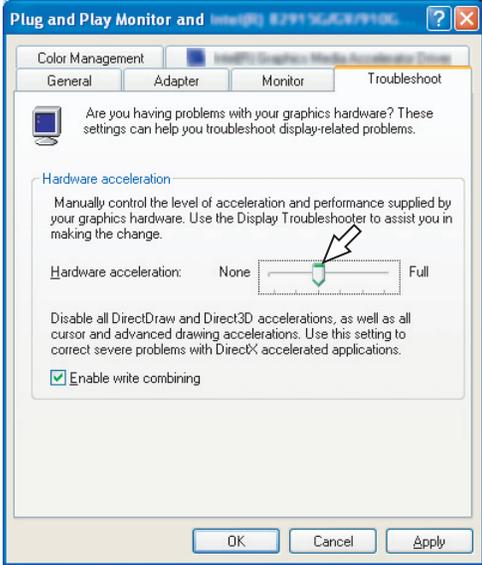
Troubleshooting

Problems

Before requesting service, check the following items. Contact your dealer if the problem does not appear here, if the problem is not resolved by these remedies, or if you have any questions about settings and installation.

Problem	Check item/remedy	Page
Cannot access from browser	Check if the 10BASE-T, 100BASE-TX, or 1000BASE-TX cable is connected to the network port.	-
	If the network port connection indicator does not light, the LAN is not connected or the network is not operating correctly. Make sure that the connection indicator lights. Contact the system administrator if the indicator does not light.	-
	Refer to the system administrator to make sure the IP address is valid.	page 11
	Use the following procedure to check if you are accessing a valid IP address. >ping "recorder IP address" When reply is returned from the recorder, the connection is normal. When reply is not returned, check the IP address and the subnet mask settings.	-
	Refer to the system administrator to make sure the IP address is different from another device.	page 11
	Check if the IP address of the recorder matches the subnet of the network.	page 11
	When the recorder and the client (PC) are on the same subnet, set the same subnet for the IP address.	
	To access the recorder on the same subnet, it is recommended to set the recorder's address to "Don't Use Proxy For These Addresses".	
Buttons on browser window are not displayed correctly	The browser's display may have troubles if you change the font settings from the initial settings. Use the initial font settings.	-
Some information does not appear on browser window	Press [F5] on the keyboard to refresh the window.	-
Image is not being refreshed	The image display may be stopped because of congestion on the network. Press [F5] on the keyboard to acquire the image again.	-
	Image data may not be refreshed if recording at low recording rate (less than 1 ips).	-
Live and recorded images in MPEG-4 format are not displayed in a normal manner	Display and recording may be unavailable for up to one minute directly after the recorder is turned on while cameras are active or a LAN cable is connected to the camera port.	-
SD memory data is not displayed on rec event list	Data on SD memory cannot be played from a normal rec event list or from date search. Filter the rec event list by using [SD memory] of the rec event search and then select rec event list to play images.	-
	The recorded time on the SD memory data is the time set for the camera when the image is recorded on the SD memory card. Check the time set for the camera.	-
Cannot play SD memory data	If the recording consists of only a few frames, they may not be played back normally. When this happens, click "NEXT IMAGE" / "PREV IMAGE" to display the images.	-

Troubleshooting

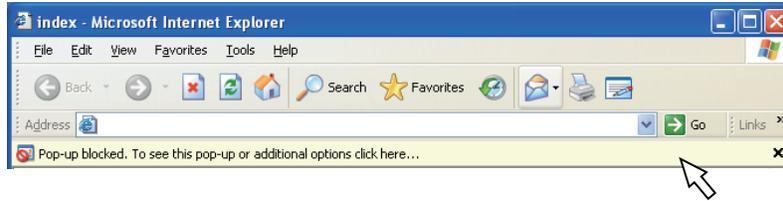
Problem	Check item/remedy	Page
<p>Display in one image display area changes to multiple camera images when viewing MPEG-4 images in multiscreen</p>	<p>This may be caused by the combination of the PC's display adapter and driver. When this happens, first, update the driver of the display adapter.</p> <ul style="list-style-type: none"> If this does not resolve the problem, use the following procedure to adjust the hardware accelerator function. This explanation uses Windows XP as an example. <ol style="list-style-type: none"> Close all the browsers and then right-click the desktop and select "Properties" from the menu. Select [Setting] tab from "Display Properties", and then click the [Advanced] button. Click the [Troubleshoot] tab, and disable the DirectDraw acceleration by adjusting the level of [Hardware acceleration]. 	<p>—</p>
<p>Cannot close confirmation window when basic operation window opens</p>	<p>Check the user name and password.</p>	<p>page 70</p>
<p>Cannot play back downloaded images</p>	<p>Download is stopped when the settings are changed. When this happens, the downloaded image cannot be played back.</p>	<p>—</p>
<p>[Please wait] is always displayed on window</p>	<p>ActiveX control is not installed. Install ActiveX control.</p>	<p>page 96</p>
<p>Audio is not recorded Audio is not be played correctly</p>	<p>Is "Mic input" selected for "Audio mode" on the setup menu of the network camera?</p>	<p>page 34, page 42</p>
	<p>Is "32 kbps" selected for "Audio bit rate" on the setup menu of the network camera? Check the settings of the camera.</p>	<p>page 34, page 42</p>
	<p>Audio may not play when playing the most recent images while recording images or audio. If this happens, stop and then start playing the images again.</p>	<p>—</p>
<p>Cannot play audio using the Viewer software</p>	<ul style="list-style-type: none"> Are an image data (extension: n3r) and an audio data (extension: n3a) in the same folder? Check the directory designated as the destination folder. 	<p>Operating Instructions (PDF file)</p>

Problem	Check item/remedy	Page
Live image is not displayed	Check the settings for [NW camera] on the setup menu.	page 48
	Check the settings for "Live video" on the setup menu.	page 42
	Check the IP address, subnet mask, and default gateway for the recorder and the network camera.	page 61
	When the camera's compression format is set to M-JPEG and when saving from the recorder's setup menu or measuring from the program settings repeatedly, a few minutes of live image are not recorded and instead a black screen appears. If this happens, wait about 10 minutes.	-
	The camera image may not be displayed in MPEG-4 format images via the Internet. Refer to your network administrator because it effects the router settings and other network devices.	-
Stops playback. Playback restarts after a short time.	Time settings are changed through auto time adjustment. When the time in one record is not continuous, image playback may stop. In this case, playback will restart after a short time.	-
Live and recorded images are not displayed	<ul style="list-style-type: none"> • Image is not displayed because ActiveX control is not installed correctly if logged in to a user's account with limited access privileges. Log in to a user account as an administrator. • ActiveX control cannot be installed sometimes when you log in the network with domain authentication (Active Directory). Register trusted sites and add the security setting. <ol style="list-style-type: none"> 1. Start up Internet Explorer and click on "Tools". 2. Click "Internet options". 3. Click the "Security" tab, and select "Trusted sites". 4. Set "Low" for "This zone's security level" (lowering the security level lowers the security level of the PC being used). 5. Click "Site". Do "Add" to URL of the recorder. When you do this, check that the "Must check all servers (https:) of sites in this zone" check box is not selected. 	-
<ul style="list-style-type: none"> • Refresh of live images is unstable • Browser disconnection occurs • Network performance is poor • Downloaded image is not displayed correctly • The image is not displayed, recorded, or played back correctly. 	If the cameras use different compression formats, the performance may be poor (image update is unstable).	-
	The settings may exceed the performance limit of network cable or the recorder's network. Lower the value/rate related to network performance, such as the live transmission rate and the recording rate.	page 42
	The recorder and the HUB network speed may not match (100BASE-TX Full and 100BASE-TX Half, for example). A HUB may cause variations in network transmission speeds. Set the HUB's transmission speed and the recorder's network transmission speed to the same speed.	-
Cannot operate camera	Make sure that the number of the camera set in [NW camera] on the setup menu is correct.	page 48
	Make sure that the user name and password in [NW camera] on the setup menu have been input.	page 48

Message display

The following problems may occur depending on the operating environment. If these problems occur, use the appropriate remedy to solve it. The following remedies do not affect other applications or security.

The "Information bar" used in the following problems and remedies indicates the message bar that appears under the address bar in Internet Explorer.



Problem	Remedy
The following message appears in the information bar. "Pop-up blocked. To see this pop-up or additional options, click here..."	Click the information bar and select "Allow popups from this site...". A prompt asking "Allow popups from this site" appears, click the "Yes" button.
The following message appears in the information bar. "This site may require the following ActiveX control: Install 'wvasetup.exe' from 'Panasonic Corporation.' and click here..."	Click the information bar and select "Install ActiveX Control...". A security warning window appears, click the "Install" button.
The following message appears in the information bar. "Internet Explorer has blocked the file being downloaded to your computer from this site as a security measure. Click here to display options..."	Click the information bar and select "Download file...". If you cannot download the file even after doing the following operations, do the following. Open Internet Explorer's security settings window, select "Download" - "Automatic prompting for file downloads"- "Enable" and then click the "OK" button. A warning window appears, click the "Yes" button.
The following security warning window appears when you try to download a file. "The publisher could not be verified. Are you sure you want to run this software?"	Click the "Run" button.
Unnecessary status bar or scroll bar appears in popup	Open Internet Explorer's security settings window, select "Allow unlimited size and position of script when opening windows"- "Enable" and then click the "OK" button. A warning window appears, click the "Yes" button.

Glossary

Words used in the manual

This manual uses the following words.

ActiveX Control

A software module developed by Microsoft. It is used to add functions, downloaded from a web server via the Internet or an Intranet, to Internet Explorer. The recorder uses it to display video.

Bit rate

Indicates how many bits of data can be processed or transmitted in a unit of time. Generally, the units are in bps, or bits per second. Used to indicate the compression rate of video and audio data, and how much data a communications line can send and receive in 1 second.

Broadband Router

Router used to access the Internet via high-speed ADSL or fiber optic lines.

Cable Modem

Device used for connecting to the Internet via a CATV line. Called a cable modem because it functions similar to a modem on a phone line. It differs from regular modems that use a serial port in that it is connected to a PC via an Ethernet connection.

Camera operation

Operations of the camera connected to the recorder such as pan and tilt (horizontal and vertical position), zooming, focusing, brightness, preset motions (movement towards a set horizontal and vertical position) and auto functions (automatic camera rotation, etc.).

DDNS

A technology for dynamically translating DNS server information to enable the transfer of only differences in information between DNS servers (refer to "DNS"). This reduces the data transfer amount necessary for updating information on the DNS server and reduces the load on the network.

DHCP

A protocol that enables PCs to automatically get information from a server needed for accessing a network.

DHCP Server

Maintains network-related information (assigns IP address ranges to (default) gateway servers and clients), and distributes that information when clients request it.

DNS

The long lists of numbers or IP addresses that are used in network environments are difficult to remember, which makes them impractical. This is why PCs are given an easy-to-follow name (domain name) which is converted to an IP address before they are communicated with. The DNS provides translation between domain names and IP addresses.

Default Gateway

Network device used as a gateway for networks, such as a local network, to access PCs on an external network. Data is sent using the default gateway if a gateway is not specified in the destination IP address.

Disk Configuration

Configure the HDD after replacing, removing, or adding a HDD. Disk Configuration is the menu for configuring the HDD.

Electronic Zoom

Enlarges live images and playback images during playback. The electronic zoom enlarges the images by the recorder and is separate from the zoom function included as part of the camera operations for enlarged images.

Emergency Recording

Gives priority to recording video and audio when an emergency occurs using the external switch connected to the recorder.

Ethernet

LAN communication developed by Xerox.

Event

Indicates an occurrence that causes the recorder to take an event action. Events include, terminal alarms, command alarms, and site alarms.

Event recording

Function that automatically starts video and audio recording when an event occurs. Event recording includes Pre-event recording that records images before the event and Post-event recording that records images after the event.

External Recording Mode

Use the external switch connected to the recorder to switch to time tables such as the recording settings and event action settings.

FTP

A protocol that is commonly used for transferring files over the Internet.

Firewall

A type of security used when accessing outside networks like the Internet.

Full Duplex

Communications method that allows simultaneous sending and receiving by transmitting in both directions using an independent sending line and receiving line.

Global Address

IP address assigned to each device connected to the Internet that is equivalent to an address on the Internet. IP address is required for Internet communications.

HDD

Abbreviation for hard disk drive, a type of mass storage device. Camera images are recorded onto a hard disk drive.

HTML

HTML is a markup language used for describing the logical structure of a document and its appearance. Links to images, audio, video and other documents can be inserted into the document. A web browser is used to view documents written in HTML.

Half Duplex

Communications method that switches between sending and receiving using a single communications line.

IP Masquerading

A technology for sharing a single global address between two or more PCs. Allows simultaneous connection of multiple machines to 1 global address to dynamically convert NAT and different TCP/UDP port numbers.

IP address

The identification number assigned to PCs connected via IP networks such as the Internet or an Intranet, or to individual communications devices. Do not assign the same address to multiple devices, especially on the Internet.

Internet

PC network that connects networks all over the world. Different types of PCs can communicate over the Internet.

LAN

A communications network for connecting PCs, printers and other network devices in a relatively small area such as in a building or floor of a building or campus in which data is transferred.

M-JPEG

Video format in which the camera sends continuous JPEG images. Compared with sending images from the camera one at a time, this method reduces the load on the network. However, the transfer rate may change depending on the status of the camera. Images may be represented as a JPEG depending on the camera.

MAC address

Fixed physical address assigned to network devices. Devices send and receive data based on this.

Manual recording

Click the [Recording] button and the [Recording stop] button to manually start and stop recording of video and audio.

Multicast

A way to send the same data to multiple users specified on a network.

Multiscreen Display

This recorder can display multiple camera channels simultaneously while displaying live images or playback images.

NAT (Network Address Translation)

A technology for sharing a single global address between two or more PCs.

NTP (Network Time Protocol)

A protocol developed to accurately maintain time among hosts on the Internet.

POP 3

A protocol for receiving e-mail stored on a server on the Internet or an Intranet.

POP 3 Server

A server that supports POP3, currently the most widely used mail sending protocol.

Plug-in Software

Small programs used to add functions to application software.

PoE (Power over Ethernet)

A technique for supplying power and data simultaneously over an Ethernet cable. PoE was standardized in June, 2003 as "IEEE802.3af".

PoE Supplied Hub

A switching hub that provides PoE functionality. A maximum of 48 V 15.4 W of power can be supplied to cameras and other devices.

Port Number

A sub address set below the IP address to connect multiple parties simultaneously for communication (TCP, UDP, etc.) on the Internet.

Primary Server

DNS servers usually have more than 2 system and the primary server is the main system.

Private Address

IP address assigned when connecting primarily to LAN. Private IP addresses can be assigned freely on a network and do not require a formal application. However, because private IP addresses cannot be used to access the Internet, a router or other device it is necessary to assign a global IP address.

Protocol

A set of rules that allows the exchange of data amongst different types PCs with information. The Internet uses the TCP/IP protocol as its base and information is transferred following http and ftp protocols depending on the application.

Proxy Server

PC or software that connects with the Internet as the proxy for a computer on a local network. It allows special connections from the internal network and blocks unauthorized access from external networks.

RAID (RAID5)

An abbreviation for Redundant Arrays of Inexpensive Disks 5 that provides a highly reliable disk array by distributing access over multiple HDDs, increasing both speed and capacity. Even if one HDD has errors, data can be recovered based on error correction data recorded on other HDDs. (RAID5 is used when 3 or more HDDs are connected. However, when 2 or more HDDs simultaneously have errors, data cannot be recovered.)

RAID (RAID6)

An abbreviation for Redundant Arrays of Inexpensive Disks 6 that provides a highly reliable disk array by distributing access over multiple HDDs, increasing both speed and capacity. Even if two HDD has errors, data can be recovered based on error correction data recorded on other HDDs. (RAID6 is used when 4 or more HDDs are connected. However, when 3 or more HDDs simultaneously have errors, data cannot be recovered.)

Recording rate (ips, I-Frame)

Unit that determines the smoothness when recorded images are played back. "ips" indicates the number of recorded frames in 1 second. When the recording rate is higher, the playback is smoother, but available recording time is reduced. I-Frame indicates the refresh rate set on the camera.

Resolution

Indicates the smoothness of the image quality and the size of the images recorded from the camera. Indicates the number of dots used in the image displayed on the screen. A horizontal resolution of 720 dots and a vertical resolution of 480 dots is expressed as 720-480.

Router

Placed in between different networks, a router sends data to the proper destination via network. If data on the network is addressed to an external network, routers send the data to the outside of the network after judging the optimum sending route.

SD memory recording, SD memory data

SD memory recording is a camera function that saves images in the camera's internal SD memory when communication with the camera is disconnected within the time table recording time set on the recorder. SD memory data refers to those images recorded on the card.

SMTP

A protocol for sending e-mail on the Internet or an Intranet. Used when transferring mail between servers or when clients send mail to the server.

SMTP authentication

SMTP mail transfer protocol appended with a user authentication function. It authenticates passwords and user accounts between SMTP servers and clients. Both SMTP servers and clients must support SMTP authentication.

SMTP Server

A server that supports SMTP, currently the most widely used mail transfer protocol.

SNMP

A protocol for monitoring and managing networked communications devices, such as routers, PCs, cameras and Network Disk Recorders via a network.

Schedule Recording

Function that automatically starts video and audio recording on a preset time schedule.

Secondary Server

DNS servers usually have more than 2 systems and the secondary server is the sub system. If there is trouble with the primary server, the secondary server takes over.

Sequence

Function that automatically switches the camera image in a preset order. Sequence is available on the recorder when live images are displayed.

Subnet

A small network used as a unit of administration when a larger network is divided into smaller networks. Large networks in corporations, for example, the network can be broken down into smaller networks called "subnets" to make the network more manageable and lines used more efficiently. In this case, these smaller networks are called subnets.

Subnet mask

Subnet mask consists of 32-bit numeric values. According to the values, devices can determine which part of the address is the network address and which part is the host address.

System Administrator

Person with the responsibility for setting up and monitoring the recorder.

TCP/IP

The standard network protocol for the Internet and Intranets.

URL

An address for locating information resources such as documents and images on the Internet.

Unicast

Way to send data to a single IP address on a network.

VPN

Service used to make public lines as private lines. Many companies are using this as a new medium of communication instead of costly private lines. Depending on service, VPN also provides a secure line using authentication technology and encryption.

Video Motion Detection (VMD)

Function that automatically detects objects moving in video images.

The main unit records the VMD information sent from the camera and has a VMD search function (*) to find images for only the time and date at which motion was detected.

* Refer to the readme.txt for information about cameras that support VMD search.

WAN

Allows physically separated PCs, such as between the head office and a branch office, to connect via a phone line or private line data for exchanging.

Web Browser

Application software necessary for viewing web pages. The software downloads HTML, image, and sound files from the Internet and displays them after analyzing them. Microsoft Internet Explorer is one of the web browsers.

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Information for Users on Collection and Disposal of Old Equipment and used Batteries



These symbols on the products, packaging, and/or accompanying documents mean that used electrical and electronic products and batteries should not be mixed with general household waste.

For proper treatment, recovery and recycling of old products and used batteries, please take them to applicable collection points, in accordance with your national legislation and the Directives 2002/96/EC and 2006/66/EC.

By disposing of these products and batteries correctly, you will help to save valuable resources and prevent any potential negative effects on human health and the environment which could otherwise arise from inappropriate waste handling.

For more information about collection and recycling of old products and batteries, please contact your local municipality, your waste disposal service or the point of sale where you purchased the items.

Penalties may be applicable for incorrect disposal of this waste, in accordance with national legislation.



For business users in the European Union

If you wish to discard electrical and electronic equipment, please contact your dealer or supplier for further information.

[Information on Disposal in other Countries outside the European Union]

These symbols are only valid in the European Union. If you wish to discard these items, please contact your local authorities or dealer and ask for the correct method of disposal.



Note for the battery symbol (bottom two symbol examples):

This symbol might be used in combination with a chemical symbol. In this case it complies with the requirement set by the Directive for the chemical involved.

For U.S., Canadian and Puerto Rican fields:

Panasonic System Solutions Company,
Unit Company of Panasonic Corporation of North America
www.panasonic.com/business/
For customer support, call 1.800.528.6747
Three Panasonic Way 2H-2, Secaucus, New Jersey 07094

Panasonic Canada Inc.
5770 Ambler Drive, Mississauga, Ontario, L4W 2T3 Canada
(905)624-5010
<http://www.panasonic.ca>

Panasonic Sales Company
Panasonic Puerto Rico, Inc.
AVE 65de Inf, Km 9.5 Carolina, PR 00985
(787)750-4300

For European and other fields:

Panasonic Corporation
<http://panasonic.net>

Importer's name and address to follow EU rules:

Panasonic Testing Centre
Panasonic Marketing Europe GmbH
Winsbergring 15, 22525 Hamburg F.R.Germany