

New functions and addendum

- This document contains descriptions of how to set the new functions and their restrictions. Refer also to the Operating Instructions of this product.
- Depending on the model used, the screens shown in the explanations may differ to the actual camera screens.
- This document is for the following models.
WV-S8531N, WV-X8571N

Due to software upgrade, the following functions have been added and changed to this product.

•Firmware Ver.1.50

No.	Functions	Item (Page)	Page
1	Add a notify to the [SNMP trap setting]	Advanced (Network)	3
2	Add to the system log when recording stream fails to write	Maintenance (Status)	4
3	Add a function to notify the user of writing failures in the recording stream with a unique alarm	Maintenance (Status)	5
4	Add a note when the bit rate of the recording stream is set to a value exceeding recommended value	Image/Audio (Image)	6
5	Change the initial value of Network Settings and DHCP behavior in IPv4 network of Network	Network (Network)	7
6	Add ONVIF® settings in Network	Network (Network)	8
7	Add the SRTP settings in "Advanced" of "Network"	Advanced (Network)	9
8	Extend authentication password for the destination of notification	Network (Advanced)	10

•Firmware Ver.1.60

No.	Functions	Item (Page)	Page
9	Change the initial value of "Overwrite" of SD memory card to On	SD memory card (Basic)	11
10	Add the supplementary explanation of On/Off of Internet mode to the setting screen	Advanced (Network)	12
11	Add NTP test function	Advanced (Network)	13
12	Add TLS settings to HTTPS	Advanced (Network)	14
13	Add MQTT function	Advanced (Network)	15
14	Add a system log when MQTT function fails	Status (Maintenance)	18

Firmware Ver.2.01

No.	Functions	Item (Page)	Page
15	Add LLDP function	Advanced (Network)	19

1. Add a notify to the [SNMP trap setting] **(Operating Instructions Configure the network settings [Network] - Configure advanced network settings [Advanced])**

Add the notifications to [SNMP trap settings].

Note

- In order to activate SNMP trap notifications for when alarms occur, alarm operation settings are required.

For information on settings related alarm operations, refer to Configure the alarm settings [Alarm] in Operating Instructions.

2. Add to the system log when recording stream fails to write

(Operating Instructions “Others” – “Maintenance” - Check the status [Status])

A system log has been added for errors in the write process of the recording stream to the log related to SD memory cards.

Category	Indication	Description
SD memory card	<SD>Format	Successfully formatted the SD memory card.
	<SD>Format error	Error occurred when formatting the SD memory card.
	<SD> Write-protect ON (Locked card)	A write-protected SD memory card is inserted.
	<SD> Detection error	The SD memory card could not be correctly recognized.
	<SD> Write error	An error occurred when writing to the SD memory card.
	<SD> Read error	An error occurred when reading from the SD memory card.
	<SD> Delete error	An error occurred when deleting data from the SD memory card.
	<SD> File system error	An error occurred in File system of the SD memory card.
	<SD> Undefined error	An error other than the ones above has occurred for the SD memory card.
	<SD> An abnormality occurs in continuity of the SD memory recording. Check the recording bit rate setting of the SD memory recording.	An error occurred when writing to the SD memory card.
<SD> An error occurs in the SD memory card. Check the status of the SD memory card.	The SD memory card write process still generates data loss. Make sure that the SD memory card is properly recognized. If the card is not recognized, reboot the unit, or remove and reinsert the SD memory card to check.	

3. Add a function to notify the user of writing failures in the recording stream with a unique alarm (Operating Instructions “Others” – “Maintenance” - Configure the alarm settings [Alarm])

– Configuration of the settings relating to alarm notification [Notification] –

Configure the settings relating to Panasonic alarm protocol)

Add the write processing error of the recording stream to the occurrence condition of the Panasonic alarm protocol notification of “Diag.”

Panasonic alarm protocol

• [Panasonic alarm protocol]

Select “On” or “Off” to determine whether or not to provide notification by Panasonic alarm protocol according to the settings for the “Alarm” and “Diag.” checkboxes of “Destination of notification” below.

- When an alarm is detected (“Alarm”)
- When a notification of the remaining capacity of the SD memory card has been provided (“Diag.”)
- When the SD memory card has become full (“Diag.”)
- When the SD memory card cannot be recognized (“Diag.”)
- When there is a write error on the SD memory card (“Diag.”)

Default: Off

Destination of notification

• [Address 1] - [Address 8]

Enter the destination IP address or host name of the Panasonic alarm protocol from the following.

Up to 8 destination server addresses can be registered.

[Alarm] checkbox: When the checkbox is checked, the Panasonic alarm notification will be provided upon an alarm occurrence.

[Diag.] checkbox: When the checkbox is checked, notification using Panasonic alarm protocol will be provided in the following cases.

- When notification of the remaining capacity of the SD memory card has been provided
- When the SD memory card has become full
- When the SD memory card cannot be recognized
- When the SD memory card cannot be written

[Destination server address]: Enter the destination server address or host name.

Available characters: Alphanumeric characters, the colon (:), the period (.), the underscore (_), and the hyphen (-).

To delete the registered destination server address, click the [Delete] button respective to the desired destination server address.

4. Add a note when the bit rate of the recording stream is set to a value exceeding recommended value

(Operating Instructions “Image/Audio” - Configure the settings relating to Stream [Image])

Add the statement that it is possible that an error may occur in the continuity of SD memory card recording, if you set a bit rate that exceeds the recommended value in “Note” of “Max bit rate (per client) *”.

[Max bit rate (per client)*]:

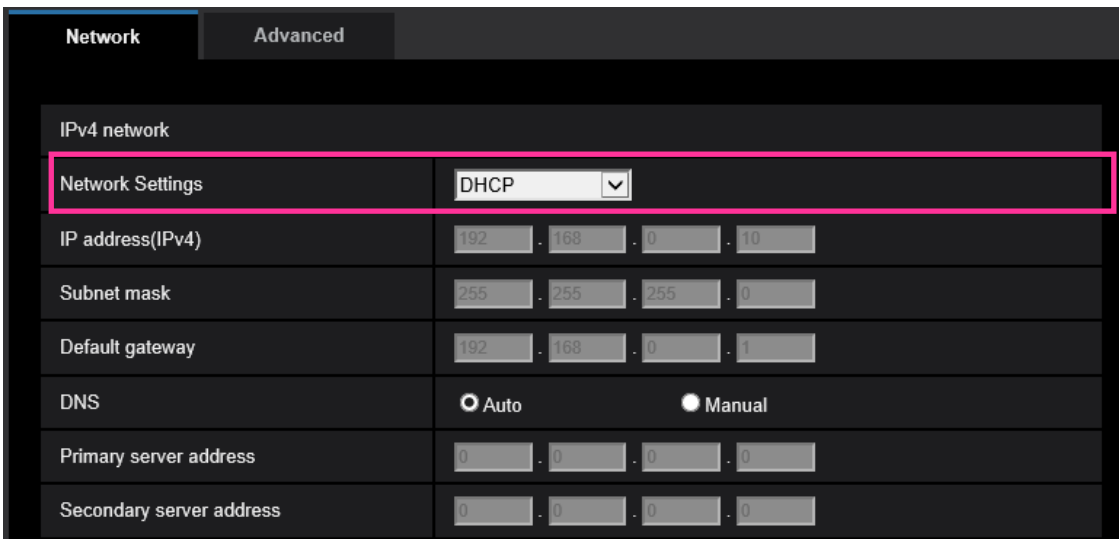
Note

- The bit rate for “Stream” is restricted by “Bandwidth control (bit rate)” on the [Network] tab on the “Network” page. When a value with “*” attached is set, images may not be streamed.
- It is recommend that the bit rate setting of the stream to be 2048 kbps or lower. Setting a value higher than 2048 kbps may cause abnormalities in the continuity of the recorded video.
- When the refresh interval is too short, the actual bit rate may exceed the set bit rate depending on the subject.
- Depending on the number users connecting at the same time or the combination of features used, the bit rate may be lower than the configured value. Check the transmission of images after changing settings.

5. Change the initial value of Network Settings and DHCP behavior in IPv4 network of Network

(Operating Instructions “Configuring the network settings” [Network]-
“Configuring the network settings” [Network])

Change the initial value of Network Settings and DHCP behavior in IPv4 network of Network.



The screenshot shows the 'Network' configuration page with the 'Advanced' tab selected. Under the 'IPv4 network' section, the 'Network Settings' dropdown menu is highlighted with a pink border and currently displays 'DHCP'. Below this, the IP address is set to 192.168.0.10, the subnet mask to 255.255.255.0, and the default gateway to 192.168.0.1. The DNS is set to 'Auto', and both primary and secondary server addresses are set to 0.0.0.0.

Network	Advanced
IPv4 network	
Network Settings	DHCP
IP address(IPv4)	192 . 168 . 0 . 10
Subnet mask	255 . 255 . 255 . 0
Default gateway	192 . 168 . 0 . 1
DNS	<input type="radio"/> Auto <input checked="" type="radio"/> Manual
Primary server address	0 . 0 . 0 . 0
Secondary server address	0 . 0 . 0 . 0

IPv4 network

[Network Settings]

Select the method of how to configure the IP address from the following.

- **Static:** The IP address is configured by entering manually on “IP address (IPv4)”.
- **DHCP:** The IP address is configured using the DHCP function.
If the camera cannot acquire an IP address from the DHCP server, set the IP address to 192.168.0.10.
After that, once an IP address is acquired from the DHCP server, change it to that IP address.
- **Auto (AutoIP):** The IP address is configured using the DHCP function. When the DHCP server is not found, the IP address is automatically configured.
- **Auto (Advanced):** Using the DHCP function, network address information is referred to, and an unused IP address is configured to the camera as a static IP address. The configured IP address is automatically determined within the subnet mask range by the camera. When the DHCP server is not found, the IP address is set to 192.168.0.10.
- **Default:** DHCP

6. Add ONVIF® settings in Network

(Operating Instructions “Configuring the network settings” [Network]-
“Configuring the network settings” [Network])

Add ONVIF® settings in the network settings.

Network	Advanced
IPv4 network	
Network Settings	DHCP
IP address(IPv4)	192 . 168 . 0 . 10
Subnet mask	255 . 255 . 255 . 0
Default gateway	192 . 168 . 0 . 1
DNS	<input type="radio"/> Auto <input checked="" type="radio"/> Manual
Primary server address	0 . 0 . 0 . 0
Secondary server address	0 . 0 . 0 . 0
IPv6 network	
Manual	<input checked="" type="radio"/> On <input type="radio"/> Off
IP address(IPv6)	
Default gateway	
DHCPv6	<input checked="" type="radio"/> On <input type="radio"/> Off
Primary DNS server address	
Secondary DNS server address	
Common	
HTTP port	80 (1-65535)
Line speed	Auto
Max RTP packet size	<input type="radio"/> Unlimited(1500byte) <input checked="" type="radio"/> Limited(1280byte)
HTTP max segment size(MSS)	Unlimited(1460byte)
Bandwidth control(bit rate)	51200kbps
Easy IP Setup accommodate period	<input type="radio"/> 20min <input checked="" type="radio"/> Unlimited
FTP access to camera	<input checked="" type="radio"/> Allow <input type="radio"/> Forbid
ONVIF® *ONVIF is a trademark of Onvif, Inc.	<input type="radio"/> On <input checked="" type="radio"/> Off
Set	

[ONVIF®]

Set the ONVIF to On/Off.

On: Enables the access from the ONVIF camera.

Off: Disables the access from the ONVIF camera

Default: On

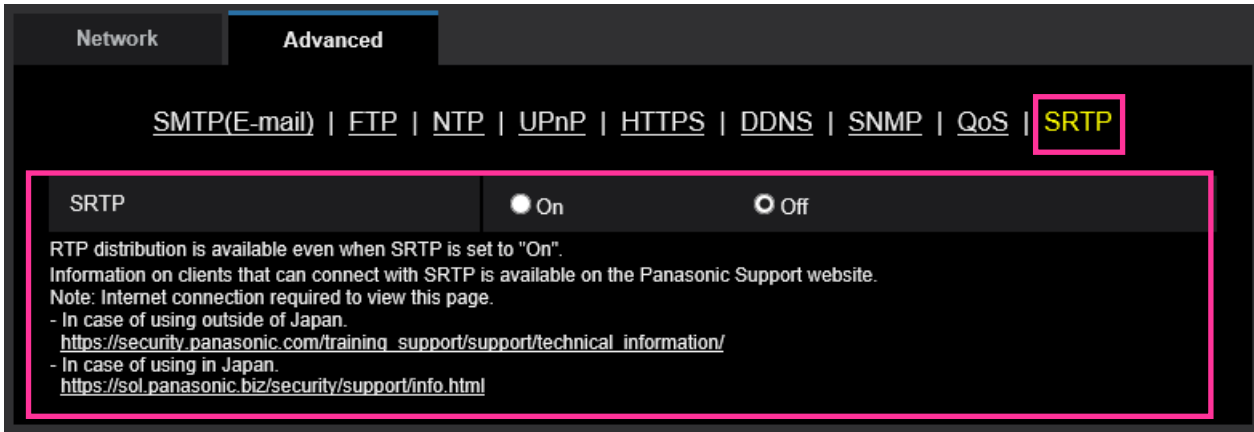
*ONVIF is the trademark of ONVIF, Inc.

7. Add the SRTP settings in "Advanced" of "Network"

(Operating Instructions "Configuring the network settings" [Network] - "Configure advanced network settings" [Advanced])

The SRTP settings has been added to "Advanced" of "Network".

The Secure Real-time Transport Protocol (SRTP) can encrypt the "Real-time Transport Protocol (RTP)" for real-time playback of data such as voice and video, thus increasing the security of communication.



[SRTP]

On/Off the SRTP function.

On: Enables the SRTP distribution on SRTP-compatible clients.

Off: Disables the SRTP distribution on SRTP-compatible clients.

Default: Off

Note

- RTP distribution is available even when SRTP is set to "On".
 - Information on clients that can connect with SRTP is available on the Panasonic Support website. <https://i-pro.com/global/en/surveillance/training-support/support/technical-information>
- <Control No.: C0318>

8. Extend authentication password for the destination of notification (Operating Instructions – Configure the network settings [Network] – Configure advanced network settings [Advanced] - Configure the settings related to sending E-mails)

The number of characters that can be entered for the authentication password of the destination of notification has been expanded to 128 characters.

- **[Authentication – Password]**

Enter the password to access the server.

Available number of characters: 0 - 128 characters

Unavailable characters: " &

9. Change the initial value of “Overwrite” of SD memory card to On (Operating Instructions – Configure the basic settings of the camera [Basic]) – Configure the settings relating to the SD memory card [SD memory card])

[Overwrite]

Determine whether or not to overwrite when the remaining capacity of the SD memory card becomes insufficient.

- **On:** Overwrites when the remaining capacity of the SD memory card becomes insufficient. (The oldest image is the first to be overwritten.)
- **Off:** Stops saving images on the SD memory card when the SD memory card becomes full.
- **Default:** On

10. Add the supplementary explanation of On/Off of Internet mode to the setting screen

(Operating Instructions – Configure the settings relating to images and audio [Image/Audio] – Configure the settings relating to Stream [Image])

Add the supplementary explanation of On/Off of Internet mode setting.

Stream(1)	
Stream transmission	Cam. 1 <input type="radio"/> On <input checked="" type="radio"/> Off
	Cam. 2 <input type="radio"/> On <input checked="" type="radio"/> Off
	Cam. 3 <input type="radio"/> On <input checked="" type="radio"/> Off
	Cam. 4 <input type="radio"/> On <input checked="" type="radio"/> Off
Stream encoding format	<input type="radio"/> H.265 <input checked="" type="radio"/> H.264
Internet mode	<input type="radio"/> On <input checked="" type="radio"/> Off <small>* When "On" is selected, streams will be transmitted using the HTTP port. When "Off" is selected, streams will be transmitted using the UDP port.</small>

[Internet mode]

Select "On" when transmitting H.265 (or H.264) images via the Internet. It is possible to transmit stream without changing the broadband router settings configured for JPEG image transmission.

- **On:** H.265 (or H.264) images and audio will be transmitted using the HTTP port. Refer to [HTTP port] for further information about the HTTP port number settings.
- **Off:** H.265 (or H.264) images and audio will be transmitted using the UDP port.
- **Default:** On

Note

- When "On" is selected, only "Unicast port (AUTO)" will be available for "Transmission type".
- When "On" is selected, it may take time to start displaying stream images.
- When "On" is selected, stream images may not be displayed depending on the number of the concurrent access user and audio data availability, etc.
- When "On" is selected, only IPv4 access is available.
- This setting is common among Cam. 1, 2, 3, and 4.

11. Add NTP test function

(Operating Instructions – Configuring the network settings [Network] – Configure advanced network settings [Advanced] – Configure the settings relating to the NTP server)

Add a test function for time synchronization to check if it can communicate with NTP server.

NTP	
Time adjustment	<input type="radio"/> Manual <input checked="" type="radio"/> Synchronization with NTP server
NTP server address setting	Manual
NTP server address	Example of entry: 192.168.0.10
NTP port	123 (1-65535)
Time adjustment interval	1h
NTP test	Execute

Set

[NTP test]

Select “Synchronization with NTP server” for “Time adjustment”, set the NTP server information, and then click the “Execute” button. You can communicate with the NTP server, synchronize the time, and check the NTP operation.

Note

- If the NTP test succeeds, “NTP time correction has succeeded.” is displayed .
- If the NTP test fails, “NTP time correction has failed.” is displayed .
- When “Time adjustment” is set to “Manual”, the “Execute” button of NTP test is grayed out.
- When “Time adjustment” is set to “Synchronization with NTP server” and the “NTP server address” is not set, the “Execute” button for the NTP test will be grayed out.

12. Add TLS settings to HTTPS

(Operating Instructions – Configuring the network settings [Network] – Configure advanced network settings [Advanced] – Configure the HTTPS settings)

Add TLS1.1, TLS1.2 and TLS1.3 selection items to the HTTPS connection method.

The screenshot shows the 'Advanced' tab of the network settings. Under the 'HTTPS' section, the 'Connection' dropdown is currently set to 'HTTP'. A tooltip indicates that when 'HTTPS' is selected, the maximum bandwidth is limited to 32Mbps. Below the dropdown, three checkboxes are visible: 'TLS1.1' (unchecked), 'TLS1.2' (checked), and 'TLS1.3' (checked). The 'Select certificate' dropdown is set to 'Pre-installed'. The 'HTTPS port' is set to '443'. There are buttons for 'Execute' and 'Set'.

[HTTPS - Connection]

Select the protocol used to connect the camera.

- **HTTP:** HTTP and HTTPS connections are available.
- **HTTPS:** Only the HTTPS connection is available.
- **Default:** HTTP

Select the TLS to use when HTTPS is selected.

- **TLS1.1:** Enable/Disable.
- **TLS1.2, TLS1.3:** Always enabled and cannot be disabled.
- **Default:** TLS1.1: Disable, TLS1.2: Enable, TLS1.3: Enable

Note

- To change to an HTTPS connection when HTTP is selected, perform HTTPS connection settings first. The HTTPS connection will be available even if the setting is changed to HTTP afterwards.

13. Add MQTT function

(Operating Instructions – Configuring the network settings [Network] – Configure advanced network settings [Advanced])

MQTT (Message Queueing Telemetry Transport) has been added to “Advanced” of “Network”. When an alarm occurs, the MQTT server can be notified of the event action by the alarm.

The screenshot shows the 'Advanced' network settings page. At the top, there are navigation links: SMTP(E-mail), NTP, UPnP, HTTPS, DDNS, SNMP, QoS, SRTP, and MQTT (highlighted in red). The 'MQTT settings' section is active, showing a toggle for 'On' (selected) and 'Off'. Below this is the 'Server' configuration with fields for Address, Port number (1-65535), Protocol (MQTT over SSL), User name, and Password. The 'Root CA certificate' section shows an 'Installation' button (Choose File), 'Information' (Invalid), and 'Server certificate verification' (Enable/Disable). The 'Alarm' section has a table for notification settings with columns for 'Enable/Disable' and 'Notification string'. The table has five rows: Terminal 1, Terminal 2, Terminal 3, VMD, and Command alarm. Each row has fields for Topic, Payload, QoS, and a Retain checkbox. A 'Set' button is at the bottom.

[MQTT settings]

Set On/Off whether to enable/disable the MQTT function.

When set to On, or it is On when the camera starts up, it will connect to the set server.

When the set alarm occurs, the settings will be notified to the server.

Default: Off

Server

[Address]

Enter the IP address or host name of the MQTT server to be notified when an alarm occurs.

Available number of characters: 1 - 128 characters

Available characters: Alphanumeric characters, the colon (:), the period (.), the underscore (_), and the hyphen (-).

Default: None (blank)

[Port]

Enter the port number of the MQTT server.

Available port number: 1 - 65535

Default: 8883

The following port numbers cannot be set because they are used by this product.

20, 21, 23, 25, 42, 53, 67, 68, 69, 80, 110, 123, 161, 162, 443, 554, 995, 10669, 10670

[Protocol]

Select the protocol to use when connecting to an MQTT server from MQTT over SSL/MQTT over TCP.

Default: MQTT over SSL

[User name]

Enter the user name to access the MQTT server.

Available number of characters: 0 - 32 characters

Unavailable characters: " & ; ¥

[Password]

Enter the password to access the MQTT server.

Available number of characters: 0 - 32 characters

Unavailable characters: " &

Root CA certificate

[Install]

Install the root CA certificate issued by the certification authority.

In the "Open File Dialog" that appears when you click the [Choose File] button, select the root CA certificate file issued by the certification authority, and then click the [Execute] button to install the root CA certificate.

The data format of the root CA certificate is PEM format or DER format.

[Information]

The root CA certificate information is displayed.

Invalid : The root CA certificate is not installed.

Root CA certificate host name : Indicates that the certificate is installed.

[Confirm] The details of CA certificate can be checked with the button.

[Delete] The CA certificate will be deleted with the button.

[Server certificate verification]

When [Protocol] is set to "MQTT over SSL" and [Server certificate verification] is set to "Enable", the server certificate is verified using the root CA certificate registered during the SSL connection.

Default : Enable

Note

- When [Server certificate verification] is set to "Enable", install the root CA certificate.

Notification setting

[Alarm]

Check the alarm events to be notified to the MQTT server.

Terminal 1: Notifies the MQTT server when an alarm occurs at terminal 1.

Terminal 2: Notifies the MQTT server when an alarm occurs at terminal 2.

Terminal 3: Notifies the MQTT server when an alarm occurs at terminal 3.

VMD: Notifies the MQTT server when motion detection occurs.

Command alarm: Notifies the MQTT server when a command alarm is entered.

[Topic]

Set the MQTT topic name to be sent. Topics have a hierarchical structure separated by "/".

Available number of characters: 1 - 128 characters

Available characters: Alphanumeric characters, "/"

Default:

Terminal 1: i-PRO/NetworkCamera/Alarm/Terminal/1

Terminal 2: i-PRO/NetworkCamera/Alarm/Terminal/2

Terminal 3: i-PRO/NetworkCamera/Alarm/Terminal/3

VMD: i-PRO/NetworkCamera/Alarm/VideoMotionDetection

Command alarm: i-PRO/NetworkCamera/Alarm/Command

[Payload]

Set the MQTT message payload.

Available number of characters: 1 - 128 characters

Available characters: Alphanumeric characters

Default:

Terminal 1: terminal alarm 1

Terminal 2: terminal alarm 2

Terminal 3: terminal alarm 3

VMD: VMD alarm

Command alarm: cmd

[QoS]

Select the QoS level from 0, 1, 2. The communication quality improves in the order of $0 < 1 < 2$.

0: The message is delivered at most once with QoS0. There is no guarantee that the message will reach the server.

1: The message is delivered at least once with QoS1. The message is guaranteed to reach the destination, but may be duplicated.

2: The message is delivered exactly once with QoS2. It guarantees that the message arrives just once.

Default: 1

[Retain]

Check this box if you want the MQTT server to save the last notified message.

Default: Unchecked

14. Add a system log when MQTT function fails

(Operating Instructions – Others – About the displayed system log)

Add a system log when an error occurs in the MQTT function.

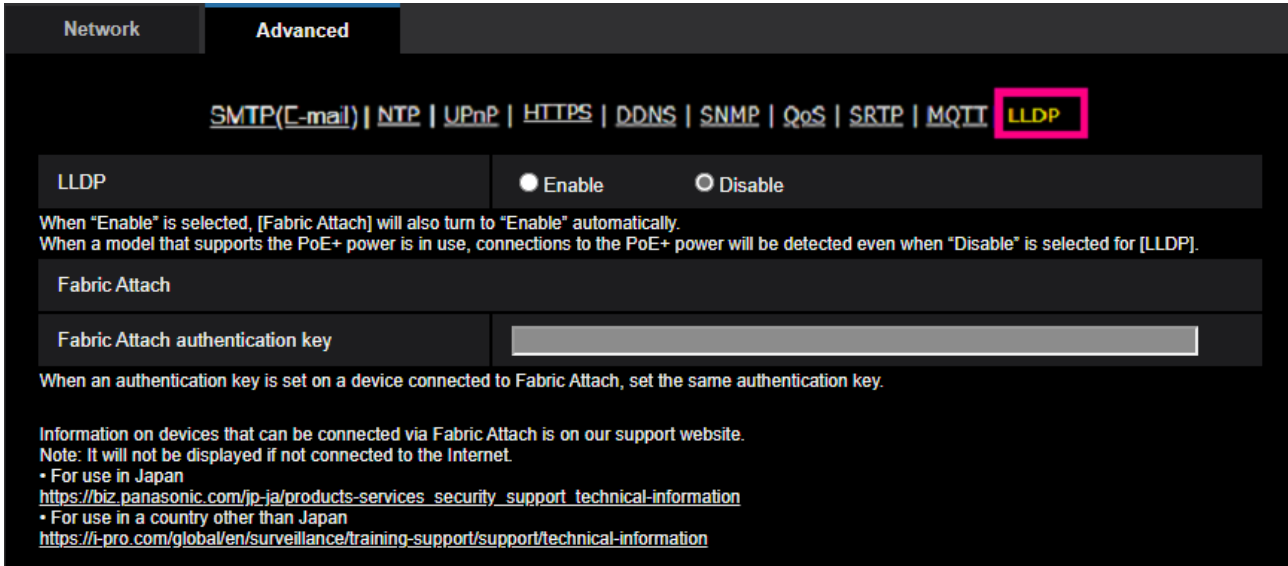
Error display related to MQTT

Category	Indication	Description
MQTT	<MQTT> Connection error	When the connection to the server fails, certification verification fails, or is disconnected (except for disconnections from the camera due to setting change)
	<MQTT> Notification error	When publishing to the server fails

15. Add LLDP function

(Operating Instructions – Configuring the network settings [Network] – Configure advanced network settings [Advanced])

LLDP (Link Layer Discovery Protocol) has been added to [Advanced] of [Network]. Interoperability can be achieved by sending and receiving camera's device information to and from LLDP-compatible devices.



[LLDP]

Enable/Disable whether to enable the LLDP function and Fabric Attach.

Default: Disable

When set to “Enable”, LLDP including TLVs with the checks in the table below will be sent.

End Of LLDPDU TLV	Chassis ID TLV	Port ID TLV	Time To Live TLV	Port Description TLV	System Name TLV	System Description TLV	System Capability TLV	Management Address TLV	IEEE802.3 Power via MDI TLV	Fabric Attach Element TLV
✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

* Models that support PoE+ power supply will send LLDP including TLVs with the checks in the table below for PoE+ power supply even if set to “Disable”.

End Of LLDPDU TLV	Chassis ID TLV	Port ID TLV	Time To Live TLV	Port Description TLV	System Name TLV	System Description TLV	System Capability TLV	Management Address TLV	IEEE802.3 Power via MDI TLV	Fabric Attach Element TLV
✓	✓	✓	✓						✓	

Fabric Attach

[Fabric Attach authentication key]

Enter the key to be used for Fabric Attach authentication. Note that this is valid only when “LLDP” is “Enable”.

Available number of characters: 0 - 32 characters (If Fabric attach authentication is not performed, leave it blank.)

Available characters: Alphanumeric characters

Default: None (blank)

Note

- Click the [Set] button to restart the product. After restarting, the product cannot be operated for about 2 minutes, just like when the power is turned on.
- For information about devices that can be connected using Fabric Attach, refer to our support website. <https://i-pro.com/global/en/surveillance/training-support/support/technical-information>