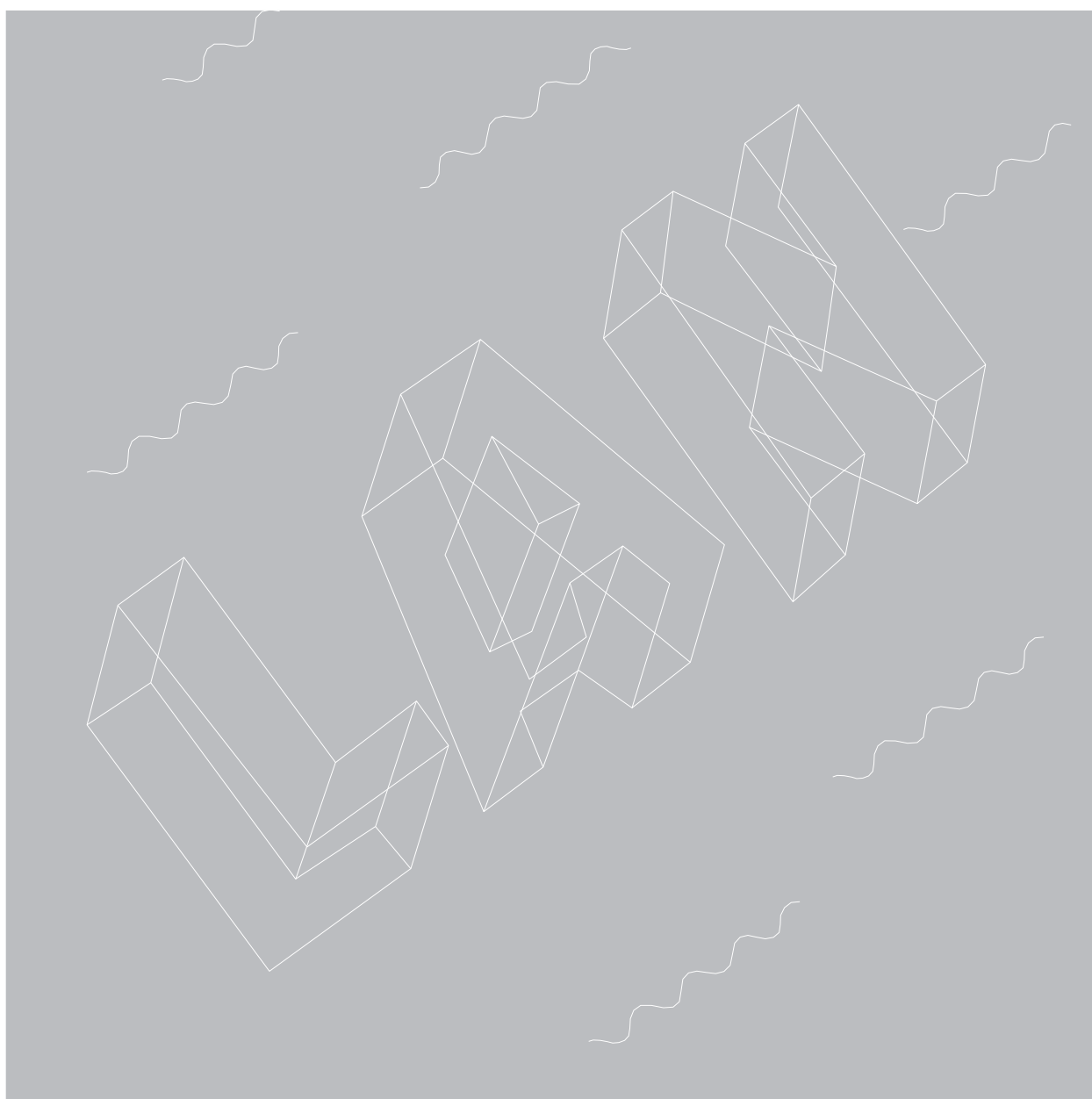# Panasonic®

| Operation Manual | ZEQUO assist Plus

- Reprinting all or part of this document without permission is prohibited.
- Be sure to read "Basic Instructions for the Use of This Product" (on page 2) before use.

Panasonic

Basic Instructions for the Use of This Product

■ Read this Operation Manual carefully before use for correct operations.

■ Disclaimers and cautions

- We assume no responsibility for any damage on you or third parties even if the use of this application causes failure or a defect on your equipment or system.

- The specifications of this application are subject to change without notice. Refer to our website for the latest version of this application.

- Check the supported part name, part number, and known compatible firmware version before use.

- Duplicating, changing, and transferring this application without permission are prohibited.

- Remodeling this application is prohibited for use.

- All or part of these disclaimers and cautions are subject to modify or change without notice.

* Company names and product names described in this document are trademarks or registered trademarks of the respective companies.

* In this document, "ZEQUO assist Plus" is called "this application."

* This document is based on the specifications of ver. 1.7.0.1.

Table of Contents

1. About ZEQUO assist Plus

ZEQUO assist Plus is a Windows application which combines operations and settings of our Switching Hub with various functions such as monitoring active devices.
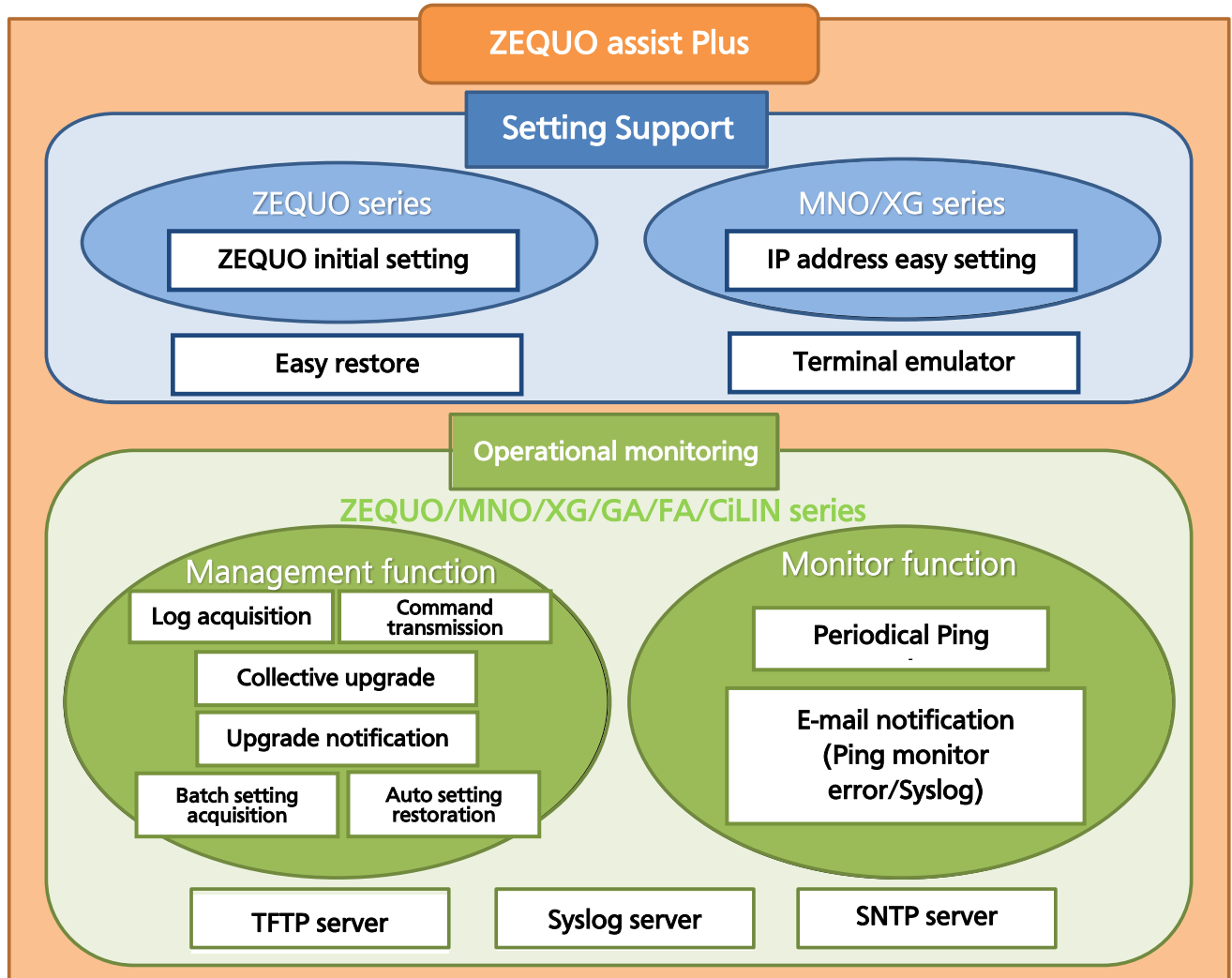
Fig. 1-1 Overview of Functions Contained in ZEQUO assist Plus

- Be sure to check supported part names and part numbers and use this application with the known compatible firmware version. (Refer to the included readme.txt)
- To operate this application, your personal computer should have **Microsoft .NET Framework 3.5 SP1 or higher and less than 4.0 installed**. If it is not installed on a personal computer with Windows 7 or earlier, you should download the installer from the following page to install it.

   Microsoft .NET Framework download page (Microsoft Corporation)
   https://dotnet.microsoft.com/en-us/download/dotnet-framework
- You cannot start multiple instances of this application (Including ZEQUO assist).
- The content, specifications, and others of this application and this document will be subject to change without notice.

1.1. Operating Environment

● Known compatible OS
- ・ Windows 7 Service Pack 1 (32-bit and 64-bit)
- ・ Windows 8.1 Service Pack 0 (32-bit and 64-bit)
- ・ Windows 10 Service Pack 0 (32-bit and 64-bit)
- ・ Windows 11

* The operational monitor function is known compatible in the following OS:
- ・ Windows Server 2008 R2 Service Pack 1
- ・ Windows Server 2012 R2 Service Pack 0
- ・ Windows Server 2016
- ・ Windows Server 2019
- ・ Windows Server 2022

● Necessary specifications
- ・ CPU: 1 GHz or more (32/64-bit)
- ・ Memory: 1 GB or more
- ・ HDD: Free space of 1 GB or more (including capacity for .NET Framework redistributable package)
- ・ Screen resolution: XGA (1024 x 768) or higher

● Others
- ・ Microsoft .NET Framework 3.5 SP1 or higher and less than 4.0
- ・ Ethernet communication port
- ・ "Console port"

● Computer port opening
To use the following functions, open the ports used by each function in the firewall settings on the personal computer.

port number	TCP/UDP	Function	Firewall settings	
			Outbound Rules	Inbound Rules
69	UDP	TFTP server function		○
123	UDP	SNTP server function		○
514	UDP	Syslog server function		○
10669	UDP	IP address easy setting function		○
10670	UDP	IP address easy setting function	○	

1.2. Supported Part Name, Part Number, and Known Compatible Firmware

For the supported part name, part number, and known compatible firmware of this application, refer to the included "readme.txt."

2. Installation and Uninstallation

2.1. Installing ZEQUO assist Plus

No installer is provided for this application. Extract the archive file in any folder (such as on the desktop).
To upgrade it, overwrite the existing folder with a new file. Upgrading from ZEQUO assist Plus can be performed by a similar operation.

Note: If a database open error occurs at the start-up due to corruption of the data that manages user authentication information, start this application after deleting the "auth.db" and "user.dat" files in the package, and re-register your user information.

* Example of extracting the file on Windows 10

ZEQUOASSISTPLUS_vxxxx_en.zip
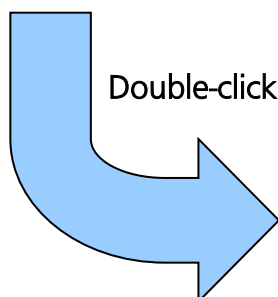
Double-click

Drag and drop it in any folder
(such as on the desktop)
and open it.
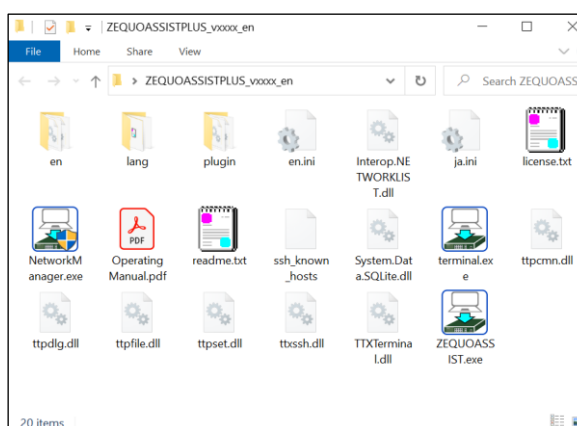
Fig. 2-1 Installing ZEQUO assist Plus

2.2. Uninstalling ZEQUO assist Plus

To uninstall this application, remove the folders and files extracted as described in the previous section 2.1. "Installing ZEQUO assist Plus." (No registry is used)
The following four administration files are newly created in the same folder. Remove them when they are not required. When planning to use this application again after uninstallation, store them in another location without removing them.

* After ZEQUO assist Plus initial start-up information is registered:
   auth.db   Login information about an acquired switch
   user.dat   Authentication information about this application

* After the operational monitor function is configured:
   NetworkManagerEquipList.xml   Device information about the operational monitor function
   NetworkManagerSettings.xml   Configuration information about the operational monitor function

3. Starting and Quitting ZEQUO assist Plus

Double-click "ZEQUO assist.exe" to start the application.

3.1. Initial Start-up

The screen shown in Fig. 3-1 appears at initial start-up. Enter a user name and password for starting this application, and press the "OK" button.
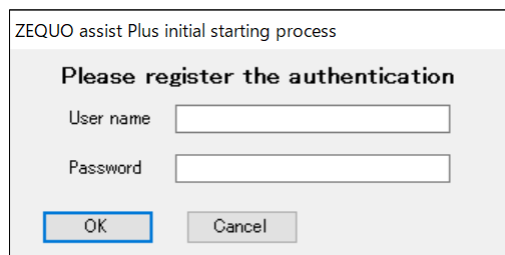

```
ZEQUO assist Plus initial starting process

Please register the authentication

User name   [                    ]

Password    [                    ]

[   OK   ]   [  Cancel  ]
```

Fig. 3-1 Initial Start-up Screen

Note: The user name and password permit the characters and the number of characters shown below.
- Available characters: One-byte alphanumeric characters [A-Z a-z 0-9]
  (case sensitive)
  One-byte symbols [@#()-+.]
- The number of available characters: Up to 12(Single-byte only).

3.2. Second or Later Start-up

The authentication screen shown in Fig. 3-2 appears at the second or later start-up. Enter the user name and password you specified at the initial start-up, and press the "OK" button.
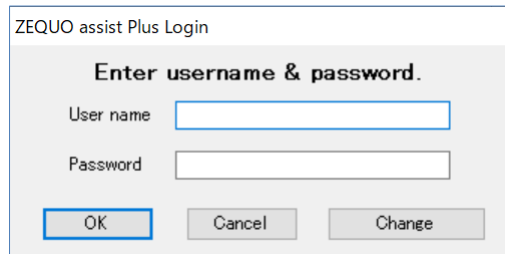
Fig. 3-2 Authentication Screen

Note: To change the user name and password, press the "Change a login information." button. (For details, refer to Section 3.3. "Changing Login Information.")

3.3. Changing Login Information

Press the "Change a login information." button on the screen shown in Fig. 3-2 to display the screen shown in Fig. 3-3. Enter the current user name and password, a new user name and password, and a password (for confirmation). Press the "OK" button.
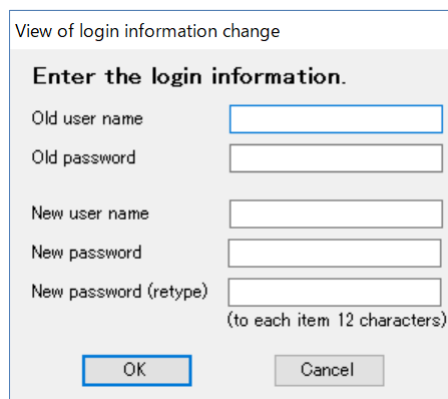
Fig. 3-3 "View of login information change."

Note: Be sure to fill in all items even when changing either the user name or password only.

3.4. ZEQUO assist Plus Launcher

After the success of the login authentication, a screen appears for selecting a function you want to operate with.

To configure our Switching Hub, press the "The ZEQUO series" or "The MNO/XG/GA/FA/CiLIN series" button in "Setting support", depending on a target part number.
To use the operational monitor function, press the "Operational monitor" button in "Operations support."
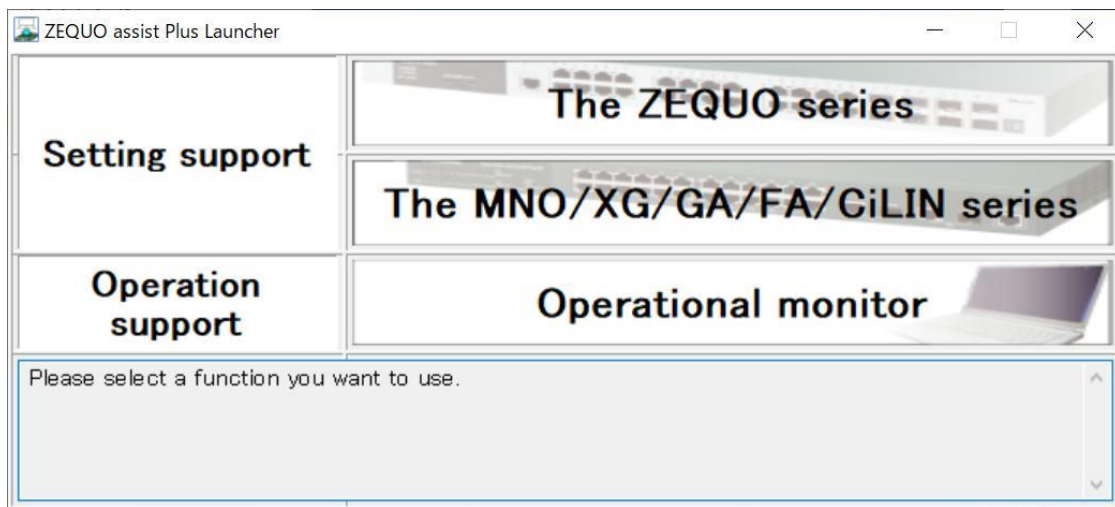
Fig. 3-4 Selecting Target Series Name

3.5. Quitting ZEQUO assist Plus

Press the "x" button in the upper right of the window to quit the application.
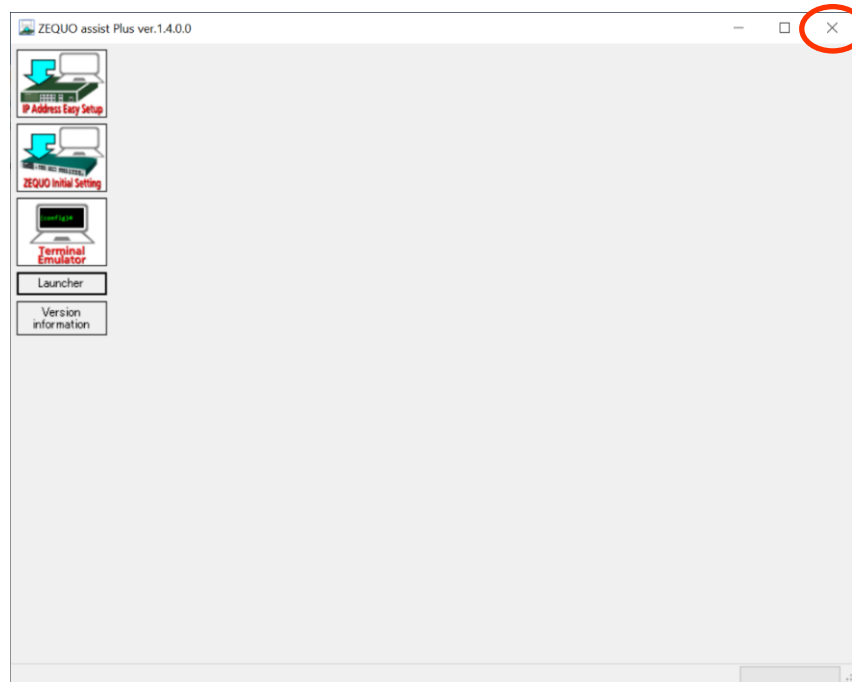
Fig. 3-5-1 Button for Quitting Application

When you try to quit the operational monitor window, the message appears confirming whether to quit the application, as shown in the figure below. When it is quit, all functions such as the monitoring, schedule, and server will stop. To continue to operate each function, press "No" to prevent quitting the application.
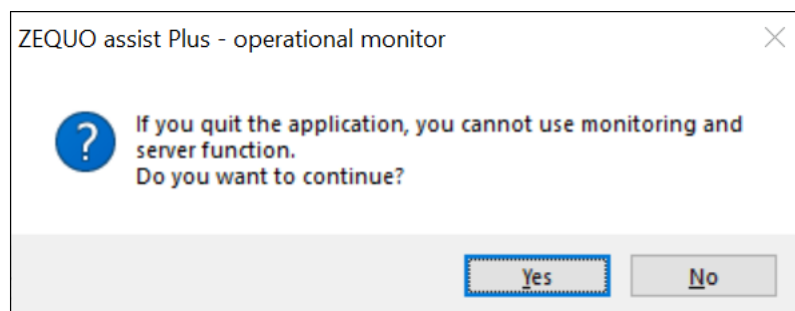
Fig. 3-5-2 Message Confirming Whether to Quit Operational Monitor Window

4. IP Address Easy Setting Function

Use the IP address easy setting function to set the IP address, switch name, etc. of a device for the ZEQUO series, MNO series orXG series Switching Hub which supports this function. You can also set a port for some part numbers.

4.1. Configuration of IP Address Easy Setting Function

For the IP address easy setting function, use an Ethernet communication port. Connect the Ethernet ports of the personal computer and Switching Hub directly, or connect the computer and Switching Hub to a TCP/IP network within a broadcast domain which does not go through an L3 switch, router, etc.
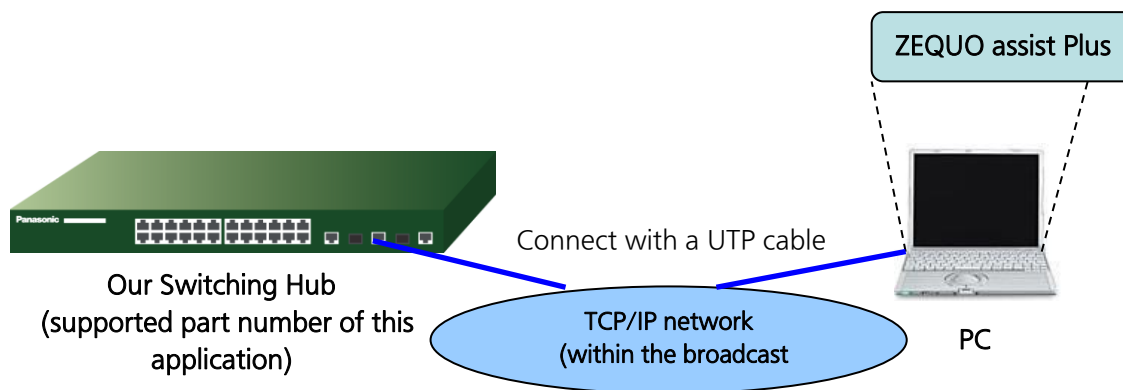
Fig. 4-1 Connection Block Diagram for IP Address Easy Setting Function

Note:
- To use this function, the personal computer should be able to access each device through an IP address easy setting protocol. The screen does not list the device which has this function disabled or does not contain it.
  For detailed setting conditions of the device, refer to "Troubleshooting" in this document.
- For the personal computer equipped with multiple network interfaces, a primary network interface is used.

4.2. Searcing for Switching Hubs and Setting IP Address

From the list on the left side of the screen, click the "IP Address Easy Setup" button to display the screen shown in Fig. 4-2-1.

Fig. 4-2-1 IP Address Easy Setting Function Screen

Press the "Search" button. This application starts searching for Switching Hubs within the broadcast domain. In a few seconds, the screen displays the list of detected Switching Hubs.

Fig. 4-2-2 IP Address Easy Setting Function Screen (after Searching for Switching Hubs)

From the list of the detected Switching Hubs, select a device that you want to configure. In the "Setting items" field in the lower part of the screen, configure "Network setting", "Switch name", and other items.

The following table describes the displayed items.

Item Name		Description
"Search"		Search for supported devices connected within the broadcast domain.
"Clear"		Clear the search result.
"CSV"		Output the CSV file of search result.
"Mode"	"Basic information"	Display the part name, MAC address, IP address, subnet mask, default gateway, and switch name of the detected device.
	"Port setting" (for S8GPWR+ and S9GPWR only)	Display the part name, MAC address, and port number (with the Auto MDI/MDI-X, MDI, EEE, and MNO series power saving mode enabled) of the detected device.
	"Version"	Display the part name, MAC address, IP address, switch name, and runtime/boot code version of the detected device.
"Only devices without IP address"		Display only devices that do not yet have an IP address setting.
"Telnet"		Start a terminal emulator for the selected device to establish a Telnet connection. It is not established for a device that does not yet have an IP address setting. Also, the device to be connected should support a Telnet server function and should be in an active state.

The following table describes the items which can be set.

Item Name		Description
"Fixed"		Set a fixed IP address to the device.
	"IP address"	Enter an IP address.
	"Subnet mask"	Enter a subnet mask.
	"Gateway"	Enter a default gateway such as a router.
"DHCP"		Get an IP address from a DHCP server.
"Host name"		Set the host name of a switch. You can enter up to 16 one-byte alphanumeric characters.

Fill in the setting items and press the "Configure" button to display the confirmation screen shown in Fig. 4-2-3. Press "Yes" to configure the settings and "No" to cancel them.
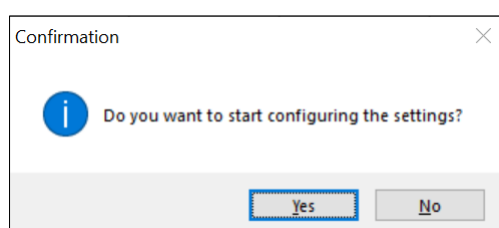
Fig. 4-2-3 Screen for IP Address Easy Setting
(Message Confirming Configuration of Settings)

After the settings are reflected into the device correctly, the message shown in Fig. 4-2-4 appears indicating the completion of the settings. If an error message appears, you should search for them again or check the network.
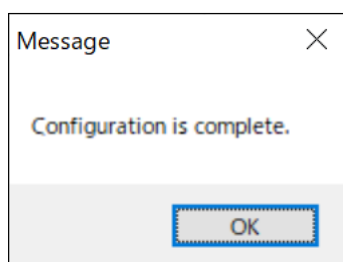
Fig. 4-2-4 IP Address Easy Setting Screen
(Message Indicating Completion of Settings)

You have now completed the settings about the IP address easy setting function. For how to set and operate other functions, refer to the operation manual (for menu screens) of each device.

Note:
● Avoid removing the cable and turning off the device during the configuration of the settings.
● The http server function of eG/eGi series, FA-ML series, XG series and GA-EMR48TPoE+ will be automatically enabled when setting IP address using IP address easy setting function. Please refer to the Manual CLI on our home page to disable the http server function.
● The set IP address and switch name are automatically saved.
● To use this function, the personal computer should be able to access each device through an IP address easy setting protocol. (The device should have at least the IP address easy setting function enabled. The screen does not display the device which has this function disabled or does not contain it)
For detailed setting conditions of the device, refer to "Troubleshooting" in this document.

4.3. Advanced Settings for Specific Part Numbers

For the specific part numbers below, you can upgrade the firmware, configure basic settings of a port, and initialize settings, in addition to the typical setting of an IP address.

Target product: Part name (part number)
- Switch-S8GPWR+ (PN24089)
- Switch-S9GPWR (PN24099)

Select a supported device in the list after devices are searched, and new items appear in the "Setting items" field, as shown in Fig. 4-3-1.
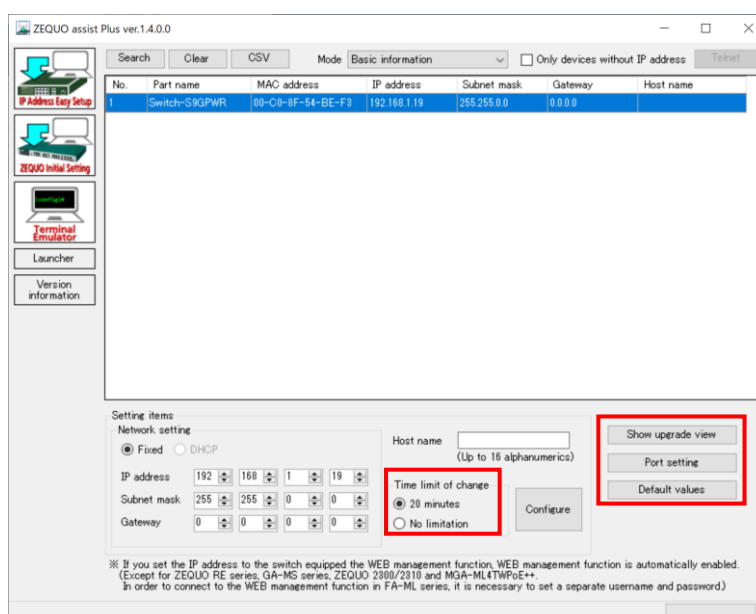
Fig. 4-3-1 IP Address Easy Setting Screen
(When Selecting Switch-S9GPWR)

The following table describes each item.

Item Name	Description	
"Time limit of change"	Set an action for accepting configuration changes from this application for non-default settings of the device. (* Devices can be always detected regardless of this setting)	
	"20 minutes"	Configuration changes cannot be accepted after an elapse of 20 minutes since start-up with this setting selected. (factory default)
	"No limitation"	Configuration changes can be always accepted.
"Show upgrade view"	Show the upgrade view of the firmware.	
"Port setting"	Show the port setting screen.	
"Default values"	Clear all settings and return to the factory setting.	

Port Setting

Press the "Port setting" button in Fig. 4-3-1 to display the port setting screen shown in Fig. 4-3-2.

Fig. 4-3-2 Port Setting Screen

The following table describes the displayed items.

Item Name	Description	
"Setting items"	Select a setting that you want to change.	
"Auto MDI/MDI-X"	Set Auto MDI/MDI-X.	
	"Auto"	Enable Auto MDI/MDI-X. The factory default setting is as follows: ・ Switch-S8GPWR+: Ports 9 through 10 ・ Switch-S9GPWR: Port 10
	"MDI-X"	Fix the port to MDI-X. The factory default setting is as follows: ・ Switch-S8GPWR+: Ports 1 through 8 ・ Switch-S9GPWR: Ports 1 through 9
	"MDI"	Fix the port to MDI. You can set this for the following uplink ports only. ・ Switch-S8GPWR+: Ports 9 through 10 ・ Switch-S9GPWR: Port 10
"The MNO series Power-saving mode"	Set the MNO series power-saving mode.	
	"Enable"	Enable the MNO series power-saving mode. (factory default)
	"Disable"	Disable the MNO series power-saving mode.
"Energy-Efficient Ethernet (IEEE802.3az / EEE)"	Set the Energy-Efficient Ethernet. (You can change this for the ports 1 through 8 only)	
	"Enable"	Enable the Energy-Efficient Ethernet. (factory default)
	"Disable"	Disable the Energy-Efficient Ethernet.
"Return the settings before the change"	Return the display of the settings to the state before they are changed.	
"Setting"	Execute the setting.	
"Close"	Close the port setting screen without changing the setting.	

Note:
● Avoid removing the cable and turning off the device during the configuration of the settings.

Upgrading

Press the "Show upgrade view" button in Fig. 4-3-1 to display "Upgrade view" shown in Fig. 4-3-3. On this screen, you can upgrade the firmware through a TFTP server.

Fig. 4-3-3 "Upgrade view"

The following table describes each item.

Item Name	Description
"TFTP server address"	Enter the IP address of a target TFTP server. The default value is the IP address of the personal computer. Specify an appropriate IP address.
"File name on TFTP server"	Enter the name of a file on the TFTP server to be upgraded.
"Run the upgrade"	Run the upgrade. The device will be automatically reboot after the upgrade is completed. **Never turn off the device until seeing the message indicating the completion of the upgrade.**
"Close"	Close this screen without upgrading the firmware.

Note:
- Avoid removing the cable and turning off the device during the configuration of the settings.

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Return to Factory Setting

Using the "Default values" button in Fig. 4-3-1 enables you to return the setting of the device to the factory default setting.
Press the "Default values" button to display the confirmation message shown in Fig. 4-3-4. Press "OK" to continue to execute it or "Cancel" to cancel it.
(The factory default setting will take effect immediately. You do not need to turn off and on the device.)
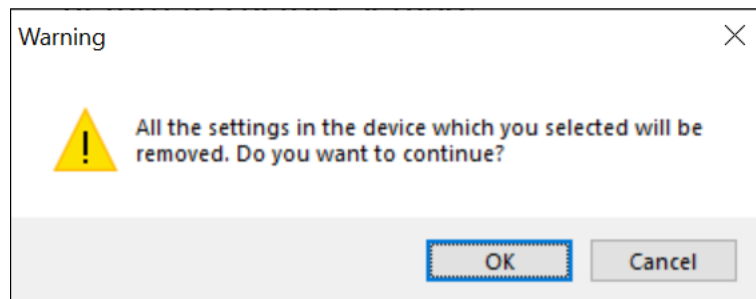
Fig. 4-3-4 Screen Confirming Whether to Return to Factory Default Setting

Target product: Part name (part number)

  - Panasonic Wireless AP WINDIO

Select a supported device in the list after devices are searched, and new items appear in the "Setting items" field, as shown in Fig. 4-3-5.If WINDIO exist, CSV have this column.
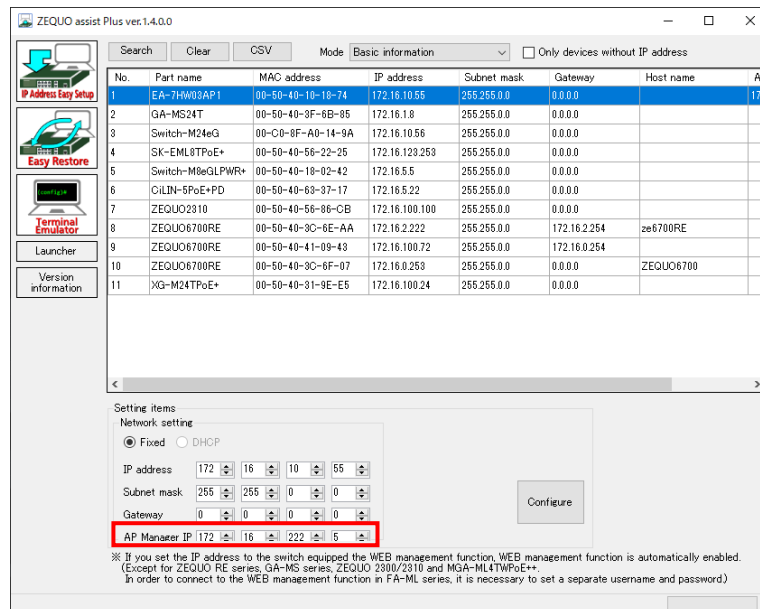
Fig. 4-3-5 IP Address Easy Setting Screen
(When Selecting WINDIO)

The following table describes each item.

Item Name	Description
"AP Manager IP"	Set manager IP of WINDIO.

5. ZEQUO Initial Setting Function

This function provides intuitive settings with GUI through the application of the ZEQUO series which only supports the command settings by using the CLI. You can configure basic settings such as an IP address, VLAN, and port.

5.1. Configuration of ZEQUO Initial Setting Function

To execute the ZEQUO initial setting function, use the <u>console port on the personal computer</u> and the <u>RJ45-Dsub9 pin</u>.
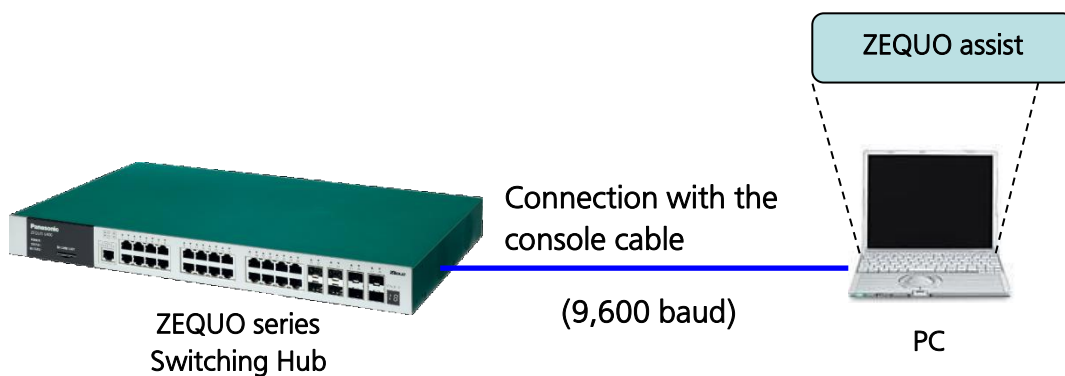
Fig. 5-1 Connection Block Diagram for ZEQUO Initial Setting Function

Note:
- To use this function, you should have the console cable and the personal computer equipped with the console port.
- The baud rate of the target ZEQUO should be the factory default setting of 9,600 baud.

5.2. Configuration of ZEQUO Initial Setting Screen

After selecting "The ZEQUO series" as described in Section 3.4., click the "ZEQUO Initial Setting" button from the list on the left side of the screen. The screen shown in Fig. 5-2-1 appears.
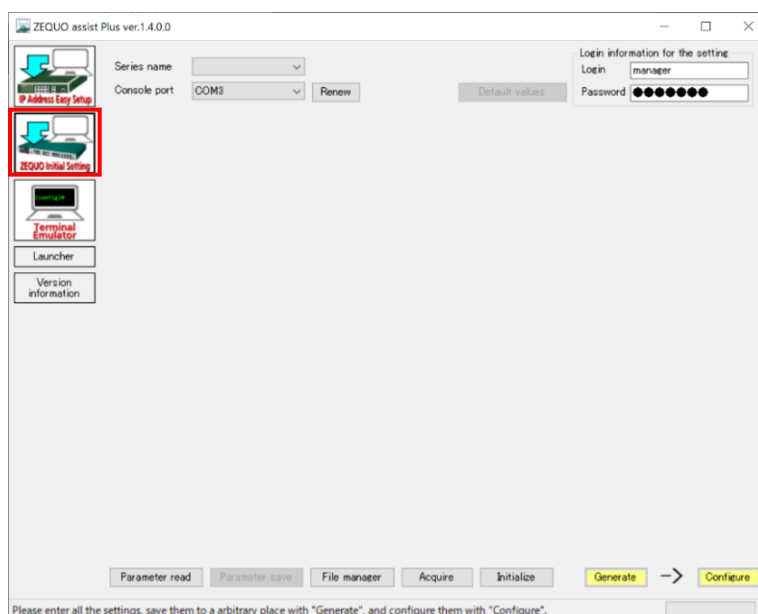
Fig. 5-2-1 ZEQUO Initial Setting Screen

In "Series name", select the part name of the target ZEQUO. The setting input screen appears as shown in Fig. 5-2-2.
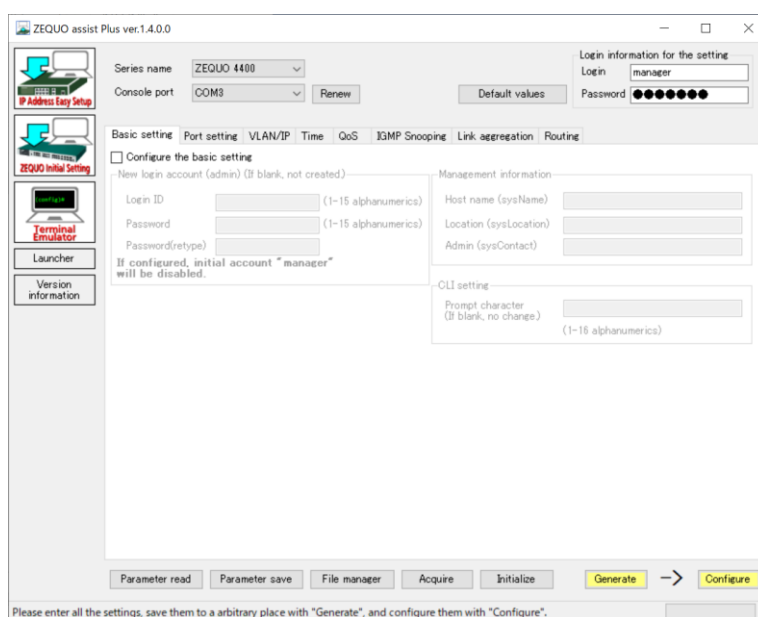
Fig. 5-2-2 ZEQUO Initial Setting Screen (after Selecting Target Part Name)

The following table describes the displayed items.

Item Name	Description
"Series name"	Select the part name of ZEQUO to be configured. Select this item, and the setting input field appears.
"Console port"	Select a console port connected to ZEQUO. If console port numbers are not listed, the personal computer does not contain a console port or identify it.
"Renew" button	Get the list of console ports again.
"Default values" button	Clear all the input setting values on the screen and return the application to the state immediately after it is started.
"Login information for the setting" field	Enter a login name and login password for ZEQUO operations. The login name and password are both "manager" in the ZEQUO factory default setting, and the default value of this field is also "manager." You do not have to change this value unless you change any setting.

Setting input field	Each of the following setting items is assigned to each tab. For details of each setting item, refer to Section 5.3.
	   - Basic setting
	   - Port setting
	   - VLAN/IP address setting
	   - Time setting
	   - QoS setting
	   - IGMP Snooping setting
	   - Link aggregation setting
	   - Routing setting

"Parameter read" button	Read a configuration parameter from a file. For details, refer to Section 5.3.14.
"Parameter save" button	Save a configuration parameter in a file. For details, refer to Section 5.3.14.
"File manager" button	Show the file management screen of ZEQUO and SD card. For details, refer to Section 5.3.11.
"Acquire" button	Acquire the current settings of ZEQUO connected to the console port. For details, refer to Section 5.3.12.
"Initialize" button	Initialize the settings of ZEQUO connected to the console port. For details, refer to Section 5.3.13.
"Generate" button	Create and save a configuration file, based on input values in the setting input field. For details, refer to Section 5.3.9.
"Configure" button	Configure the actual settings for ZEQUO connected to the console port, based on a configuration file. For details, refer to Section 5.3.10.

5.3. Setting Method

Below is a procedure for ZEQUO initial settings.
1. Select a target part name and console port.
2. Fill in items in the setting input field.
3. Use the "Generate the settings" button to generate settings and save a configuration file.
4. Use the "Configure the settings" button to select a target file and configure the settings.

5.3.1. Basic Setting

Set the login account and management information on the following screen.

Fig. 5-3-1 Basic Setting Screen

The following table describes the displayed items.

Item Name	Description
"Configure the basic setting"	Target this setting item.
"Login ID"	Enter a login ID for a new login account as one through 15 alphanumeric characters.
"Password" "Password(retype)"	Enter a login password for a new login account as one through 15 alphanumeric characters. Enter the same password in the "Reentry the password" field for confirmation.
"Host name (sysName)"	Enter the name of a switch (host name) as 0 through 255 alphanumeric characters.
"Location (sysLocation)"	Enter a location for installing a switch as 0 through 255 alphanumeric characters.
"Admin (sysContact)"	Enter the administrator name of a switch as 0 through 255 alphanumeric characters.
"Prompt character (If blank, no change.)"	Enter prompt characters displayed on the CLI screen of a switch as one through 16 alphanumeric characters.

Note:
● Setting a new login account will disable the factory default "manager" account.
  If the "manager" account has been set in the "Login information for the setting",
  it will also be disabled and will not be able to set a second time or later.
  Therefore, when you set a new login account, please update the "Login information for the
  setting" to .the new login accounts.

5.3.2. Port Setting

Set the port on the following screen.
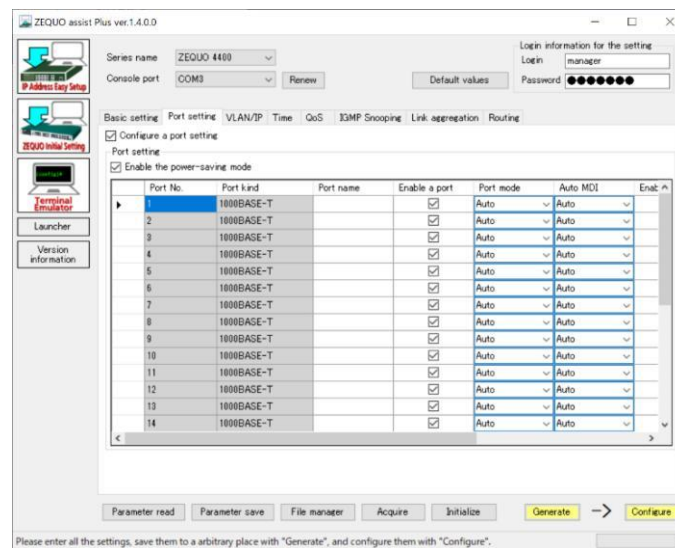
Fig. 5-3-2 Port Setting Screen

The following table describes the displayed items.

Item Name	Description	
"Configure a port setting"	Target this setting item. Selecting this box enables you to enter a setting value.	
"Enable the power-saving mode"	Enable the power-saving mode. This can reduce the electric power consumption of non-connected ports. (factory default: enabled)	
"Port No."	Show a port number.	
"Port kind"	Show the kind of a port.	
	"1000BASE-T"	Represent the UTP port of 1000BASE-T.
	"1000BASE-T/X"	Represent the combo port of 1000BASE-T and 1000BASE-X.
	"10GBASE-X"	Represent the SFP+ port supporting 1000BASE-X and 10GBASE-X.
"Port name"	Enter any name for each port as 0 through 32 alphanumeric characters.	
"Enable a port"	Enable a port and allow linking up.	
"Port mode"	Set the connection mode of a port. You cannot change it for optical communication ports.	
	"Auto"	Enable auto negotiation.
	"10M-Half"	Fix the port mode to 10M-Half to establish a connection.
	"10M-Full"	Fix the port mode to 10M-Full to establish a connection.
	"100M-Half"	Fix the port mode to 100M-Half to establish a connection.
	"100M-Full"	Fix the port mode to 100M-Full to establish a connection.
"Auto MDI"	Set the action of Auto MDI/MDI-X. You cannot change it for optical communication ports.	
	"Auto"	Enable Auto MDI/MDI-X.
	"MDI"	Use MDI to establish a connection.
	"MDI-X"	Use MDI-X to establish a connection.
"Enable a jumbo frame"	Enable a jumbo frame. This allows the transfer of a frame exceeding 1,518 bytes. (factory default: disabled)	
"Enable the flow control"	Enable the flow control. (factory default: disabled)	
"Enable EEE" (for ZEQUO 2200/2210 only)	Enable EEE (Energy-Efficient Ethernet). When "Port mode" is not set to "Auto", disable this setting. (factory default: enabled)	

5.3.3. VLAN/IP Address Setting

Set the VLAN and IP address on the following screen. The setting items depend on a selected part name.
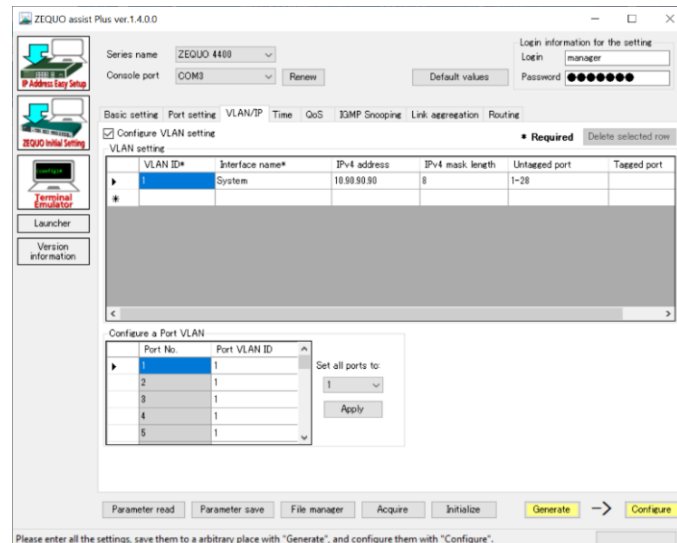
Fig. 5-3-3 VLAN/IP Address Setting Screen

The following table describes the displayed items.

For ZEQUO 6500/6400/4400

Item Name	Description
"Configure VLAN setting"	Target this setting item. Selecting this box enables you to enter a setting value.
"Delete selected row"	Delete a selected row. You cannot delete VLAN 1.
"VLAN ID"	Enter a VLAN ID to be created in the range of one to 4094. (required)
"Interface name"	Enter any name of the interface. (required)
"IPv4 address"	Enter an IPv4 address to be assigned to the interface.
"IPv4 mask length"	Enter the mask length of the IPv4 address in the range of three to 31.
"Untagged port" "Tagged port"	Enter each port number belonging to VLAN. Using a comma (,) and hyphen (-) enables you to specify the range of port numbers. (example: 1,3,5-12)
"Port No."	Represent a port number.
"Port VLAN ID"	Specify the VLAN ID of a destination when a target port receives an untagged frame. (factory default: 1 for all ports) You can enter only the VALAN ID defined in the VLAN setting.
"Set all ports to"	Collectively apply the selected Port VLAN IDs to all ports. You can only select the VLAN IDs defined in the VLAN setting.

For ZEQUO 2200/2210/2400

Item Name	Description
"Configure VLAN setting"	Target this setting item. Selecting this box enables you to enter a setting value.
"Delete selected row"	Delete a selected row. You cannot delete VLAN 1.
"VLAN ID"	Enter a VLAN ID to be created in the range of one to 4094. (required)
"Untagged port" "Tagged port"	Enter each port number belonging to VLAN. Using a comma (,) and hyphen (-) enables you to specify the range of port numbers. (example: 1,3,5-12)
"Port No."	Represent a port number.
"Port VLAN ID"	Specify the VLAN ID of a destination when a target port receives an untagged frame. (factory default: 1 for all ports) You can enter only the VALAN ID defined in the VLAN setting.
"Set all ports to"	Collectively apply the selected Port VLAN IDs to all ports. You can only select the VLAN IDs defined in the VLAN setting.
"IP address setting of system interface"	Set the IP address of a switch.
"Enable IP address" / "Disable IP address"	Select whether to set the IP address.
"Target VLAN ID"	Select a VLAN ID to which the IP address is assigned.
"IPv4 address"	Enter an IPv4 address.
"IPv4 mask length"	Enter the mask length of the IPv4 address in the range of one to 31.
"Default gateway"	Enter the IP address of a default gateway.

5.3.4. Time Setting

Set the time through SNTP or manually on the following screen.
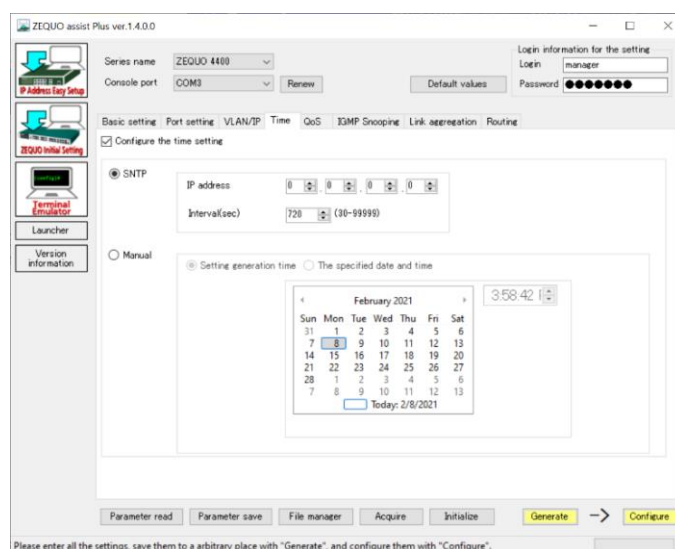
Fig. 5-3-4 Time Setting Screen

The following table describes the displayed items.

Item Name	Description
"Configure the time setting"	Target this setting item. Selecting this box enables you to enter a setting value.
"SNTP"	Use the SNTP server to synchronize the time.
"IP address"	Enter the IP address of the SNTP server.
"Interval"	Enter the interval of querying the SNTP server in the range of 30 to 99999 seconds. (factory default: 720 seconds)
"Manual"	Set the time manually.
"Setting generation time"	Set time of day based on the time on the personal computer when "Generate the settings" is pressed.
"The specified date and time"	Set any date and time.

5.3.5. QoS Setting

Set QoS on the following screen.
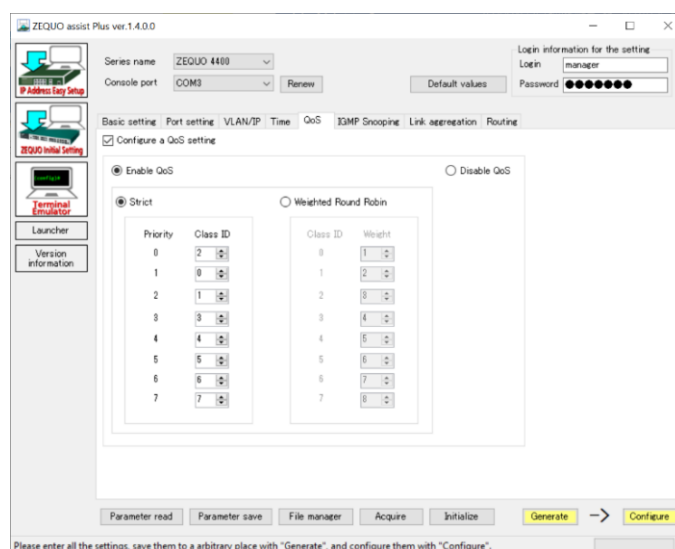
Fig. 5-3-5 QoS Setting Screen

The following table describes the displayed items.

Item Name	Description
"Configure a QoS setting"	Target this setting item. Selecting this box enables you to enter a setting value.
"Enable QoS"	Enable QoS actions.
"Strict"	Set the QoS scheduling method to Strict Priority Queuing (SPQ).
"Priority"	Represent a priority within the VLAN frame.
"Class ID"	Enter the Class ID of a queue to be assigned in the range of 0 to seven. A larger value represents a higher priority.
"Weighted Round Robin"	Set the QoS scheduling method to Weighted Round Robin (WRR).
"Class ID"	Represent the Class ID of a target.
"Weight"	Enter the weighting of a Class used for WRR in the range of one to 127. A larger value represents a higher priority.
"Disable QoS"	Set the same Class ID for all priority values and disable QoS prioritized control actions.

5.3.6. IGMP Snooping Setting

Set IGMP Snooping and IGMP Querier on the following screen.
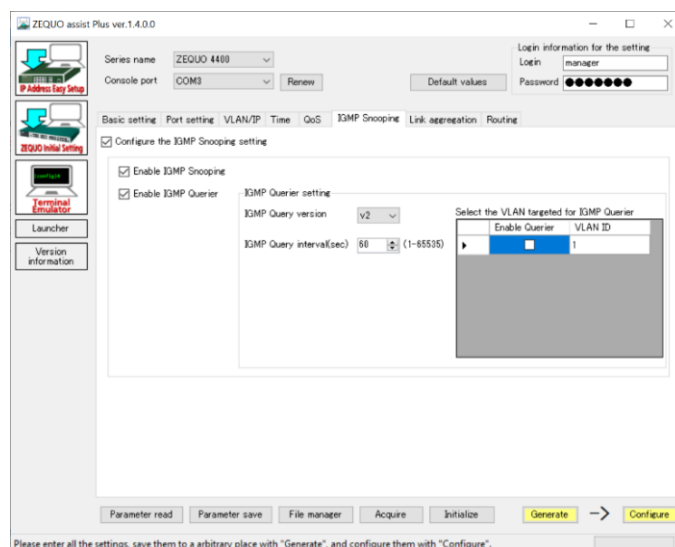
Fig. 5-3-6 IGMP Snooping Setting Screen

The following table describes the displayed items.

Item Name	Description
"Configure the IGMP Snooping setting."	Target this setting item. Selecting this box enables you to enter a setting value.
"Enable IGMP Snooping"	Enable IGMP Snooping.
"Enable Multicast filtering" (for ZEQUO 2200/2210/2400 only)	Enable the multicast filtering function. When it is enabled, multicast data will be transferred to only a member port of IGMP.
"Enable IGMP Querier"	Enable IGMP Querier.
"IGMP Query version"	Select the version of IGMP Query to be sent. (recommended value: v2)
"IGMP Query interval (sec)"	Enter the IGMP Query transmission interval in the range of one to 65535 seconds. (factory default: 60 seconds)
"Enable Querier"	Enable to send IGMP Query to VLAN.
"VLAN ID"	Select a VLAN ID to be sent. Create necessary VLAN in the VLAN setting in advance.

5.3.7. Link Aggregation Setting

Set the link aggregation on the following screen.
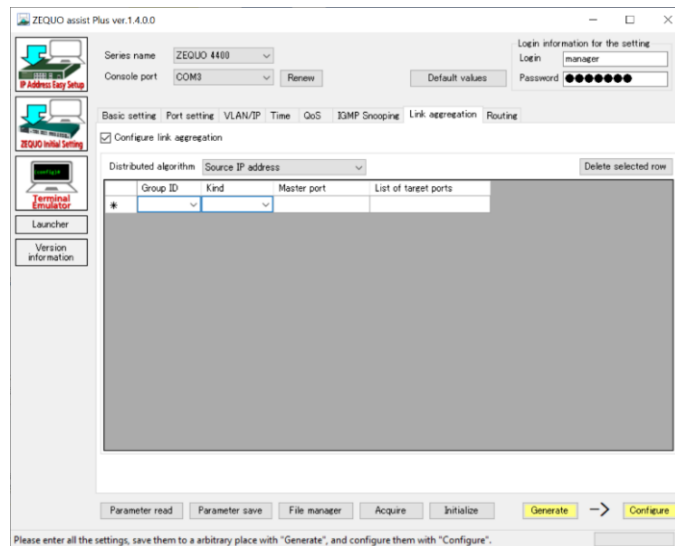
Fig. 5-3-7 Link Aggregation Setting Screen

The following table describes the displayed items.

Item Name	Description	
"Configure link aggregation"	Target this setting item. Selecting this box enables you to enter a setting value.	
"Distributed algorithm"	Select an algorithm for distributing traffic to ports within a group (Initial setting: Sender IP address).	
"Delete selected row"	Delete a selected row.	
"Group ID"	Select the group ID of a link aggregation in the range of one to 32.	
"Kind"	Select the kind of a link aggregation.	
	"Static"	Specify an aggregation port manually.
	"LACP"	Use LACP to dynamically decide an aggregation port. (Active)
"Master port"	Specify a physical port which is the basis of a port setting applied to all logical ports. You can specify only one port to the master port.	
"List of target ports"	Enter a port number belonging to a group. This should contain the master port. Using a comma (,) and hyphen (-) enables you to specify the range of port numbers. (example: 1,3,5-12)	

5.3.8. Static Routing Setting (Except ZEQUO 2200/2210/2400)

Set the Static routing on the following screen.
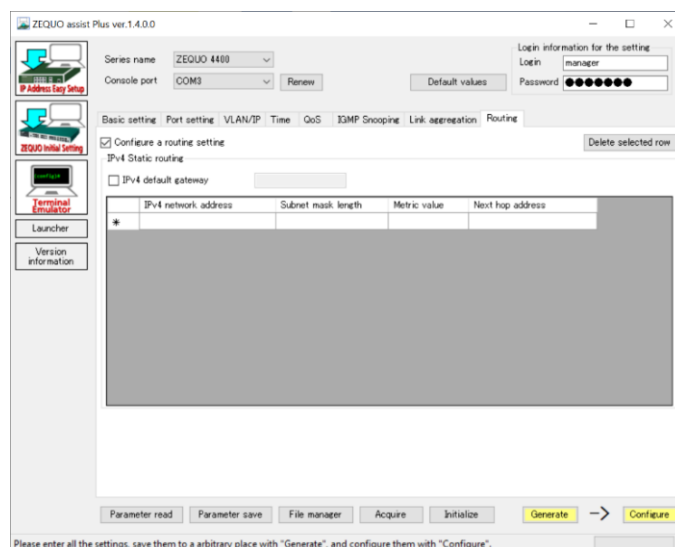
Fig. 5-3-8 Static Routing Setting Screen

The following table describes the displayed items.

Item Name	Description
"Configure a routing setting."	Target this setting item. Selecting this box enables you to enter a setting value.
"IPv4 default gateway"	Enter a default gateway. (It is equivalent to 0.0.0.0/0)
"Delete selected row"	Delete a selected row.
"IPv4 network address"	Enter a network address to be routed.
"Subnet mask length"	Enter the subnet mask length of the network address in the range of 0 to 32.
"Metric value"	Enter a metric value in the range of one to 65535.
"Next hop address"	Enter the IP address of a router or other devices in a destination.

5.3.9. Generating Configuration File

Press the "Generate the settings" button after all the entries. The screen displays the generated configuration commands as shown in Fig. 5-3-9. In "File (&F)", select "Save as (&A)" to save the configuration commands in any location on the personal computer. An incorrect input value causes an error. Modify it to the correct value and press the "Generate the settings" button again.
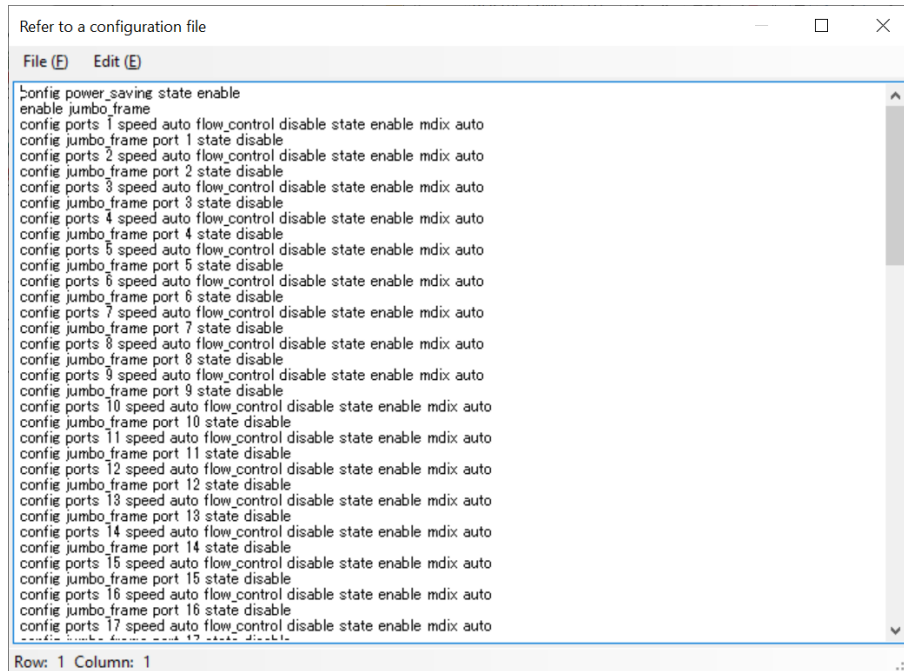
Fig. 5-3-9 Screen after Generating Settings

5.3.10. Configuring Settings

Press the "Configure the settings" button after all the entries. A screen appears confirming whether to configure the settings, as shown in Fig. 5-3-10-1. Continue to select "Yes" and choose a location to save the target file that contains the configuration to be performed. (When continuing from 5.3.9, select the location to save the target file saved in 5.3.9.)

When the correct configuration file is selected, the application will initialize the settings and apply them through the console port. After they are completed, a completion message appears as shown in Fig. 5-3-10-2.
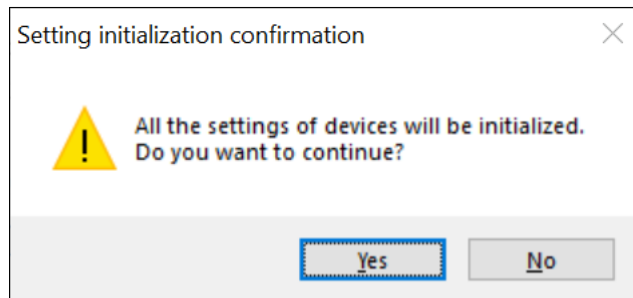
Fig. 5-3-10-1 Screen for Confirming Whether to Configure Settings
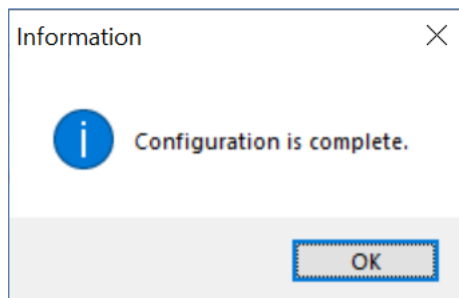
Fig. 5-3-10-2 Message Indicating Completion of Settings

5.3.11. File Management

Press the "File manager" button to display the "View of ZEQUO file management" screen shown in Fig. 5-3-11. On this screen, you can copy or delete files saved in the ZEQUO body and SD card as well as manage the firmware and configuration file used at start-up.

A file with a name beginning with "*" indicates the firmware for boot, and a file with a name beginning with "#" indicates the configuration file for boot. You cannot rename and delete such files.
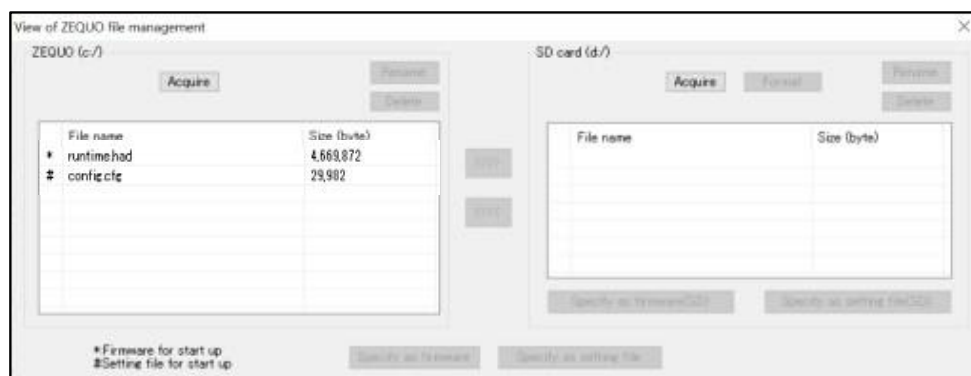
Fig. 5-3-11 "View of ZEQUO file management." Screen

Note:
● Files with spaces in the file name cannot be displayed on the "View of ZEQUO file management" screen.

The following table describes the displayed items.

Item Name	Description
"Acquire"	Acquire the list of files contained in the ZEQUO body or SD card. To do that, you should select a correct option in "Console port" on the ZEQUO initial setting screen.
"Rename"	Rename a selected file. Enter a new name on a separately displayed rename screen, and press "OK."
"Delete"	Delete the selected file. Once deleted, it cannot be restored.
"Format"	Initialize the SD card. To use a new SD card, be sure to execute this operation. **Executing the format operation will delete all data contained in the SD card. Note that you cannot restore the deleted data.**
>>>>	Copy files contained in the ZEQUO body to the SD card. If the destination ZEQUO body has the same file, an error occurs.
<<<<	Copy files contained in the SD card to the ZEQUO body. If the destination SD card has the same file, an error occurs.
"Specify as firmware (SD)"	Rename the selected file to "sd_runtime.rom" and specify it as the firmware used at the boot of a switch. By inserting the SD card containing this file before booting the switch, you can use the firmware of this file to boot it.
"Specify as setting file (SD)"	Rename the selected file to "sd_config.cfg" and specify it as the configuration file used at the boot of a switch. By inserting the SD card containing this file before booting the switch, you can use the configuration of this file to boot it.
"Specify as firmware"	Specify the selected file as the firmware at the boot of a switch. When the SD card contains "sd_runtime.rom" at the boot of the switch, reading the selected file will take priority.
"Specify as setting file"	Specify the selected file as the configuration file at the boot of a switch. When the SD card contains "sd_config.cfg" at the boot of the switch, reading the selected file will take priority.

5.3.12. Acquiring Settings

This function can acquire the current configuration information of a switch and save it to the personal computer.

Press the "Acquire" button to display the screen for selecting a setting acquisition method, as shown in Fig. 5-3-12-1.

Press "Yes" to acquire only changed factory default settings or "No" to acquire all settings.
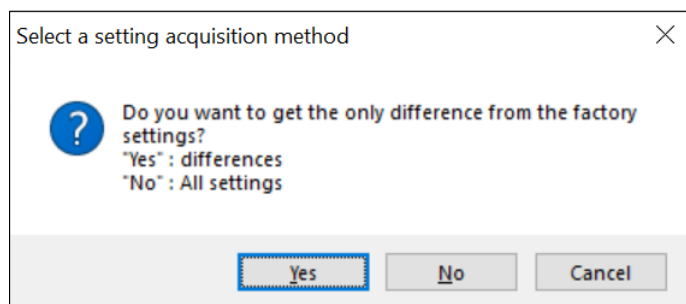
Fig. 5-3-12-1 Screen for Confirming Setting Acquisition Method

Press "Yes" or "No", and the application will start the acquisition process of configuration information and display a screen indicating its progress as shown in Fig. 5-3-12-2.
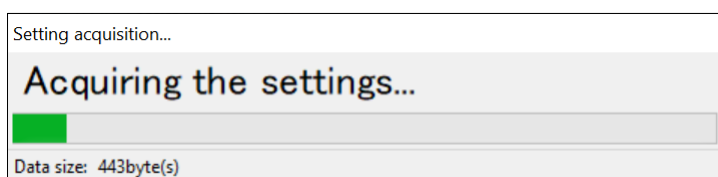
Fig. 5-3-12-2 Screen Indicating Progress of Setting Acquisition

After the completion of the acquisition process, a screen appears confirming the acquisition result, as shown in Fig. 5-3-12-3. You can save that result by selecting "File (&F)" -> "Save as (&A)."
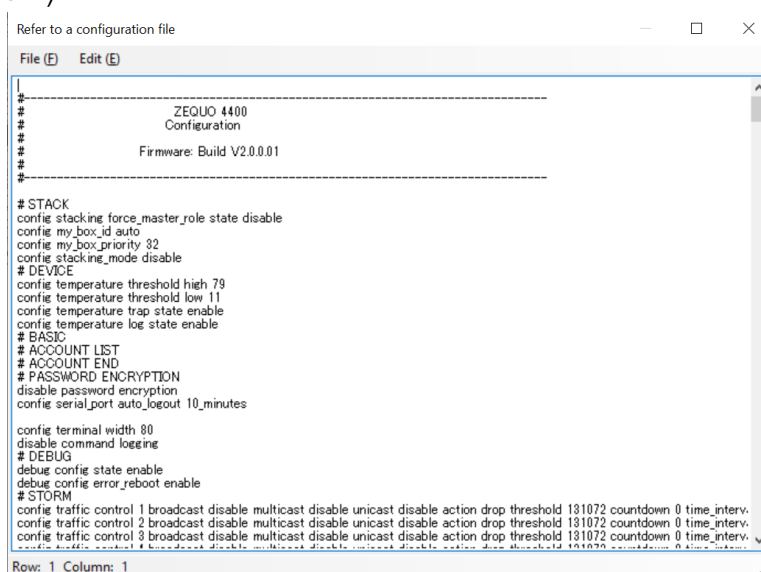
Fig. 5-3-12-3 Screen for Confirming Acquisition Result

5.3.13. Initializing Settings

This function can initialize the settings of a switch.
Press the "Initialize" button to display the screen for confirming whether to initialize the settings, as shown in Fig. 5-3-13-1.
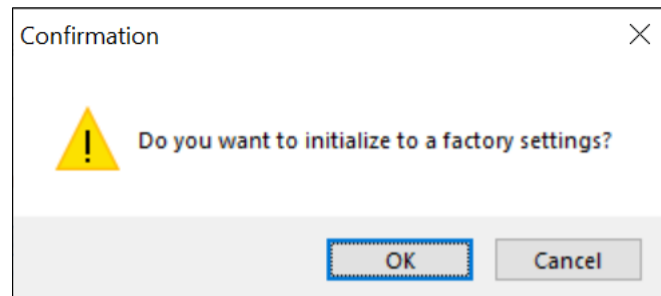
Fig. 5-3-13-1 Screen for Confirming Whether to Initialize Settings

Press "OK" to display the screen for confirming whether to reboot the device after the initialization, as shown in Fig. 5-3-13-2. Select "Yes" to reboot it or "No" to avoid rebooting it.
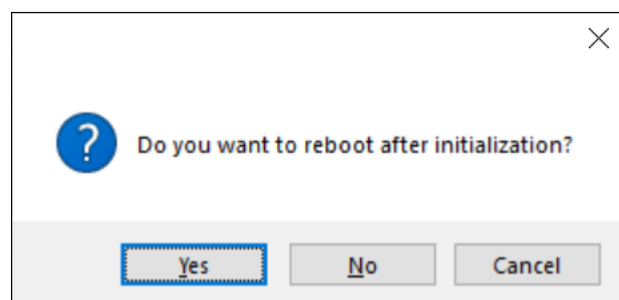
Fig. 5-3-13-2 Screen for Confirming Reboot after Initialization

After the initialization is completed, the completion messages shown in Fig. 5-3-13-3 appear depending on whether the device is reboot.
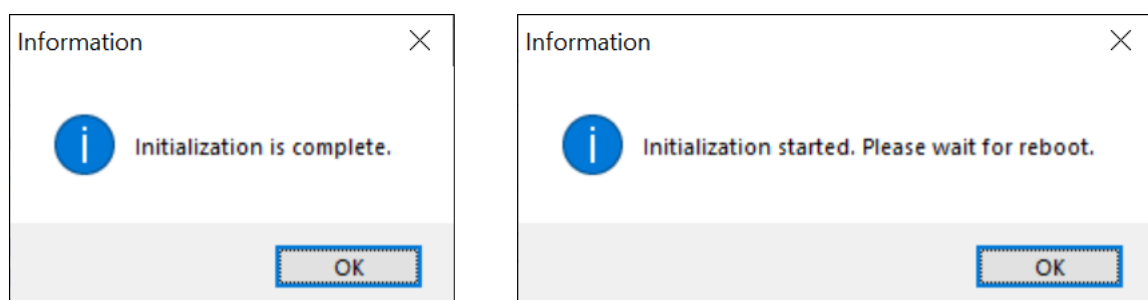
Fig. 5-3-13-3 Screen Indicating Completion of Initialization

5.3.14. Saving/Reading Configuration Parameter

This function can save and read an active configuration parameter.
Press the "Parameter save" button to display the screen where you can set a location for saving a configuration parameter, as shown in Fig. 5-3-14-1. You can save the active configuration parameter to a file by entering the location and pressing "OK."
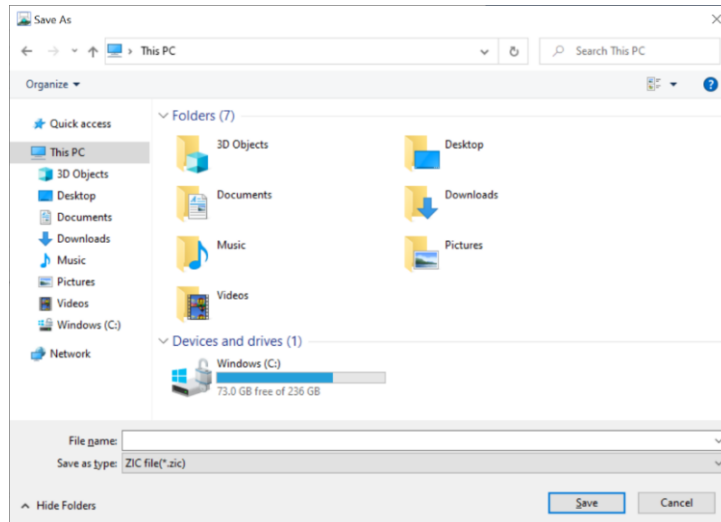
Fig. 5-3-14-1 Screen for Saving Configuration Parameter

Press the "Parameter read" button to display the screen where you can select a file storing the configuration parameter, as shown in Fig. 5-3-14-2. You can read the active configuration parameter by specifying the file and pressing "OK."
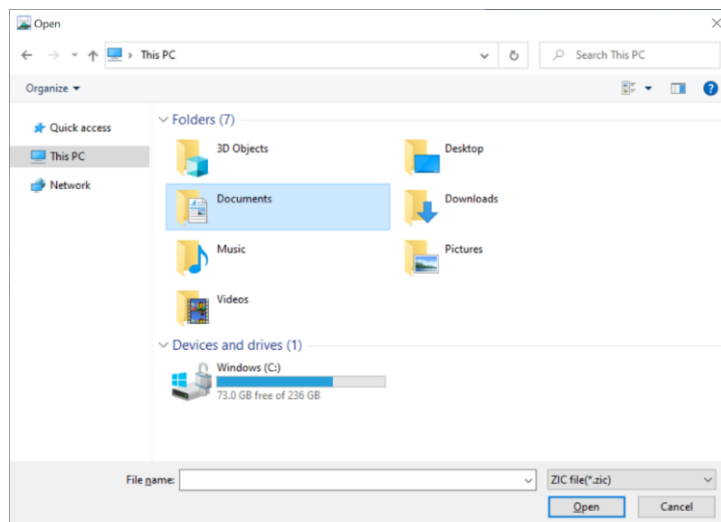
Fig. 5-3-14-2 Screen for Reading Configuration Parameter

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6. Easy Restore Function

This function acquires and restores configuration information of the MNO series and XG series Switching Hub.

6.1. Configuration for Using Easy Restore Function

To execute the easy restore function, use the <u>console port on the personal computer</u> or the <u>RJ45-Dsub9 pin</u>.
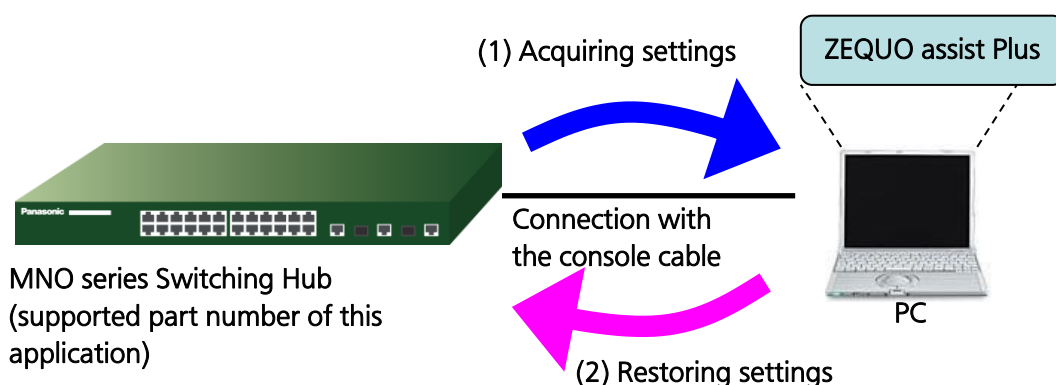
Fig. 6-1-1 Connection Block Diagram (through Console)
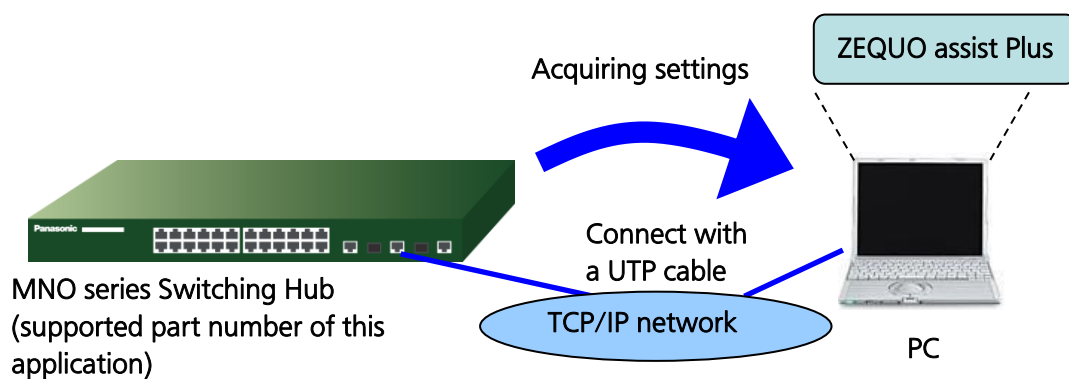
Fig. 6-1-2 Connection Block Diagram (through network)

Note:
● To restore settings, you can use only a file of configuration information acquired by this application. Before restoring them, use this application to acquire configuration information.
● Settings cannot be restored in the device with the firmware version older than that of the device where they were acquired.
● The settings of a device cannot be restored through the network. To restore them, connect the console cable.

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6.2. Configuration of Easy Restore Screen

After selecting "The MNO/XG/GA/FA/CiLIN series" as described in Section 3.4., click the "Easy Restore" button from the list on the left side of the screen. Then, a screen appears as shown in Fig. 6-2-1. By selecting each tab in the upper part of the screen, you can switch to "Acquire the settings" screen shown in Fig. 6-2-1 or the "Restore the settings" screen shown in Fig. 6-2-2.
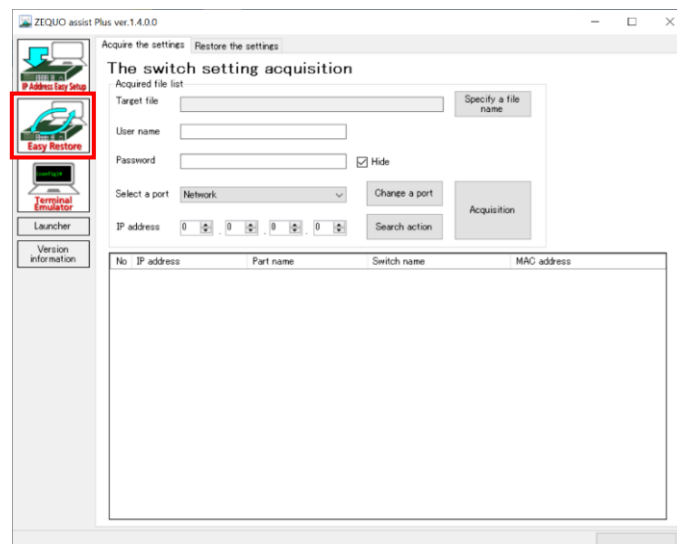
Fig. 6-2-1 Easy Restore Screen
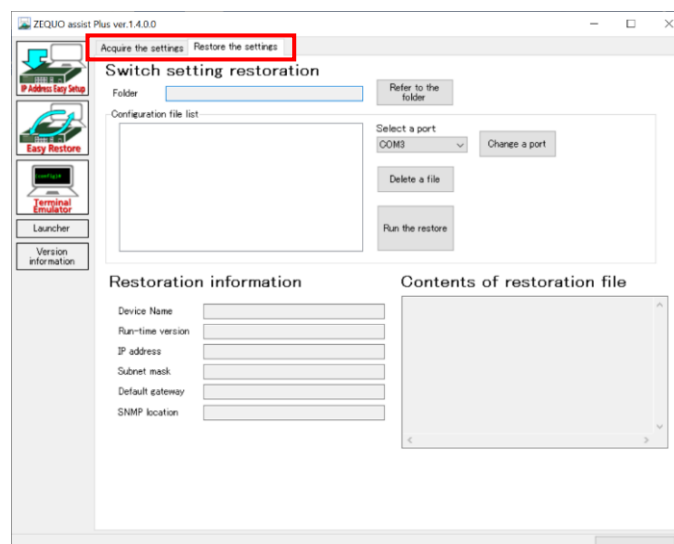
Fig. 6-2-2 Switching Easy Restore Screen (When Selecting "Restore the settings")

6.3. Acquiring Configuration Information

This function can acquire the settings of the MNO series and XG series Switching Hub through the console or network and save it to the personal computer.

After selecting the "Acquire the settings" tab, press the "Specify a file name" button, specify a location for saving the acquired file, and enter a login user and password for a target device to acquire settings.

In "Select a port", select a setting acquisition method. For the personal computer equipped with the console port, select a candidate beginning with "COM" to acquire settings through the console cable. If no candidate appears, check the connection state of the serial port on the personal computer and press the "Change a port." button to acquire port information again.
When selecting "Network", you can specify the IP address of the target device to acquire settings remotely through the network. For the device supporting the IP address easy setting function, press the "Search action" button. This allows the application to search the list of IP addresses within the same segment and to automatically input an IP address.
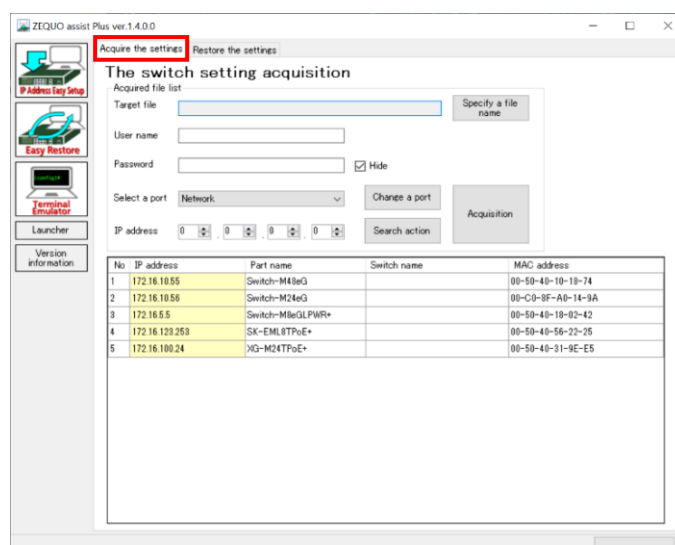
Fig. 6-3-1 "The switch setting acquisition" Screen (When Selecting "Network")

After filling in these items, press the "Acquisition" button. The application will acquire information about the specified device and display its result on the screen shown in Fig. 6-3-2. Check the part number, part name, firmware version, and MAC address of the device. If the device information is correct, press the "OK" button to start the setting acquisition process.
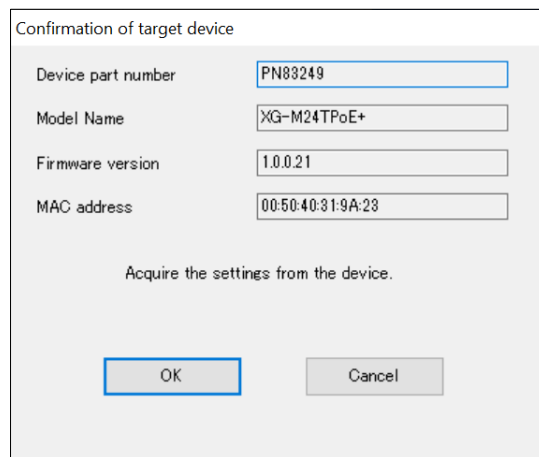
Fig. 6-3-2 "Confirmation of target device" Screen

When "Console" is selected as a setting acquisition method, the screen indicating the progress appears during the setting acquisition process, as shown in Fig. 6-3-3. Acquiring settings through the console will take a few seconds to up to a few minutes. Wait for a while.
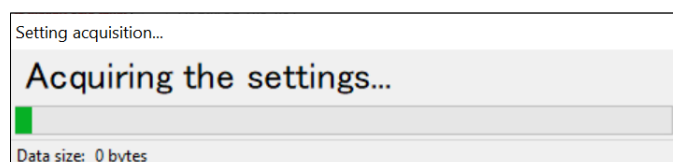
Fig. 6-3-3 Screen Indicating Progress of Setting Acquisition

After the completion of the acquisition process, the screen shown in Fig. 6-3-4 appears.
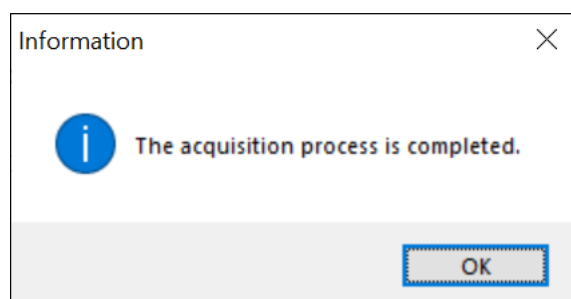
Fig. 6-3-4 Screen Indicating Completion of Process

You have now completed the setting acquisition process of a Switching Hub.

Note:
- Avoid removing the console cable or LAN cable and turning off the device during the setting acquisition process.
- Completing the acquisition process may take a few minutes depending on settings.
- You will need the acquired configuration file for a restoration process. Store it with caution.
- The login name and password for a Switching Hub are recorded in the management file of this application. If you need the acquired login information of a Switching Hub and authentication information about this application, you should store the management file without removing it.
(For details, refer to Section 2.2. in this document.)
- To acquire settings through the network, the personal computer should be able to access the device with Telnet on the network. (At least, the IP address should be set, and the Telnet server function enabled)
For detailed setting conditions of the device, refer to the section "Troubleshooting" in this document.

6.4. Restoring Configuration Information

This function can restore the MNO series and XG series Switching Hub settings saved on the personal computer to a device having the same part number.

Select the "Restore the settings" tab, and press the "Refer to the folder." button to specify the folder storing the configuration file acquired as described in Section 6.3. Then, all files contained in the specified folder appear in "configuration file list." Select a configuration file to be restored.

When a correct configuration file is selected, its information will appear in "Restoration information" and "Show the content of restoration file" in the lower part of the screen. After selecting the file to be restored, in "Select a port", select the number of a console port used for a restoration process. If no candidate appears, check the connection state of the serial port on the personal computer and press the "Change a port" button to acquire port information again.
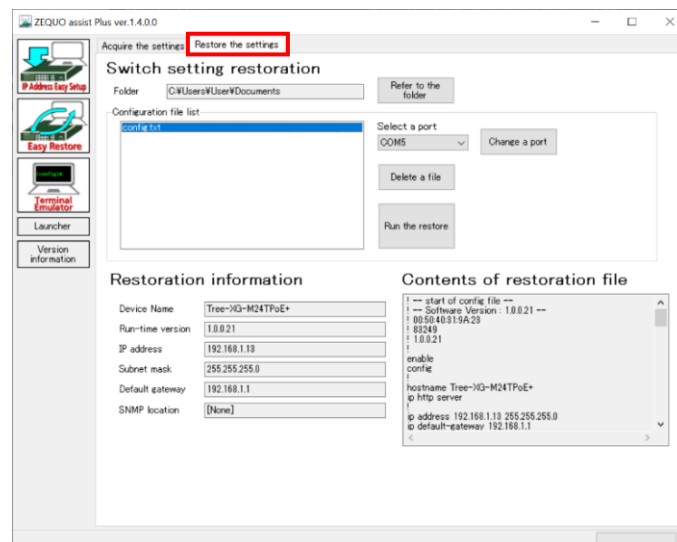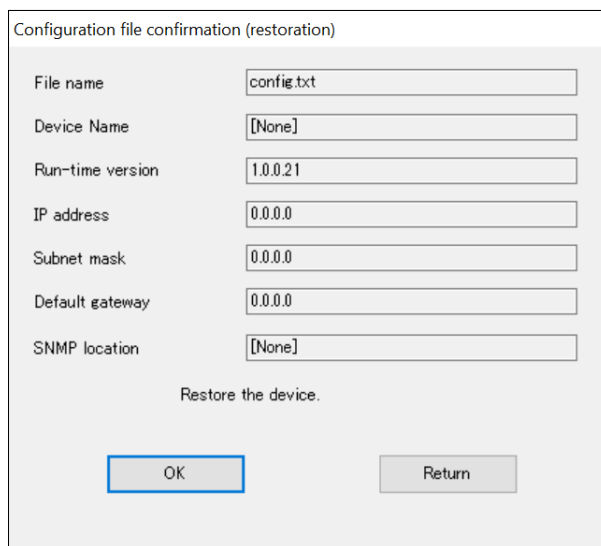
Fig. 6-4-1 "Switch setting restoration" Screen

Note:
● Settings can be restored on the console only. Be sure to prepare the console cable for restoration. (They cannot be restored through the network)

Fill in these items and press the "Run the restore" button. Information about the specified configuration file appears on the screen shown in Fig. 6-4-2. If the settings are correct, press the "OK" button to start the setting restoration process.
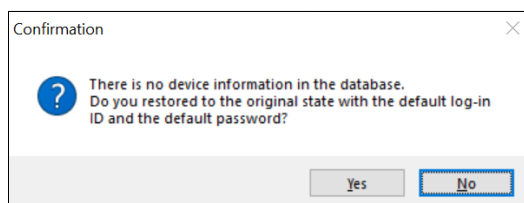
Fig. 6-4-2 "Switch setting restoration" Screen

If no information about devices is registered in the management file of this application (for example, when this application has been reinstalled), the screen shown in Fig. 6-4-3 will appear during running the restoration.
Press the "Yes" button to run the restoration with the factory default login name/password (manager/manager). (Press the "No" button to cancel the process.)
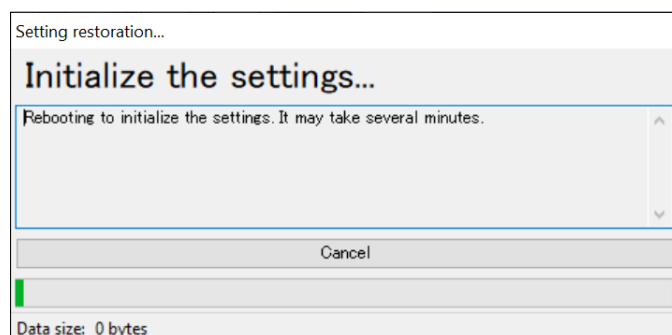
Fig. 6-4-3 Screen for Confirming Login Name/Password

After the restoration process is started, the screen indicating the progress appears as shown in Fig. 6-4-4.

Fig. 6-4-4 Screen Indicating Progress of Restoration

In the restoration process, the following steps are performed in order. Wait for a while until they are completed.

1. Initialize the settings of a target device and reboot it.
2. Restore the settings.
3. Restore the login name and password.
4. Save the restored settings.

To cancel the restoration process, press the "Cancel" button. The confirmation screen shown in Fig. 6-4-5 appears. Press the "Yes" button to confirm the cancellation of the process.
If this action stops the restoration process, the settings of the device will be incomplete. Turn off and on the device and delete the changed settings, or rerun the restoration process.
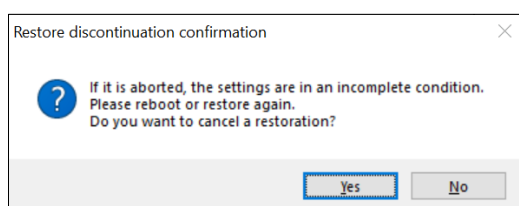
Fig. 6-4-5 Screen for Confirming Whether to Cancel Restoration Process

After the completion of the restoration process, the screen shown in Fig. 6-4-6 appears.
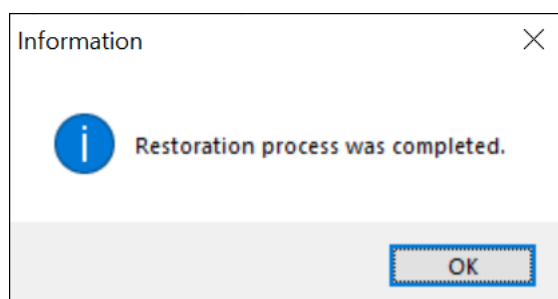
Fig. 6-4-6 Screen Indicating Completion of Restoration Process

You have now completed the setting restoration process of a Switching Hub.

7. Terminal Emulator Function

Using the terminal emulator function enables access to the setting screen of our Switching Hub.

7.1. Configuration for Using Terminal Emulator

To configure our Switching Hub, you can select the following three types of methods.
  - Console
  - Telnet
  - SSH (for only models supporting the function)

To establish a connection with Telnet, you should first set the IP address of a target device.
To establish a connection with SSH, the target device should support the SSH server function and have the function enabled in advance, in addition to setting the IP address.
For how to set the IP address, refer to Chapter 4 "IP Address Easy Setting Function."
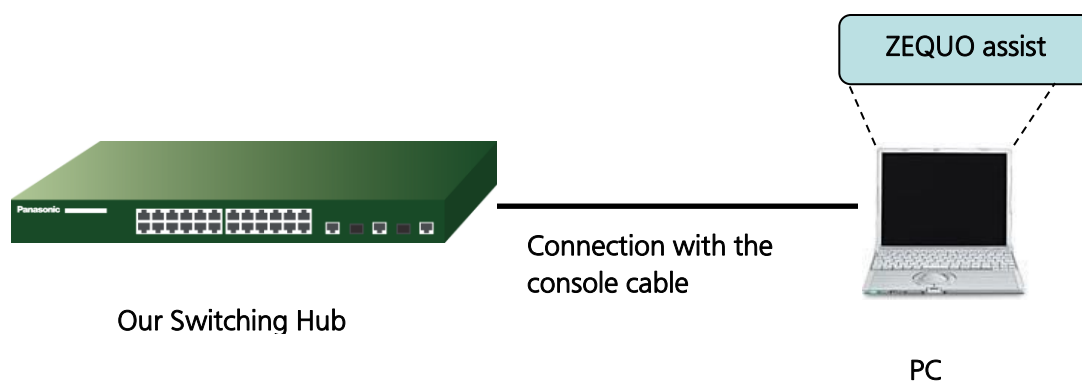
Fig. 7-1-1 Connection Block Diagram (through Console Cable)
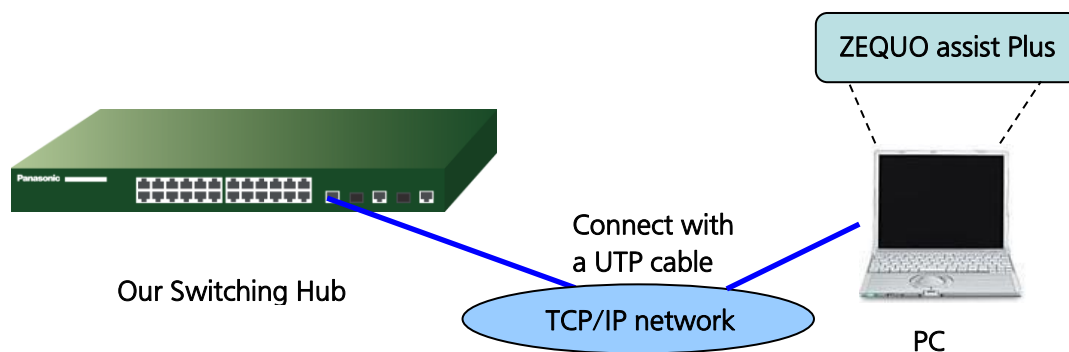
Fig. 7-1-2 Connection Block Diagram (through Telnet/SSH)

7.2. Configuration of "Terminal emulator starting setting window"

From the list on the left side of the screen, click the "Terminal Emulator" button to display the screen shown in Fig. 7-2-1. Fill in items for starting the terminal emulator on this screen.

In "Terminal emulator connection method", enter information about a destination device. When selecting "Console", check that the personal computer contains a console port. When selecting "Telnet" or "SSH v2", check that the destination device has the IP address set and the Telnet/SSH server function enabled.

Selecting "Store the log on the screen" will automatically save the content displayed on the screen in a text file format to the personal computer. Select "Store the log on the screen in the PC.", and in "A log destination:", specify a location for saving the text file.
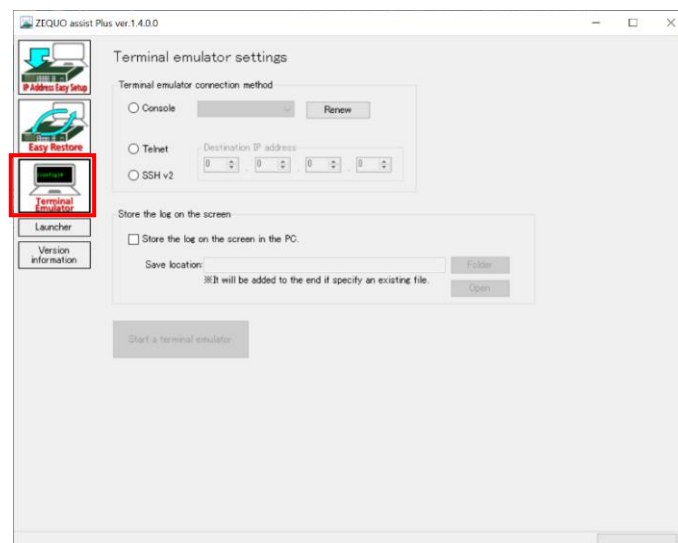
Fig. 7-2-1 "Terminal emulator starting setting window"

After filling in these items, press the "Start a terminal emulator" button to display the terminal emulator screen as another window, as shown in Fig. 7-2-2. For subsequent operations of the Switching Hub, refer to the operation manual supplied with each product.
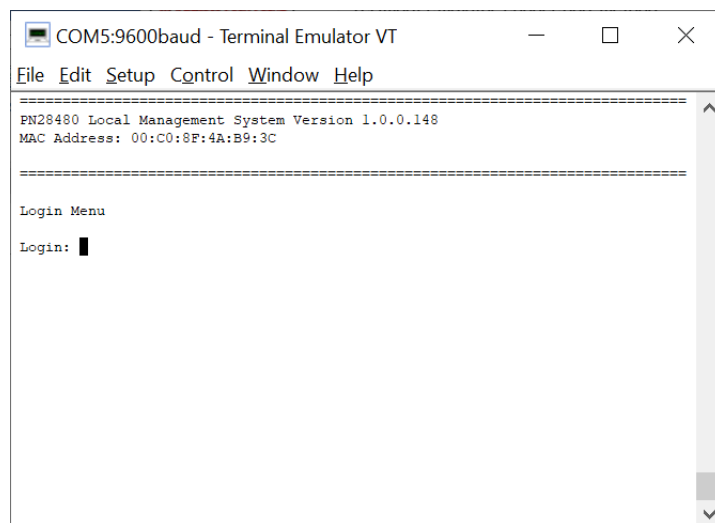
Fig. 7-2-2 Terminal Emulator Screen

The following table describes the displayed items.

Menu Name	Item Name	Description
"File (&F)"	"Log..."	Start saving a log.
	"Comment to Log..."	Add any comment to a log.
	"View Log..."	Show a log being saved.
	"Show Log dialog..."	Show the status of saving a log.
"Edit ..."	"Copy"	Copy a selected text to the clip board.
	"Copy table"	Copy a selected text to the clip board in a tab delimited format.
	"Paste"	Paste the content in the clip board to the screen.
	"Paste<CR>"	Paste the content in the clip board to the screen, along with a line feed code.
	"Clear screen"	Clear the content displayed on the screen.
	"Clear buffer"	Clear the displayed content including existing screen buffers (displayed history).
	"Cancel selection"	Deselect the text.
	"Select screen"	Select the currently displayed text on the screen.
	"Select all"	Select all texts including screen buffers.
"Control"	"Reset terminal"	Initialize terminal emulator actions.
	"Reset port"	Reset the connection of the console port. (This is enabled only for the connection through the console)
"Window"	"Window"	List all terminal emulator windows.
	"Minimize All"	Minimize all terminal emulator windows.
	"Restore All"	Show all terminal emulator windows.
	"Cascade"	Cascade terminal emulator windows.
	"Stacked"	Tile terminal emulator windows up and down.
	"Side by Side"	Tile terminal emulator windows right and left.
"Help (&H)"	"About TTSSH..."	Show the license of the terminal emulator.
	"About Tera Term..."	Show the version information about the terminal emulator.

8. Operational Monitor Function

The operational monitor function provides the following functions for network devices such as our Switching Hub when the existence of our Switching Hub in a monitor device can be confirmed through device information acquisition. To check whether each part number of our Switching Hub supports this function, refer to the included readme.txt. The following functions work only when the existence of our Switching Hub in the monitor device can be confirmed through device information acquisition.

- Periodical Ping monitor
  This function uses a Ping to monitor life and death of our Switching Hub. (Devices other than our Switching Hub can be also monitored)
- Log acquisition (except for some part numbers)
  This function acquires settings, system logs, and operating states of a Switching Hub.
- Batch setting acquisition (except for some part numbers)
  This function acquires settings of multiple Switching Hubs at any given time.
- Setting restoration function (except for some part numbers)
  This function restores settings of a Switching Hub.
- Command transmission (except for some part numbers)
  This function transmits any predefined CLI command based on a schedule.
- Collective upgrade (except for some part numbers)
  This function instructs a target device to upgrade.
- Alert notification (e-mail, dialog, audio)
  This function notifies the administrator of a Ping monitor error and particular Syslog message when they are received.
- Syslog server
  This server function uses a Syslog protocol to aggregate system logs of a Switching Hub.
- TFTP server
  This server function is used to upgrade a Switching Hub or to transfer configuration information.
- SNTP server
  This server function is used to set the time within a Switching Hub.
- Update notifications
  This functions notifies the firmware version of registered terminals, and updates of the version of this application.

Note:
● When performing operational monitoring on the ZEQUO DL series and FA-ML series whose login banner has been changed using the "banner login" command, be sure to include the following information in the login banner.

Example 1: For ZEQUO 4500DL

Half-width space

ZEQUO 4500DL
Firmware Version: 1.0.1.06

Half-width space   Half-width space   Line break

Example 2: For FA-ML12TPoE+

FA-ML12TPoE+
Firmware Version: 2.0.0.00

Half-width space   Half-width space   Line break

Write the firmware version after the product name.
Match the firmware version to that of the product used.

8.1. Configuration

A device connected to the network, including our Switching Hub, can use the operational monitor function when the existence of our Switching Hub in the monitor device is confirmed through device information acquisition.
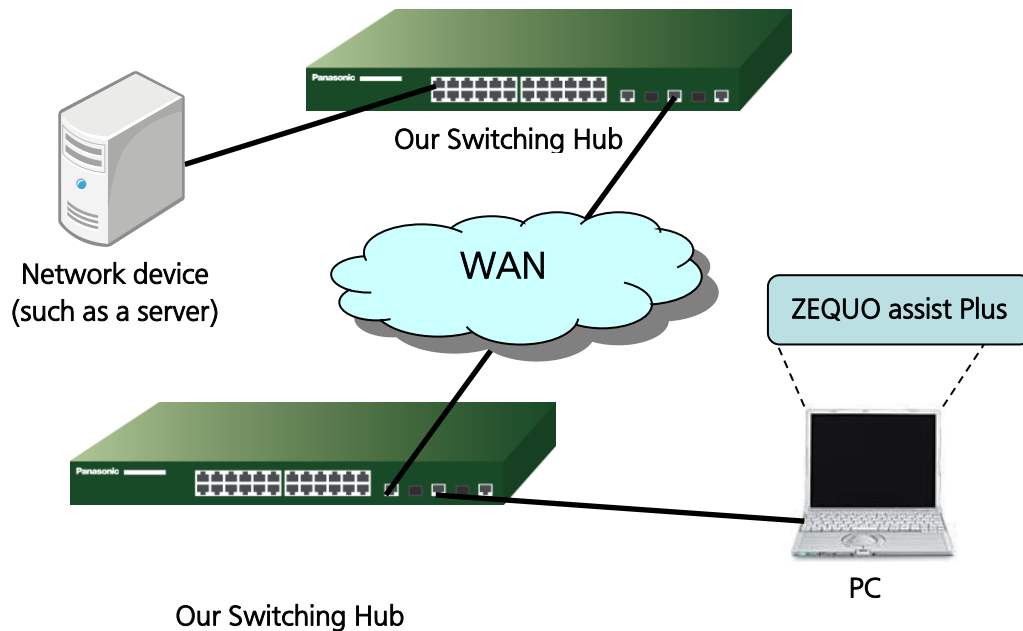
Fig. 8-1 Example of Network Configuration

Note:
● To use the Syslog server and TFTP server functions, open a UDP port used by these servers in the firewall setting on the personal computer.
Standard configuration ... Syslog server: 514 port, TFTP server: 69 port, SNTP server: 123 port

8.2. Showing Operational Monitor Window

To use the operational monitor function, press the "Operational monitor" button on the "ZEQUO assist Plus Launcher" screen or double-click the executable file "NetworkManager.exe" included in the ZEQUO assist Plus folder.
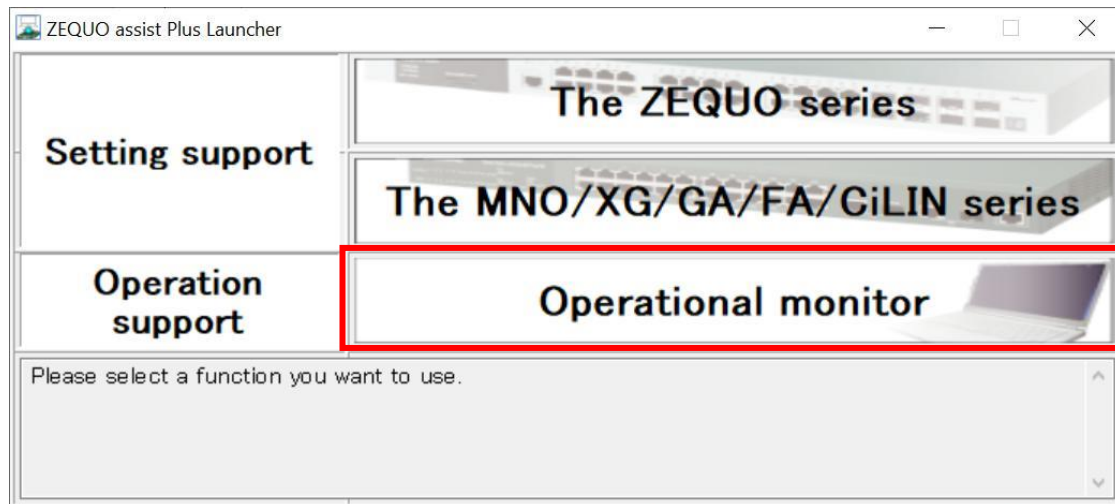
Fig. 8-2-1 Starting Operational Monitor Window

If the screen shown below appears at start-up, press "Yes."
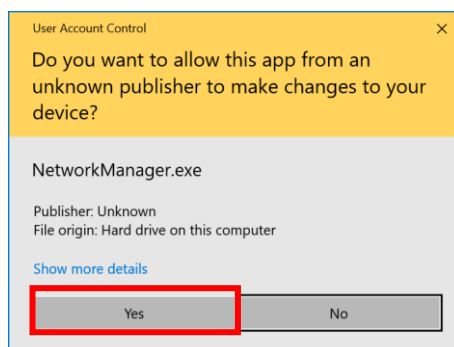
Fig. 8-2-2 Windows User Account Control Screen

If the existence of our Switching Hub in the monitor device is confirmed through device information acquisition, the operational monitor window shown in Fig. 8-2-4 appears. If not, the alert screen shown in Fig. 8-2-3 appears confirming whether to purchase a product. On this screen, press "OK" to display the operational monitor window shown in Fig. 8-2-4.
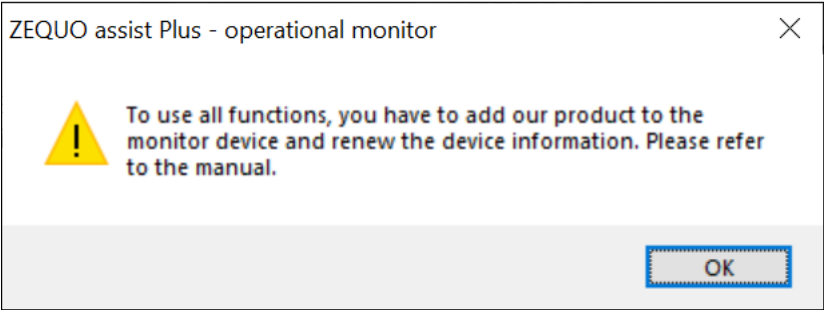
Fig. 8-2-3 Screen for Confirming Whether to Purchase Product
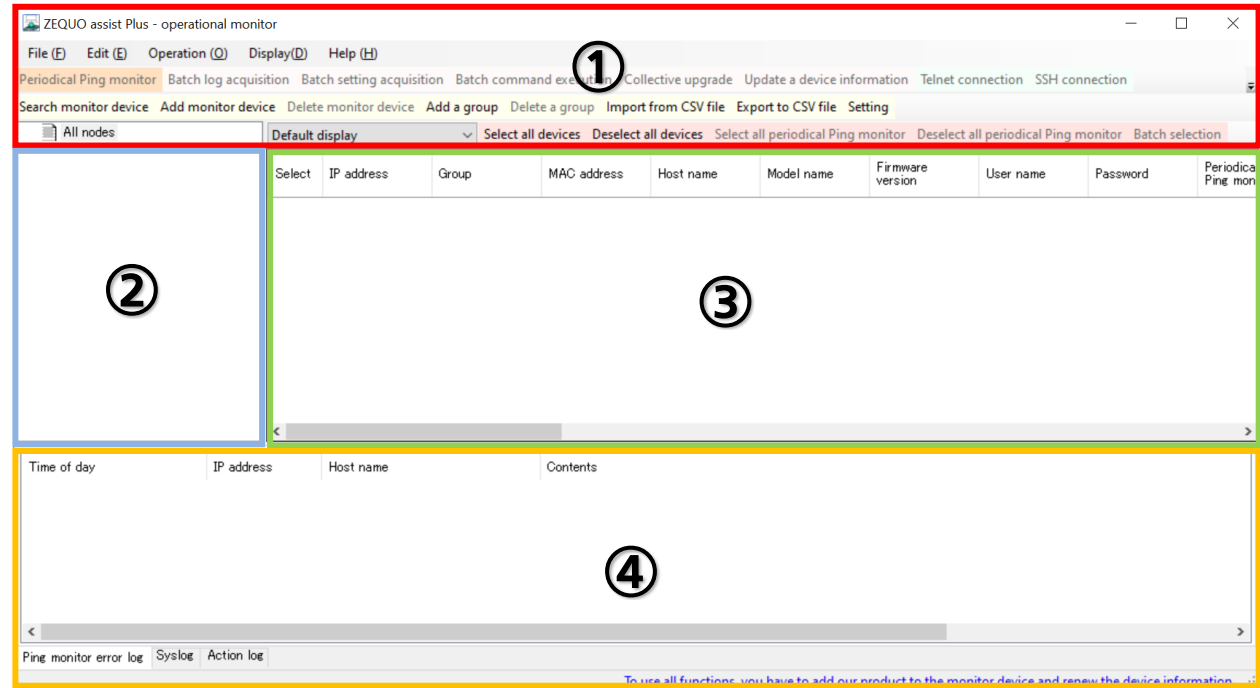
Fig. 8-2-4 Operational Monitor Window

Screen Layout

Number	Name	Overview
(1)	Operation buttons	Show each operation button.
(2)	Group pane	Set and show the logical configuration of a device in a tree structure.
(3)	Device list pane	Set and show the information about the device to be monitored.
(4)	Log pane	Show a Ping monitor error, received Syslog, and application action logs for each tab.

Description of Operation Buttons

Name	Description
"Periodical Ping monitor"	Start and stop the Ping monitor function for the device with "Periodical Ping monitor" checked in the device list. For details, refer to Section 8.8. This function can be used only when the existence of our Switching Hub in the monitor device is confirmed through device information acquisition.
"Batch log acquisition"	Acquire logs immediately for the device where a schedule is specified in "Scheduled log acquisition" in the device list of a selected group. This function can be used only when the existence of our Switching Hub in the monitor device is confirmed through device information acquisition.
"Batch setting acquisition"	Access the device with "Select" checked in the device list of a selected group to acquire device configuration information. This function can be used only when the existence of our Switching Hub in the monitor device is confirmed through device information acquisition.
"Batch command execution"	Execute any user-defined CLI command on the device with "Select" checked in the device list of a selected group. For details, refer to Section 8.11. This function can be used only when the existence of our Switching Hub in the monitor device is confirmed through device information acquisition.
"Collective upgrade"	Use the firmware specified in "File name of upgrade" to instruct the upgrade for the device with "Select" checked in the device list of a selected group. For details, refer to Section 8.12. This function can be used only when the existence of our Switching Hub in the monitor device is confirmed through device information acquisition.
"Update a device information."	Access the device with "Select" checked in the device list of a selected group, and acquire device information. For our Switching Hub, "Model name" and "Firmware version" appear. When device information can be acquired from the monitor device through updating device information, it indicates the existence of our Switching Hub.
"Restore setting"	Restores configuration information in the configuration file for the target device when the configuration file is set as the "Setting file for restoration" for the device in the device list, which is last selected with a mouse. For details, refer to Section 8.12. This function can be used only when the existence of our Switching Hub in the monitor device is confirmed through device information acquisition.

|	
"Telnet connection"	Establish a Telnet connection for the device in the device list, which is last selected with a mouse. This function can be used only when the existence of our Switching Hub in the monitor device is confirmed through device information acquisition.
"SSH connection"	Establish an SSH connection for the device in the device list, which is last selected with a mouse. This function can be used only when the existence of our Switching Hub in the monitor device is confirmed through device information acquisition.
"WEB connection"	Establish a WEB connection for the device in the device list, which is last selected with a mouse. This function use Microsoft Edge. When connected to the web, it is necessary to set Microsoft Edge to IE mode. You should use recommendation browser of target equipment, if there is problem of display, etc. If you would like to use proxy server, it is possible for you to use by setting proxy server. This function connect to the target IP and port 80 with HTTP. If you would like to access to HTTPS, particular port and web page, you can use URL of device list pane.This function can be used only when the existence of our Switching Hub in the monitor device is confirmed through device information acquisition.
"Camera tool"	When i-PRO System Setting Tool made by i-PRO is installed on the device that contains this application, the camera tool can be started by pressing the "Camera tool" button.* For known compatible camera tools, refer to page 109.
"Search monitor device"	Add the device detected through the IP address easy setting to the device list of a selected group. For details, refer to Section 8.4.
"Add monitor device"	Add a new row to the device list of a selected group. For details, refer to Section 8.4.
"Delete monitor device"	Delete the device with "Select" checked in the device list of a selected group. For details, refer to Section 8.4.
"Add a group"	Add a child group below a selected group. For details, refer to Section 8.5.
"Delete a group"	Delete a selected group and **devices belonging to the group.** For details, refer to Section 8.5.
"Import from CSV file"	Import device information saved in a CSV file to this application, and replace the current device list and its content with that information. For details, refer to Section 8.4.
"Export to CSV file"	Output all device information in the device list to a CSV file. For details, refer to Section 8.4.

"Setting"	Set the following functions. For details, refer to pages for each function. - Alert profile on page 73 - Syslog alert on page 82 - SNTP server on page 103 - TFTP server on page 102 - Scheduled log acquisition on page 87 - Periodical Ping monitor on page 83 - Command transmission on page 93 - Others on page 105
Display pull-down menu	You can switch between show/hide according to the purpose of each column displayed in the device list pane. The initial value is "Defalt display." You may also select "Periodical Ping monitor display", "Execution command display", "Connection information display", and "Custom display." With "Custom display", you can set show/hide for each column. For details, refer to Section 8.4.
"Select all devices"	Check "Select" of all devices in the device list of a selected group.
"Deselect all devices"	Un-check "Select" of all devices in the device list of a selected group.
"Select all periodical Ping monitor"	Check "Periodical Ping monitor" of all devices in the device list of a selected group.
"Deselect all periodical Ping monitor"	Un-check "Periodical Ping monitor" of all devices in the device list of a selected group.
"Batch selection"	Collectively select settings for "Alert profile", "Scheduled log acquisition", "Command transmission 1" through "Command transmission 3", and "File name of upgrade" in the device list of a selected group.

Description of Device List Pane

Name	Description
"Select" check box	Specify a target device for the following operations. ● "The collective log acquisition" ● "Batch setting acquisition" ● "Collective upgrade" ● "Update a device information." ● "Setting restoration function" ● "Delete monitor device." ● "Copy in CSV format (&C)"
"IP address"	Enter the IP address of a device.
"Group"	Show the group name of the device specified in the group pane. You cannot directly edit the name on this item.
"MAC address"	Show or change the MAC address of a device.
"Host name"	Enter any name of a device (host name). (optional)

"Model name"	Show the model name of our Switching Hub. To acquire it, check "Select" of a target device and press the "Update a device information" button.
"Firmware version"	Show the firmware version information of our Switching Hub. To acquire it, check "Select" of a target device and press the "Update a device information" button.
"User name"	Enter a user name for logging in to our Switching Hub. (It must be a login account having administrative privileges) To use only the Ping monitor, you do not have to enter it.
"Password"	Enter a password for logging in to our Switching Hub. (It must be a login account having administrative privileges) To use only the Ping monitor, you do not have to enter it. You can use the "etc." tab on the setting screen to show or hide this password.
"Periodical Ping monitor" check box	Specify a target device for the periodical ping monitor function.
"Result of Ping monitor"	Show the result of the last Ping monitor.
"Last date and time of Ping monitor"	Show the last date and time when the Ping monitor was executed.
"Ping response time"	Show response time from the device for the last Ping monitor.
"Periodical Ping monitor start time"	Enter the time for set the start time of Periodical Ping monitor function.Default time is 0:00. If it same at "Periodical Ping monitor end time", the Periodical Ping monitor function is not action.
"Periodical Ping monitor end time"	Enter the time for set the end time of Periodical Ping monitor function.Default time is 0:00. If it same at "Periodical Ping monitor start time", the Periodical Ping monitor function is not action.
"Alert profile"	Select a used alert profile in case of a Ping monitor error.
"Scheduled log acquisition"	Select a profile for acquiring scheduled logs for our Switching Hub. You should create a schedule on the setting screen in advance.
"TX Command 1", "TX Command 2", "TX Command 3"	Select a profile for transmitting a command for our Switching Hub. You should create a schedule on the setting screen in advance.
"File name of upgrade"	Select the file name of the firmware used in the "Collective upgrade" function for our Switching Hub. List files with the extension ".rom" contained in the public folder of the TFTP server. For details, refer to Section 8.15.
"URL"	Enter a URL address for WEB connections.
"Auto setting restoration"	Enable the Auto setting restoration function. Automatically executes the setting restoration function when enabled.
"Setting file for restoration"	Select a configuration file for the setting restoration function for our Switching Hub.
"EnablePassword"	Enter a password for "enable" command. This is used when "enable" command is needed password.

8.3. Procedure for Setting Operational Monitor Function

To use the operational monitor function, follow the steps below to configure settings. For details, refer to pages for each function.
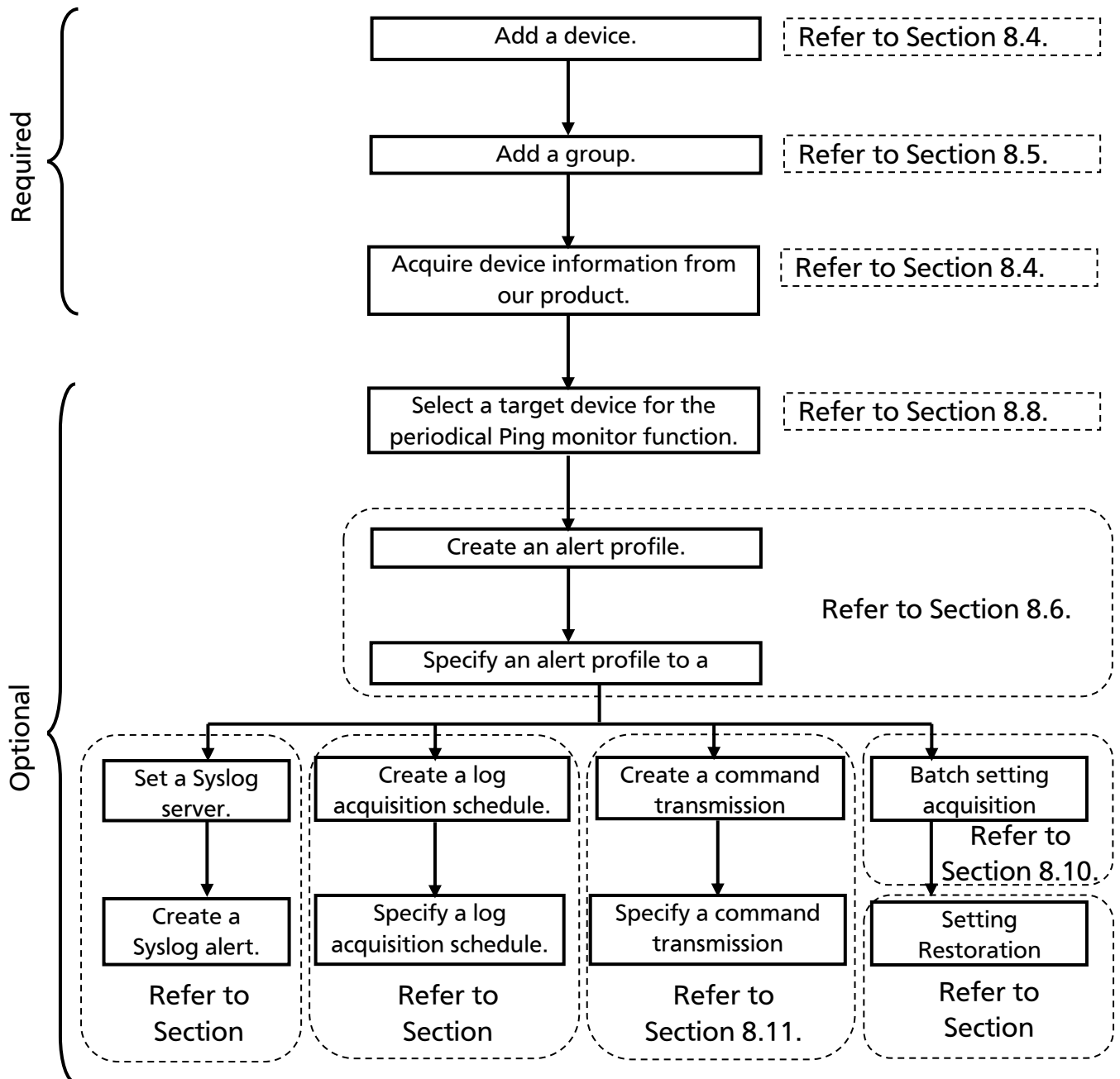
Fig. 8-3 Procedure for Setting Operational Monitor Function

8.4. Device Management

8.4.1. Adding Device

To execute the operational monitor function, you should first register a device to be monitored with this application.

Press the "Add monitor device" button, and an empty row will be added to the device list. Fill in the following items: "IP address", "Host name" (optional), and "User name" and "Password" for a login account having administrative privileges.

(When registering a product other than our Switching Hub, you do not have to fill in "User name" and "Password")

Fig. 8-4-1 Adding Device

Fig. 8-4-2 Example of Adding Device

Right-click on the device list pane to display menus where you can also add a monitor device.
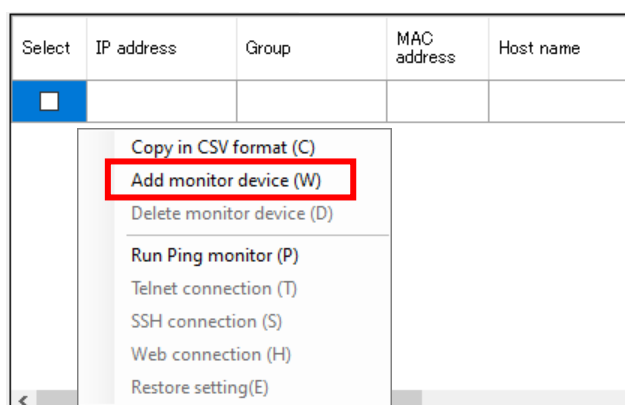
Fig. 8-4-3 Adding Monitor Device (Right-click Menu)

8.4.2. Adding Devices through Search Monitor Device

You can register devices through the monitor device search function as you can use the "Add monitor device" button to add devices. When you press the "Search monitor device" button, the "View for device searching" screen appears.
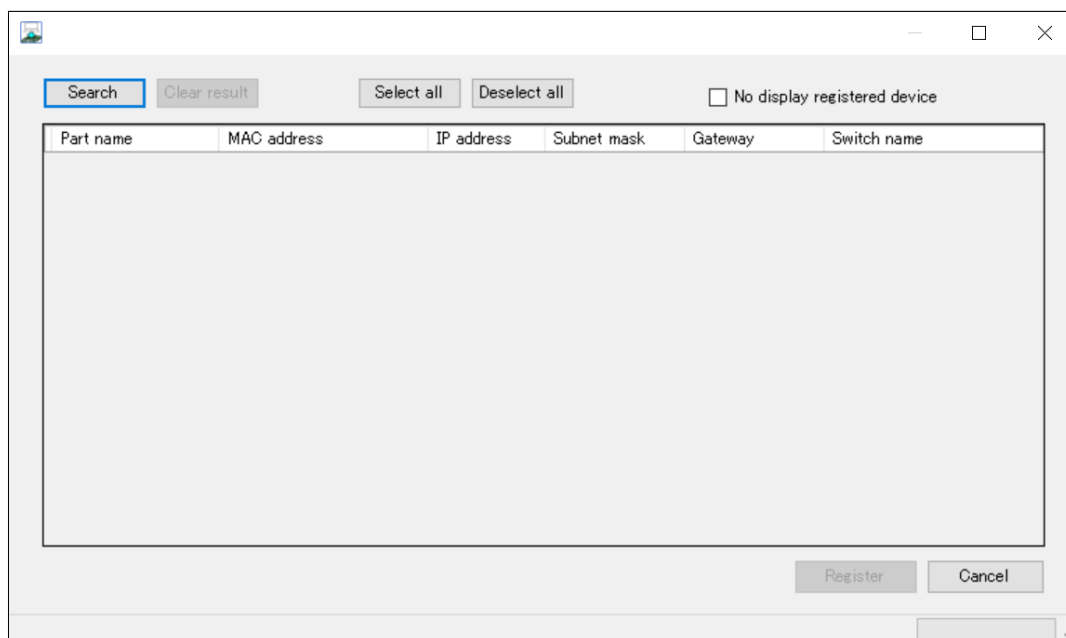
Fig. 8-4-4 Monitor Device Screen

When you press the "Search" button in the "View for device searching" screen, a device information list of our Switching Hubs that exist within the same network and support the IP address easy setting function is displayed. Check the box for the device to be registered and press the "Register" button to register the device into the device list.
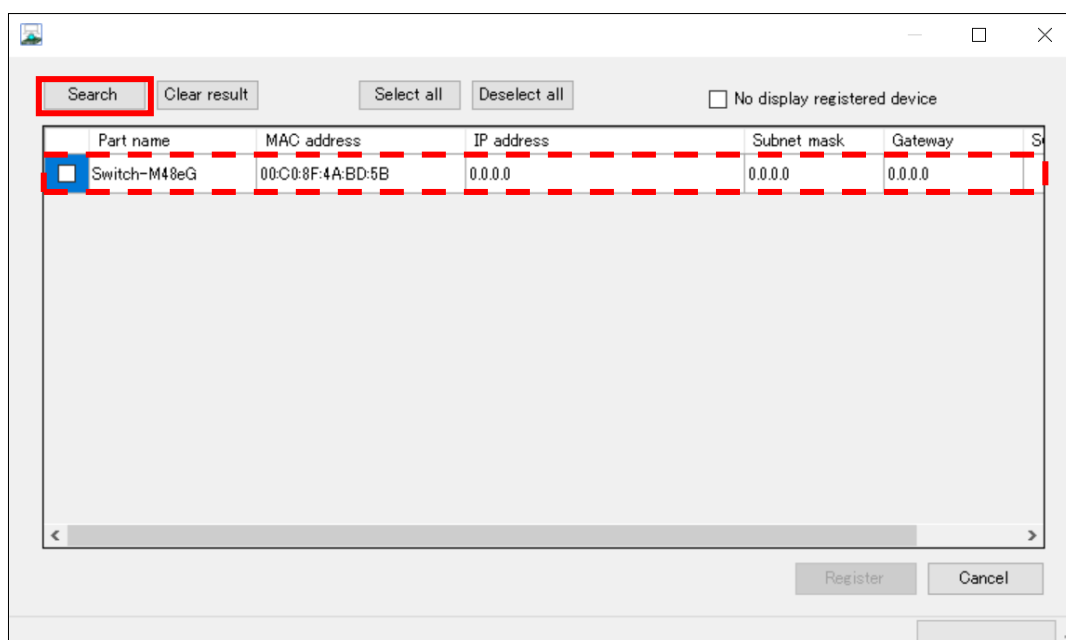
Fig. 8-4-5 Search Execution in Monitor Device Screen

8.4.3. Deleting Monitor Device

To delete the monitor device, check "Select" of that device and press the "Delete monitor device." button. Then, on the displayed confirmation screen, press "OK" to continue to delete it.
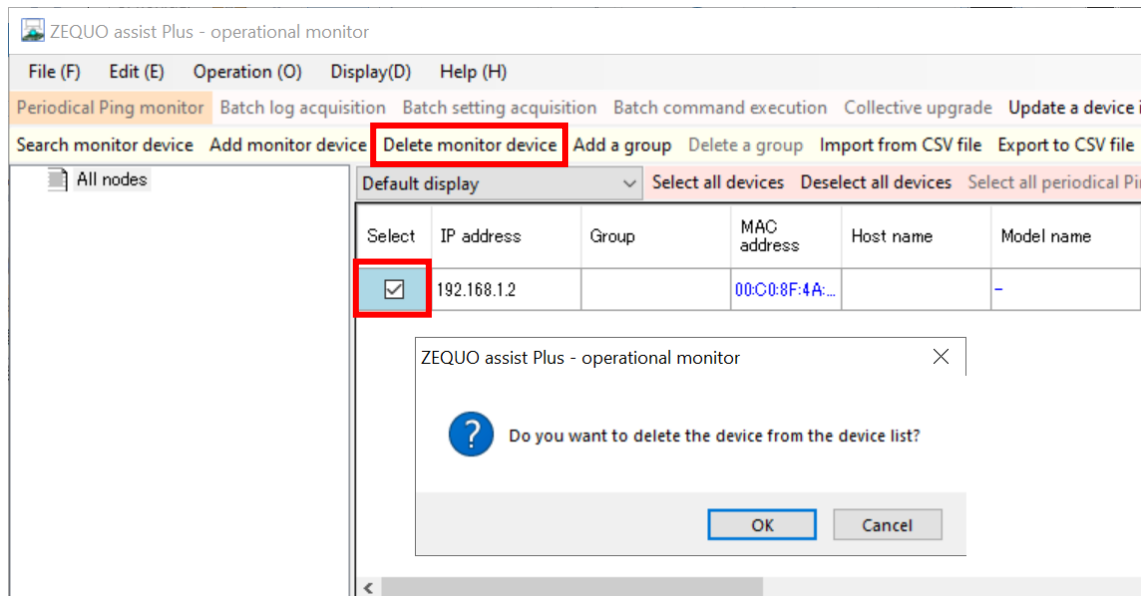
Fig. 8-4-6 Screen for Confirming Whether to Delete Device

· 8.4.4. Updating Device Information

Check "Select" and then press the "Update a device information" button. This enables you to acquire the model name and firmware version information of our Switching Hub.

   When the information can be acquired through updating device information, you can use all functions of the operational monitor function. Since then, the device information will be automatically and periodically updated in our Switching Hub. However, if the existence of our Switching Hub cannot be confirmed for 28 days since the last confirmed date, you will not be able to use all functions. When you set "Alert profile for fatal error." as described in Section 8.13. "Other Settings", a notification message can be sent to a specified e-mail address at the automatic update of the device information, if the existence of our Switching Hub cannot be confirmed for eight or more days. For a specified device other than our Switching Hub supporting this application, no information can be acquired. "Update a device information", except for GA-EMR48TPoE+, XG series and eG series, needs setting of EnablePassword for the equipment and ZEQUO assist Plus. Please enable the TelnetServer function of the device and set EnablePassword. After setting EnablePassword, press the "Update a device information" button to update a device information.

Please refer to the Manual CLI on the home page for information on how to enable TelnetServer functionality. And in this manual "8.2 Showing Operational Monitor Window" to see where to enter the EnablePassword.
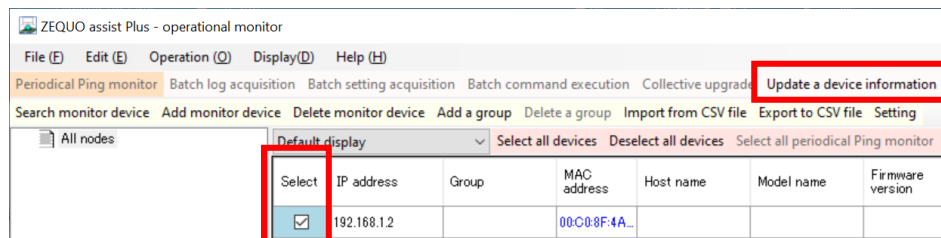
Fig. 8-4-7 Updating Device Information
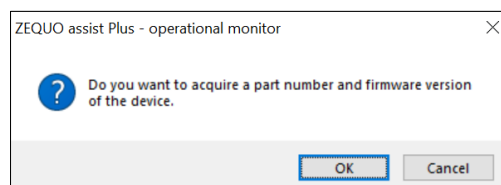
Fig. 8-4-8 Screen for Confirming Whether to Update Device Information
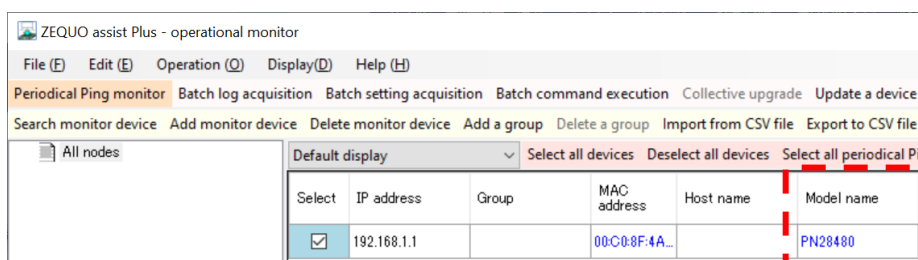
Fig. 8-4-9 Example of Screen after Updating Device Information

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8.4.5. Using CSV File to Import and Export Device List

The device list information registered with this application can be exported (output) and imported (input) in a CSV file format. You can extract the exported information on other personal computers. You can also use spread sheet software or something to edit the content of the exported file and import it again to register much device information at a time.

Note:
- An import process will delete all contents contained in the current device list and put the content of the CSV file into the list. (The content of the CSV file will not be added to the existing device list)

8.4.6. Device List Pane Display Setting

You can change the show/hide settings for certain columns of the device list pane in this application.
To set the display settings for certain columns, select the provided display format from the Display pull-down menu in the device list pane and "Display" of the operation buttons to switch show/hide of for certain columns.
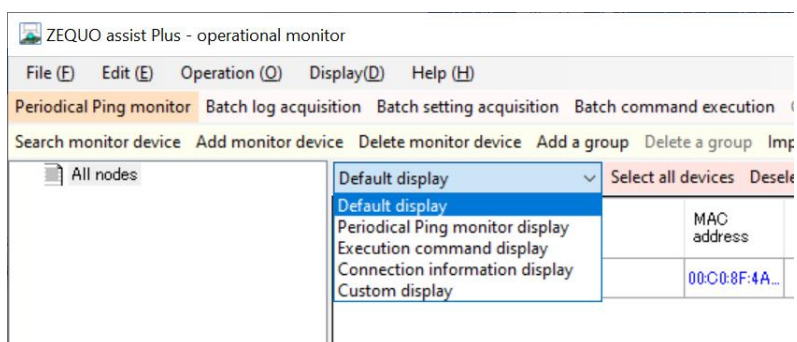
Fig. 8-4-10 Device List Pane Display Setting (Display Pull-down Menu)

Description of each Display Format

Name	Description
"Default display"	Display format set as the initial value. All columns are shown.
"Periodical Ping monitor display"	Minimum required display format for Ping monitoring.
"Execution command display"	Minimum required display format for command transmission based on schedule settings.
"Connection information display"	Minimum required display format for for Telnet, SSH, and WEB connections to our Switching Hub.
"Custom display"	Display format in which the user can set show/hide for each column.

For "Custom display", you can set show/hide for each column and the display order from "Custom display setting" in "Display" of the operation buttons.
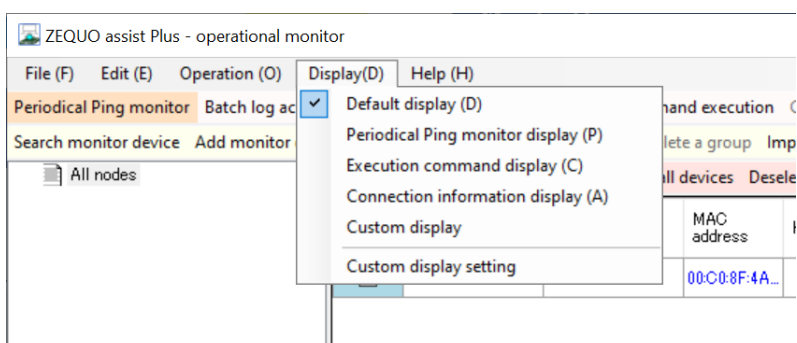
Fig. 8-4-11 Device List Pane Display Setting (Operation Buttons)
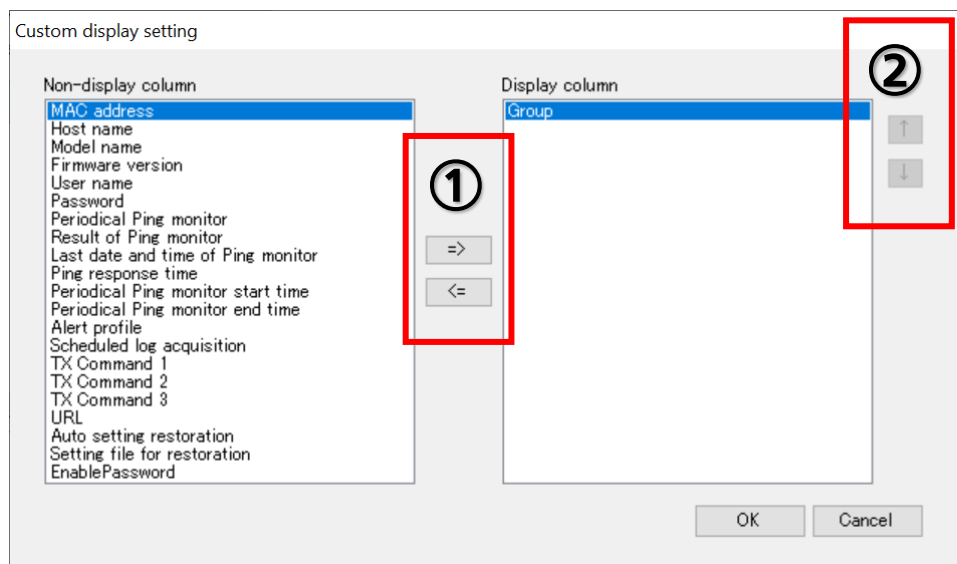
Fig. 8-4-12 "Custom display setting"

Screen Layout

Number	Name	Description
(1)	"Show/hide of the target column" buttons	You can set show/hide for the target column.
(2)	"Display order change" buttons	You can change the display order of the target column.

8.5. Group Management

Registered devices can be categorized, narrowed down, and displayed in a hierarchic structure for each group.
By default, the screen displays only "All nodes" showing all registered devices. Create any group under this.

8.5.1. Adding Group

Select a group one level higher than a hierarchy you want to create, and press the "Add a group" button. A new group will be created under the selected group. You can change the group name to any name with a click of it (up to 16 characters). You can create up to 256 groups.
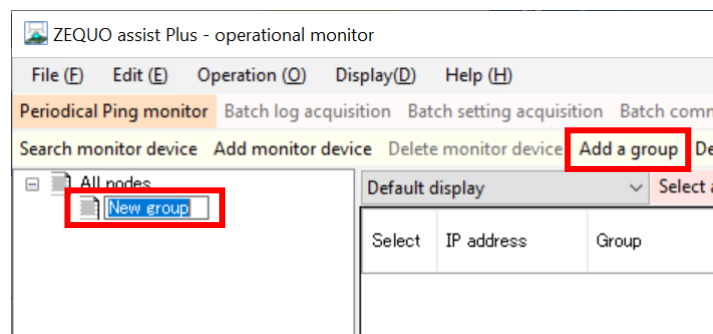
Fig. 8-5-1 Adding Group

8.5.2. Deleting Group

When you want to delete any group, select a target group and press "Delete a group."
Then, on the displayed confirmation screen, press "OK" to continue to delete it.
Deleting a group will also remove all devices belonging to that group. To delete only the group, you should first move devices belonging to it to another group.
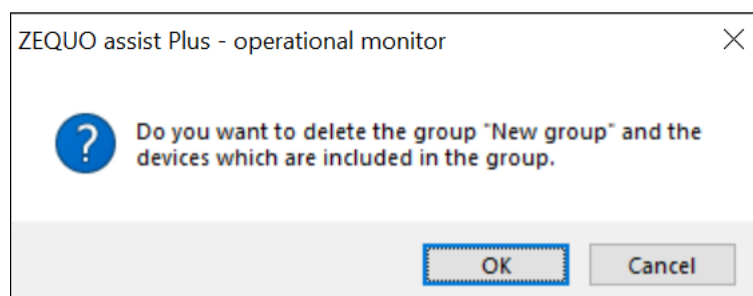
Fig. 8-5-2 Screen for Confirming Whether to Delete Group

8.5.3. Assigning Device to Group

To assign a previously registered device to any group, check "Selection" of a target device, and drag and drop the device on a destination group.
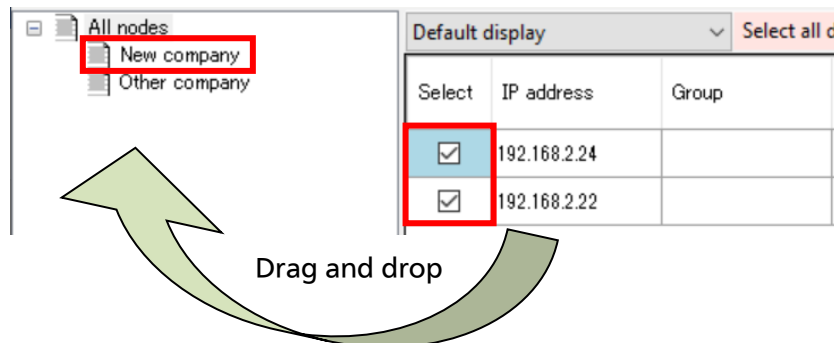
Fig. 8-5-3 Example of Assigning to Group (Assigning Two Devices to "New company" Group)
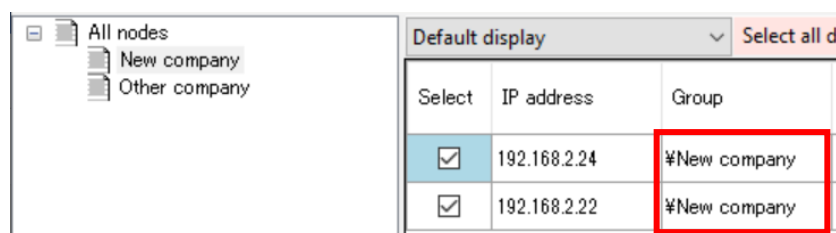
Fig. 8-5-4 After Assigning to Group

To add a new device to an existing group, you can select a destination group and press "Add monitor device" to add the device under that group.
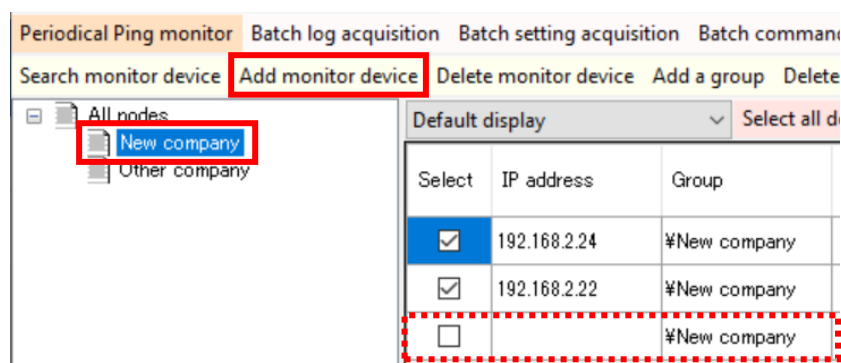
Fig. 8-5-5 Adding Monitor Device (after Selecting Group)

8.6. Alert Profile Setting

This application can combine the following three types of alert methods to notify the administrator of a message when detecting a monitor error or particular situation. Settings defining these notification methods are called an "alert profile."

- Sending an e-mail
- Showing a message on the screen of the personal computer running this application
- Play backing an audio file
- Incident operation by Ping error/Syslog reception
  Executing commands
  SNMP Trap notification

The alert profile can be connected with the following events.

- ◆ Periodical Ping monitor ... If a Ping time-out occurs in a particular device
- ◆ Syslog alert ... If a Syslog message including a particular text is received

This function can be set but does not work when the existence of our Switching Hub in the monitor device cannot be confirmed through device information acquisition.

Note:
- For the types "sending an e-mail", "showing a message on the screen of the personal computer running this application", "play backing an audio file", and "executing commands", to prevent continuously many alerts, for 600 seconds after the occurrence of any alert (re-execution inhibit period), a notification process is not executed even in case of a new alert (the new alert is recorded in the log pane only). The notification process is executed for each occurrence of an alert only when a periodic Ping monitor time out occurs. The re-execution inhibit period will not be applied to the type "SNMP Trap notification." The initial value of the re-execution inhibit period is 600 seconds and can be set within the enabled range 0 to 3600 seconds.

8.6.1. Adding Alert Profile

To add an alert profile, press the "Setting" button to display the "Setting" window, and select the "Alert profile" tab. Press the "Add" button, and then a new profile will be created. Enter any name in "Profile name" (up to 255 characters).
You can add up to 513 alert profiles.
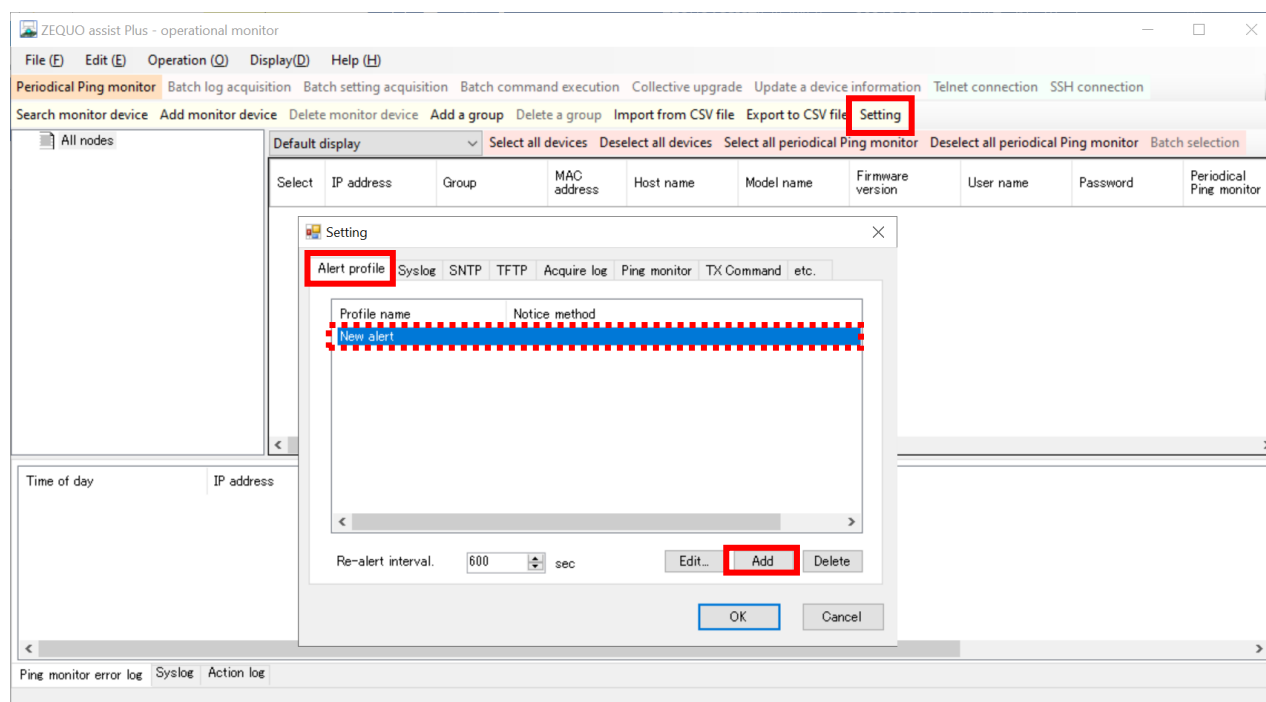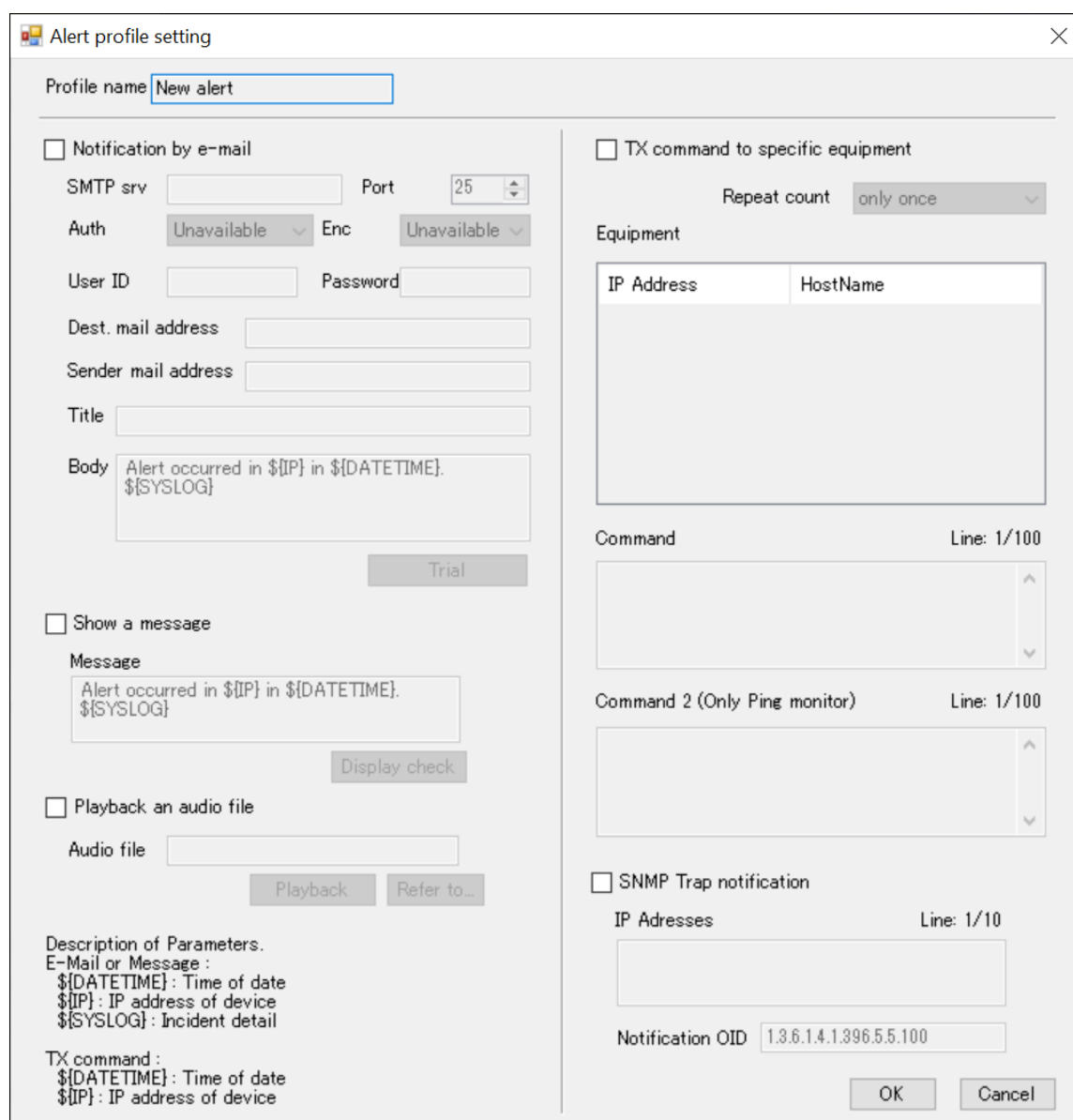
Fig. 8-6-1 Adding Alert Profile

8.6.2. Editing Alert Profile

After adding the new alert profile in the previous section, press the "Edit ..." button, and then an editing screen will appear. On this screen, you can define a notification action in case of an alert.
To e-mail a notification message, consult the network administrator for the e-mail server setting in advance.

Fig. 8-6-2 Screen for Editing Alert Profile Settings

Description of Setting Items

Method	Name	Description
E-mail	"Notification by e-mail"	Enable an alert notification by e-mail.
	"SMTP srv"	Specify an SMTP server to which an e-mail is sent.
	"Port"	Specify the port number of the SMTP server. (initial value: 25) A recommended value is automatically input depending on an option selected in "Encryption." However, you should change it accordingly for your server environment.
	"Auth"	Select an authentic method for connecting to the SMTP server from the following options. ● "Unavailable" ● "PLAIN" ● "LOGIN" ● "CRAM-MD5"
	"Enc"	Select an encryption method for connecting to the SMTP server from the following options. ● "Unavailable." ● "SSL/TLSPLAIN" ● "STARTTLS"
	"User ID"	Enter a user ID for authentication.
	"Password"	Enter a password for authentication.
	"Dest. mail address"	Enter an e-mail address to which an alert e-mail is sent. You can use a semi colon (;) to specify multiple destination addresses.
	"Sender mail address"	Enter an e-mail address for a sender e-mail address.
	"Title"	Enter the title of an alert e-mail.
	"Body"	Enter the body text of the alert e-mail.
	"Confirmation of e-mail transmission."	Send a test e-mail based on the input setting.
"Message"	"Show a message"	Enable an alert notification showing a message on the screen.
	"Message"	Enter the body text of a message displayed on the screen.
	"Display check"	Show a test message screen based on the input setting.
"Audio"	"Playback an audio file"	Enable an audio alert notification.
	"Audio file"	Specify a path to an audio file (wav format) to be used. You can specify a file with the size of up to 10 MB.
	"Playback"	Play back a specified file.
	"Refer to…"	Show a dialog for selecting a file.

Executing commands	"TX command to specific equipment"	Enable command execution to the decive in the "IP address"

	"Repeat count"	Select the execute command times that used for error detection by Ping monitor.
		   The following values are specified to the execute command times.
		        Only once: the Command and Command2 are execute only once.
		        Repeatedly: the Command and Command2 are execute repeatedly.

	"Equipment"	Select the target device for command execution.
	"Command"	Enter the execution command (up to 100 lines).
	"Command 2"	Enter the execution command 2 (up to 100 lines). "Command 2" is only used for error detection by Ping monitor. "Command 2" is executed only when error recovery is not accomplished after "Command" is executed.

SNMP Trap	"SNMP Trap notification"	Enable the SNMP Trap notification.
		   The following values are specified to the Trap according to the event type.
		        1: Ping monitor error detection or Syslog alert
		        0: Ping monitor error recovery detection

	"IP address"	Enter the target IP addresses for notification (up to 10).
	"Notification OID"	Enter the OID to be notified.

You can describe the following parameters in the subject / body field of e-mail and message to insert dynamic information at the time of an alert.

Description of Parameters

Parameter Name	Description
${DATETIME}	Insert date and time when an alert occurred.
${IP}	Insert the host name and IP address of the device where an alert occurred.
${SYSLOG}	Insert the content of an alert.

You can describe the following parameters in the execution command to insert dynamic information at the time of an alert.

Description of Parameters

Parameter Name	Description
${DATETIME}	Insert date and time when an alert occurred.
${IP}	Insert the host name and IP address of the device where an alert occurred.

8.6.3. Connecting Alert Profile

Connecting the created alert profile with the following actions will enable a notification process: an action occurring at the time-out in the periodical Ping monitor or an action occurring at the time of reception of a Syslog message including a particular text in the Syslog server.
For how to connect the profile with actions, refer to sections for each function.

8.6.4. Re-execution Inhibit Period for Alert Profiles

The re-execution inhibit period for alert profiles can be changed from the "Alert profile" tab on the "Setting" screen. The default value for the re-execution inhibit period is 600 seconds and can be changed within the range of 0 to 3600 seconds. Setting the value to 0 means that re-execution will not be inhibited. Note that setting this period to 0 or a small value will cause a large amount of alert profiles to be executed consecutively.
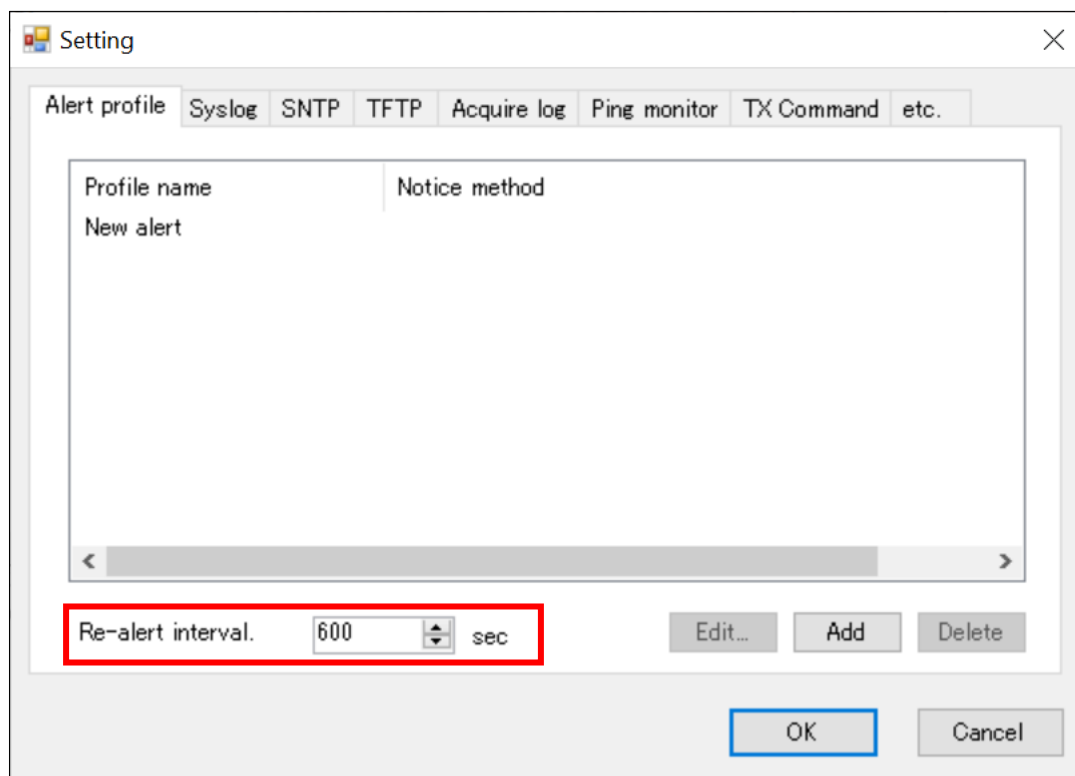
Fig. 8-6-3 Alert Profiles Re-execution Inhibit Period Settings

8.7. Syslog Related Function Setting

Since this application contains a Syslog server function, it can receive log information sent from the device supporting a Syslog protocol and save it to the personal computer. This will enable the long-term storage of log information which is too much for an individual device to hold and the uniform management of aggregated logs.
This function can be set but does not work when the existence of our Switching Hub in the monitor device cannot be confirmed through device information acquisition.

8.7.1. Syslog Server Setting

Press "Setting" on the operational monitor window to display the "Setting" screen. Select the "Syslog" tab on the screen, and then a screen for setting a Syslog server will appear. The received Syslog data is saved as a text file in a specified log save folder.

Fig. 8-7-1 Screen for Setting Syslog Server

Description of Setting Items

Name	Description
"Enable syslog server"	Select this box to enable the Syslog server function. (initial value: enabled)
"UDP port"	Specify the number of a UDP port used by the Syslog server. (initial value: 514) Also, you should open this port in the firewall setting on the personal computer.
"Log save Folder"	Specify a folder for saving the received Syslog data. (initial value: "ZEQUO assist_DATA" folder on the desktop)
"Base file name"	Specify a prefix used for the name of an automatically generated Syslog data file as up to 16 characters. (initial value: syslog) The file name is determined based on this text and date and time when the file is generated. (example of a generated file name: syslog_15-01-01_00;00;00.txt)
"Max size of log"	Specify the upper limit for the log size per Syslog data file in the range of zero to 100 MB. (initial value: 10 MB, 0 indicates unlimited file size) If the log size exceeds this upper limit value, data will be saved in a generated new file.
"Number of log file"	Specify the upper limit for the number of Syslog data files created in the log save folder in the range of zero to 1000. (initial value: 100, 0 indicates an unlimited number of files) If the number of files exceeds this upper limit value, the oldest Syslog data file will be automatically deleted, and a new Syslog data file will be generated.
"Syslog alert setting ..."	Show the "Syslog alert setting." screen. (refer to the next page)
"Default values"	Return all setting items to their initial values.

8.7.2. Syslog Alert Setting

With the Syslog server function enabled, the application can use the alert profile to cause an alert at the time of reception of a particular Syslog message.
In this Syslog alert setting, connect the previously created alert profile with a Syslog message being a trigger condition of an alert process.
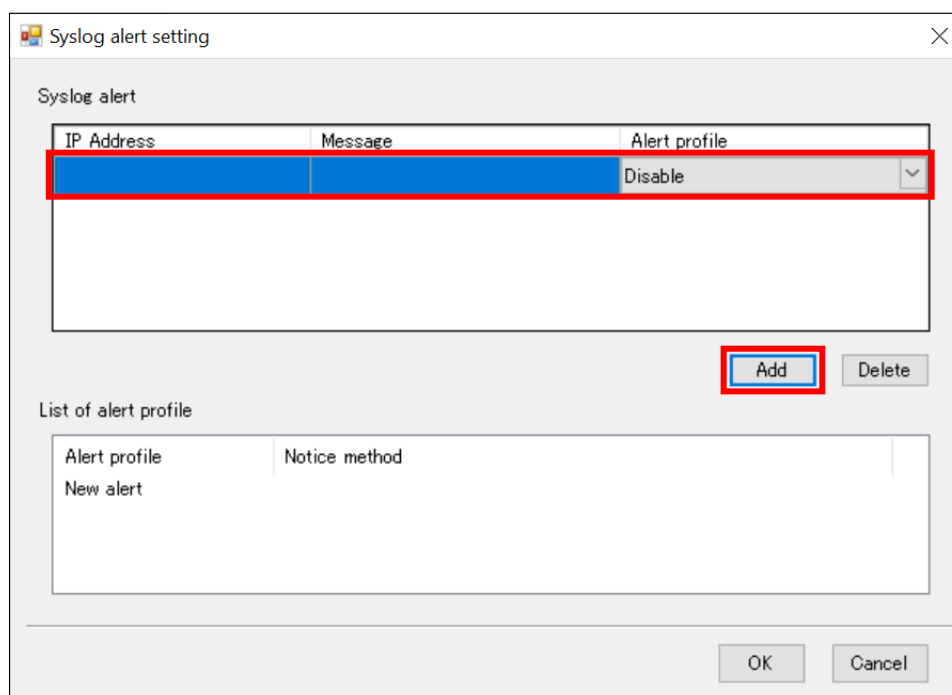
Fig. 8-7-2 Screen for Setting Syslog Server

Description of Setting Items

Name	Description
"IP address"	Enter the sender IP address for the Syslog message. When keeping the field empty, all IP addresses that can receive Syslog messages become the target for sender IP addresses.
"Message"	Specify a Syslog message to trigger an alert process within 1024 characters. (**prefix match, case sensitive**) When keeping the field empty, you can specify the reception of any Syslog message as a condition, regardless of the content of the Syslog message. For Syslog messages sent from devices supporting the Syslog protocol, refer to each operation manual.
"Alert profile"	Select the alert profile created in Section 8.6.
"Add"	Add a new Syslog alert. You can add up to 256 alerts.
"Delete"	Delete the last selected Syslog alert.
"List of alert profile"	Show the list of alert profiles created in Section 8.6. If no alert profile appears, you should first create it.

8.8. Periodical Ping Monitor Setting

The periodical Ping monitor function of this application can monitor life and death of network devices such as our Switching Hub and can notify the administrator of a detected error based on a defined alert profile.
In this section, set the periodical Ping monitor function, select a device to be monitored, and connect an alert profile with the device.
This function can be set but does not work when the existence of our Switching Hub in the monitor device cannot be confirmed through device information acquisition.

8.8.1. Periodical Ping Monitor Setting

Press "Setting" on the operational monitor window to display the "Setting" screen. Select the "Ping monitor" tab on the screen, and then a screen for setting the periodical Ping monitor will appear.
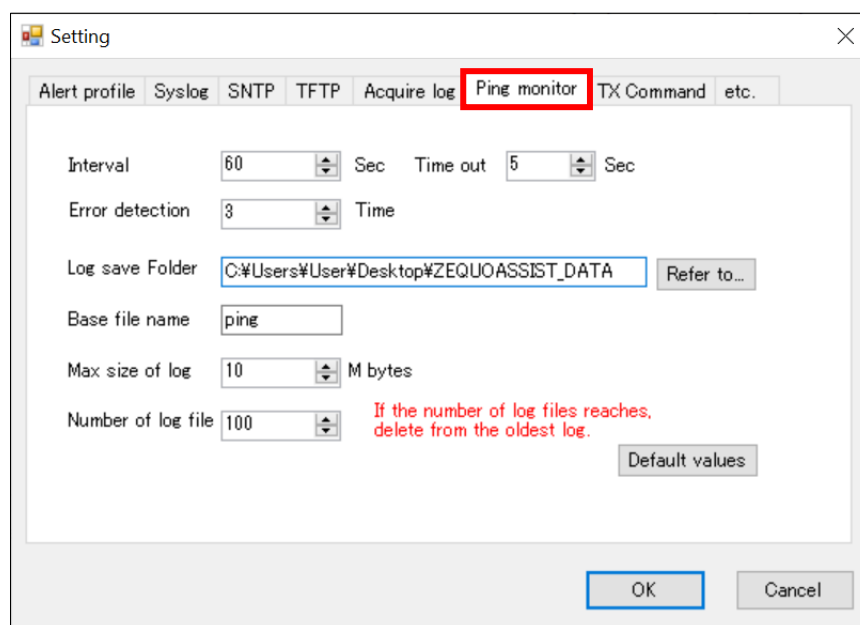
Fig. 8-8-1 Screen for Setting Ping Monitor Function

Description of Setting Items

Name	Description
"Interval"	Specify the interval of a Ping transmitted to one device in seconds. (initial value: 60 seconds)
"Time out"	Specify the time-out period of a Ping response in the range of one to 30 seconds. (initial value: 5 seconds)
"Error detection"	Specify the number of times of consecutive time-out occurrence before a device error is determined. (initial value: 3 times)
"Log save Folder"	Specify a folder for saving an error detection log. (initial value: "ZEQUO assist_DATA" folder on the desktop)
"Base file name"	Specify a prefix used for the name of an automatically generated error detection log file as up to 16 characters. (initial value: ping) The file name is determined based on this text and date and time when the file is generated. (example of a generated file name: ping_14-01-01_00;00;00.txt)
"Max size of log"	Specify the upper limit for the log size per error detection log file in the range of 0 to 100 MB. (initial value: 10 MB, 0 indicates unlimited file size) If the log size exceeds this upper limit value, data will be saved in a generated new file.
"Number of log file"	Specify the upper limit for the number of error detection log files created in the log save folder in the range of 0 to 1000. (initial value: 100, 0 indicates an unlimited number of files) If the number of files exceeds this upper limit value, the oldest error detection log file will be automatically deleted, and a new error detection log file will be generated.
"Default values"	Return all setting items to their initial values.

8.8.2. Executing Periodical Ping Monitor

To specify a target device for the periodical Ping monitor, select the check box in the "Periodical Ping monitor" column in the device list.
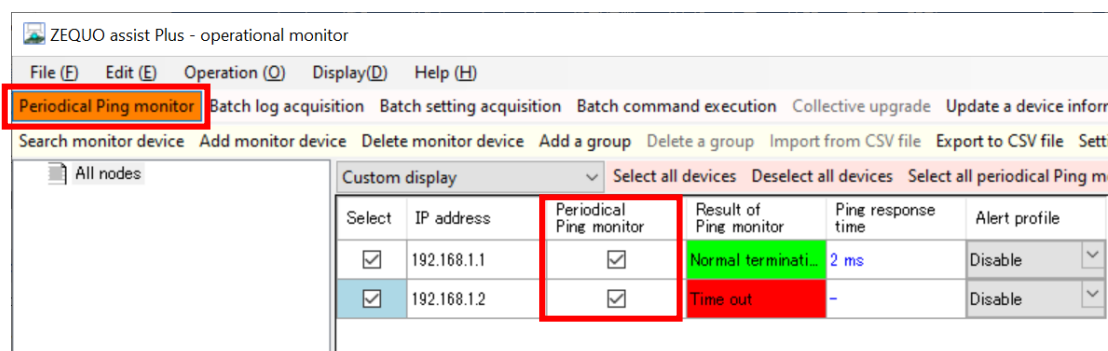
Fig. 8-8-2 Specifying Target Device for Periodical Ping Monitor

To start an actual periodical Ping monitor process, press the "Periodical Ping monitor" button in the upper left of the operational monitor window. On the displayed confirmation screen, press "Yes." After the process is started, monitor status will appear in "Result of Ping monitor.", "last date and time of Ping monitor.", and "Ping response time" in the device list. To stop the process, click the "Periodical Ping monitor" button again. You can check the operating condition of the process based on the color of the "Periodical Ping monitor" button.
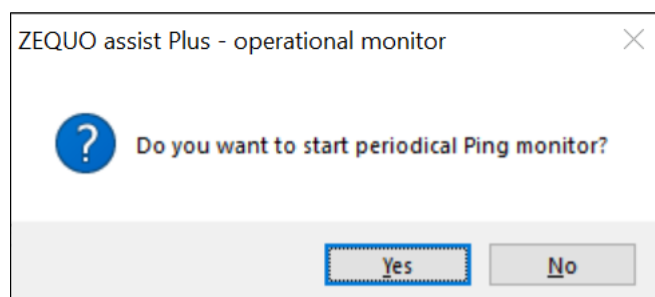
Fig. 8-8-3 Screen for Confirming Whether to Start Periodical Ping Monitor Process

Monitored(flesh)   Stopped(orange)
Fig. 8-8-4 Showing Operating Condition of Periodical Ping Monitor

8.8.3. Alert Profile Setting for Periodical Ping Monitor Error

Connect the alert profile created in Section 8.6. with the device, and then the application can notify the administrator of a device error (time-out) as an alert occurring during the periodical Ping monitor.
To connect the alert profile with the device, select the name of a target alert profile in the "Alert profile" column in the device list.

Select	IP address	Periodical Ping monitor	Result of Ping monitor	Ping response time	Alert profile
☑	192.168.1.1	☑	Normal terminati...	2 ms	abnormal
☑	192.168.1.2	☑	Time out	–	Disable

Fig. 8-8-5 Specifying Alert Profile for Periodical Ping Monitor Error

Note:
● To prevent continuously many alerts, during the re-execution inhibit period (initial value: 600 seconds) after the occurrence of any alert, a notification process is not executed even in case of a new alert. (The new alert is recorded in the log pane only)

8.9. Log Acquisition Function Setting

This application supports a "log acquisition" function as one of features. This function acquires the following information for our Switching Hub (except for some part numbers) automatically and periodically: an active link-up state, operation information of each function, and information useful for system analysis (such as a system log). This function is classified into two types of acquisition methods: one is scheduled log acquisition to automatically and periodically acquire information, and the other is collective log acquisition to randomly acquire information in any device.
This function can be set but does not work when the existence of our Switching Hub in the monitor device cannot be confirmed through device information acquisition.

8.9.1. Scheduled Log Acquisition Setting

The scheduled log acquisition function automatically acquires log information for each part number based on timing defined in a log acquisition schedule (P.89) and saves its result to a text file.
Press "Setting" on the operational monitor window to display the "Setting" screen. Select the "Acquire log" tab on the screen, and then a screen for setting the scheduled log acquisition will appear.
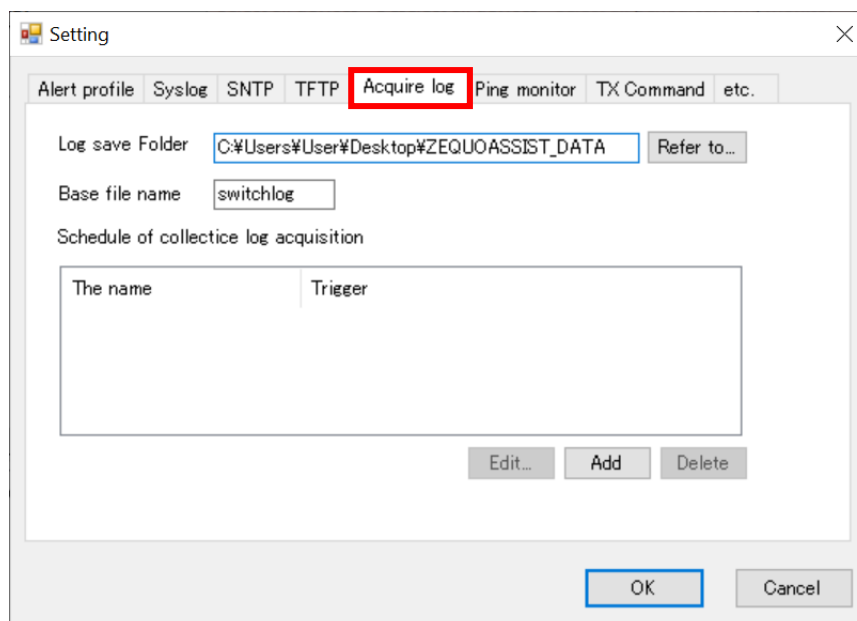
Fig. 8-9-1 Screen for Setting Scheduled Log Acquisition

Description of Setting Items

Name	Description
"Log save Folder"	Specify a folder for saving the file of a log acquisition result for each device. (initial value: "ZEQUO assist_DATA" folder on the desktop)
"Base file name"	Specify a prefix used for the name of an automatically generated log file as up to 16 characters. (initial value: switchlog) The file name is determined based on this text, the IP address of the device, and date and time when the file is generated. (example of a generated file name: switchlog_192.168.0.1_14-01-01_00;00;00.txt)
"The name"	Specify and show the name of a log acquisition schedule.
"Trigger"	Show a condition for executing a schedule.
"Edit ..."	Edit a selected log acquisition schedule.
"Add"	Add a new log acquisition schedule. You can add up to 256 schedules.
"Delete"	Delete the last selected log acquisition schedule.

8.9.2. Editing Log Acquisition Schedule

Select the command transmission schedule added in the previous section and press the "Edit ..." button, and then the "Edit a schedule" screen will appear. This screen is used to define date and time as well as an interval for log acquisition.

Fig. 8-9-2 Screen for Editing Log Acquisition Schedule

Description of Setting Items

Name	Description
Execution time interval	Select one of the following: "Once.", "Every hour", "Every day", "Every week", and "Every month."
Date and day of week	Specify date and day of week when a log acquisition process is started.
"Time"	Specify time when a log acquisition process is started.

8.9.3. Connecting Log Acquisition Schedule with Device

To start a scheduled log acquisition process, you should connect a log acquisition schedule with a target device. To do that, select a target log acquisition schedule in the "Scheduled log acquisition" column in the device list.
You can check the operating condition of the process in the "Action log" pane.

Fig. 8-9-3 Example of Connecting Log Acquisition Schedule

8.9.4. Executing Collective Log Acquisition

To execute Collective Log Acquisition function, check the box in the "Select" column of a target device for collective log acquisition, and press the "Batch log acquisition" button. Then, on the displayed confirmation screen, press "OK" to continue to execute it.
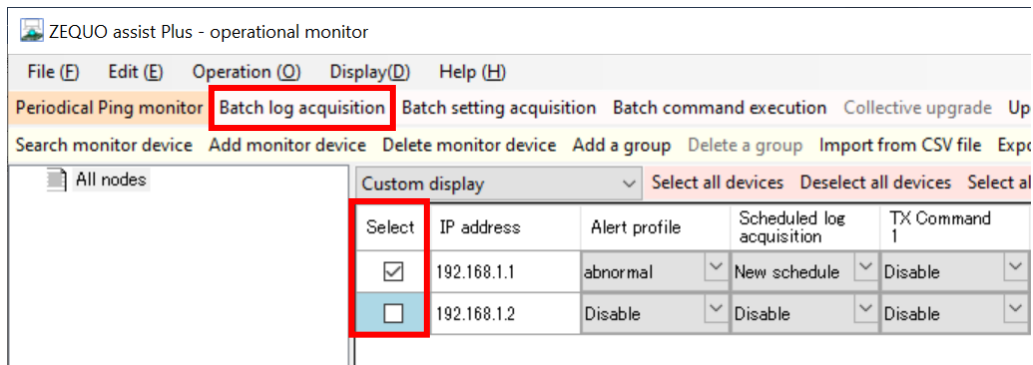
Fig. 8-9-4 Executing Collective Log Acquisition
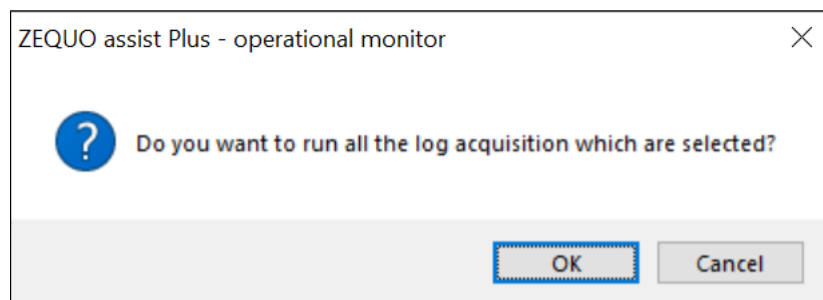
Fig. 8-9-5 Confirming Whether to Execute Collective Log Acquisition

8.10. Collective Setting Acquisition Function Setting

This application supports the "Batch setting acquisition" function in which configurations set for our Switching Hub (except for some part numbers) can be acquired at any given time.

This function uses the TFTP server function described in Section 8.13. to transfer the configuration file to our Switching Hub. Before this operation, you should enable the TFTP server function.

This function can be set but does not work when the existence of our Switching Hub in the monitor device cannot be confirmed through device information acquisition.

To perform collective setting acquisition, check "Select" for the target device to acquire the setting and press the "Batch setting acquisition" button. On the displayed confirmation screen, press "OK" to continue to execute it.
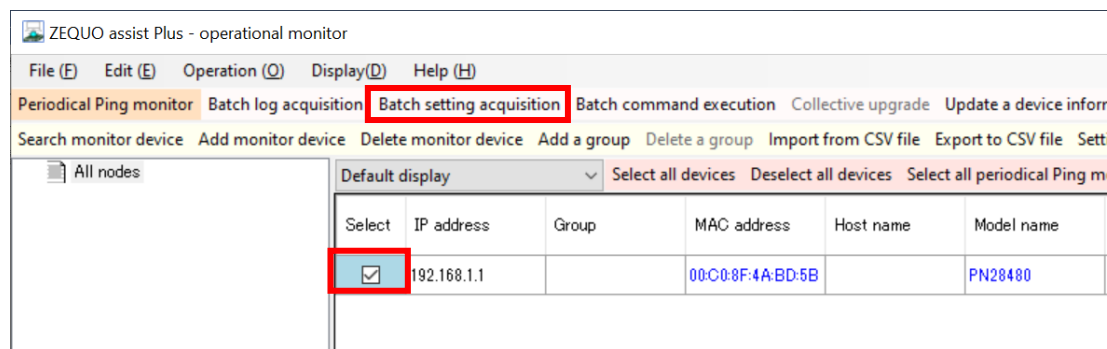
Fig. 8-10-1 Executing Collective Setting Acquisition
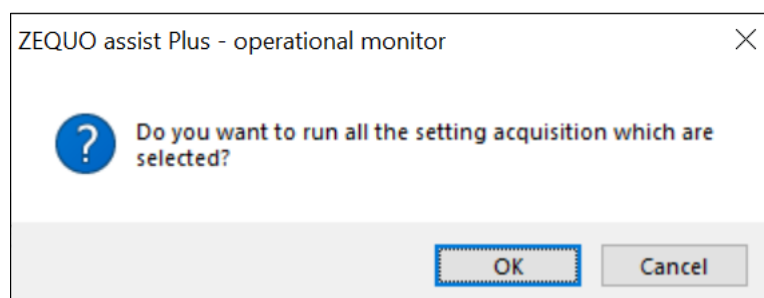
Fig. 8-10-2 Confirming Whether to Execute Collective Setting Acquisition

Note:
● Collective Setting Acquisition Function needs setting of EnablePassword, except for GA-EMR48TPoE+, XG series and eG series.
  After setting EnablePassword, please press the "Update a device information" button to update a device information".

8.11. Command Transmission Function Setting

This application supports a "TX Command" function as one of features. This function automatically transmits any user-defined CLI command to our Switching Hub (except for some part numbers) based on a schedule.
The use of this function will enable the periodical acquisition of operating conditions or the change of settings depending on a period of time. The result displayed on the screen at the time of text command transmission is saved in a specified log save folder.
This function can be set but does not work when the existence of our Switching Hub in the monitor device cannot be confirmed through device information acquisition.

8.11.1. Command Transmission Setting

Press "Setting" on the operational monitor window to display the "Setting" screen. Select the "TX Command" tab on the screen, and then a screen for setting the command transmission function will appear.
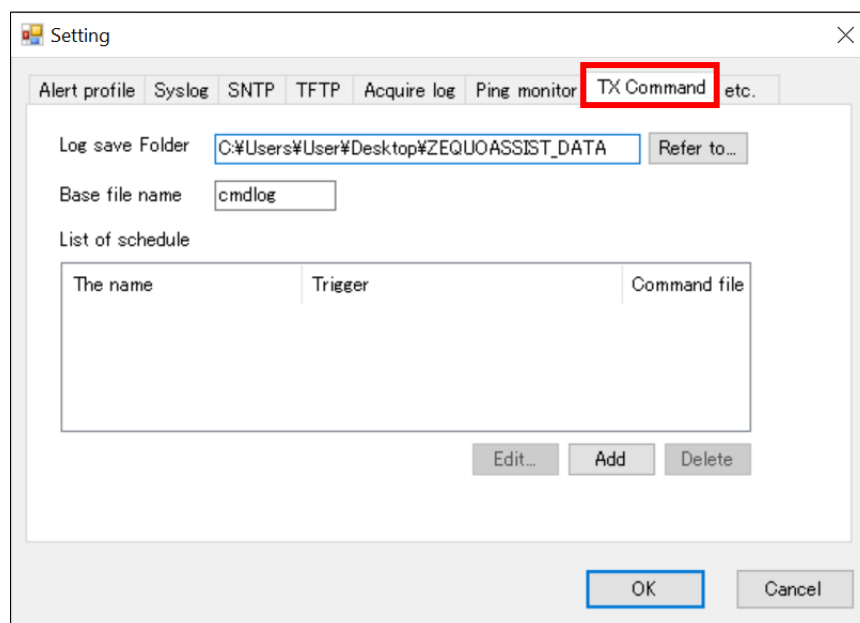
Fig. 8-11-1 Screen for Setting Command Transmission Function

Description of Setting Items

Name	Description
"Log save Folder"	Specify a folder for saving the log file of the result displayed on the screen at the time of command transmission for each device. (initial value: "ZEQUO assist_DATA" folder on the desktop)
"Base file name"	Specify a prefix used for the name of an automatically generated log file as up to 16 characters. (initial value: cmdlog) The file name is determined based on this text, the IP address of the device, and date and time when the file is generated. (example of a generated file name: cmdlog_192.168.0.1_15-01-01_00;00;00.txt)
"The name"	Specify and show the name of a command transmission schedule.
"Trigger"	Show a condition for executing a command transmission schedule.
"Command file"	Specify and show a path to a file defining CLI commands to be transmitted.
"Edit ..."	Edit a selected command transmission schedule.
"Add"	Add a new command transmission schedule. You can add up to 768 schedules.
"Delete"	Delete the last selected command transmission schedule.

8.11.2. Editing Command Transmission Schedule

Select the Command acquisition schedule added in the previous section and press the "Edit ..." button, and then the "Edit a schedule" screen will appear. This screen is used to define date and time as well as an interval for automatic command transmission.
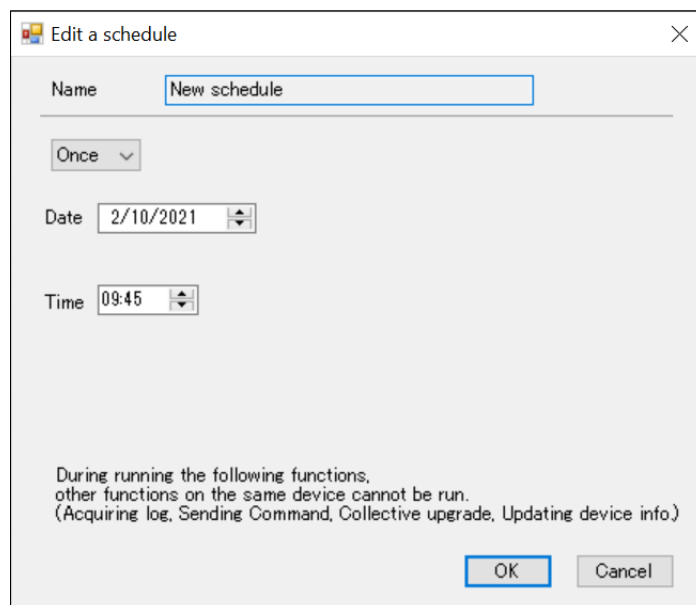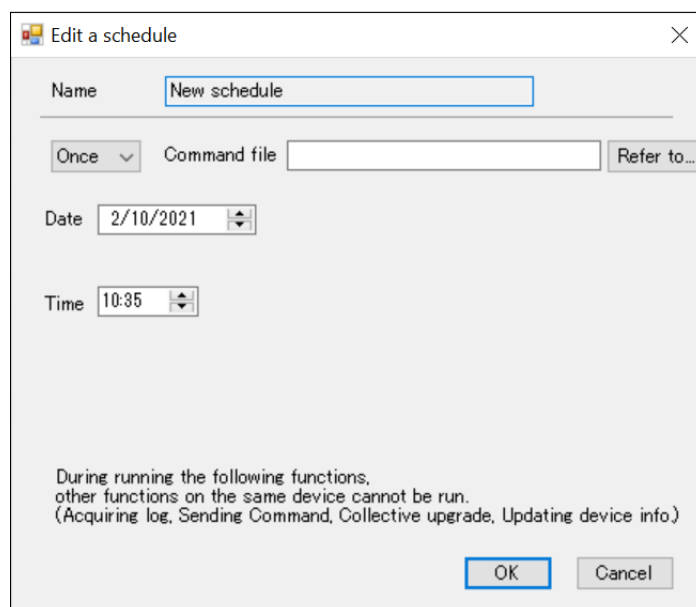

Fig. 8-11-2 Screen for Editing Command Transmission Schedule

Description of Setting Items
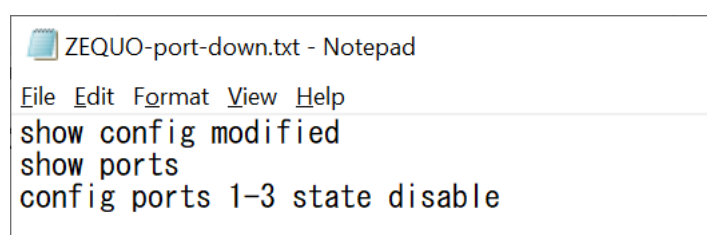
Name	Description
Execution time interval	Select one of the following: "Once.", "Every hour", "Every day", "Every week", and "Every month."
"Command file"	Specify a path to a text file describing CLI commands to be periodically transmitted to our Switching Hub. For descriptions in the command file, refer to the next page.
Date and day of week	Specify date and day of week when a command transmission process is started.
"Time"	Specify time when a command transmission process is started.

8.11.3. Creating Command File

To specify CLI commands to be actually sent by the command transmission function, describe commands (those input in a typical process) one per line in any text file. For the MNO series and XG series, in particular, begin with a command after the transition to the CLI screen.
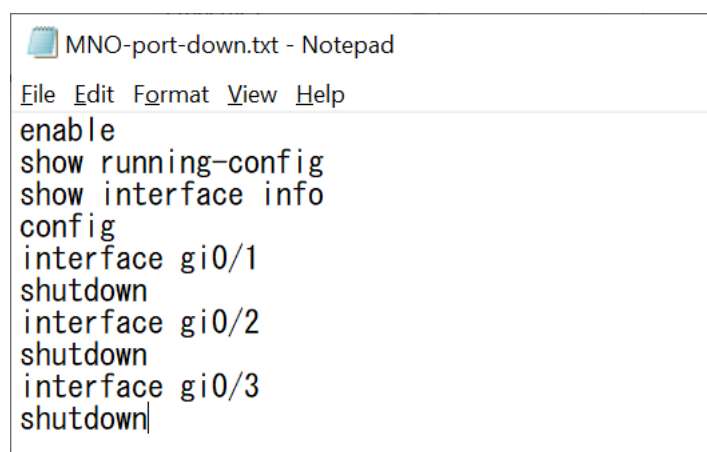
The following command file illustrates an example of executing the operations listed below.
1. Show the current configuration information.
2. Show the current port state.
3. Disable linking-up at ports 1 to 3.

```
ZEQUO-port-down.txt - Notepad
File  Edit  Format  View  Help
show config modified
show ports
config ports 1-3 state disable
```

Fig. 8-11-3 Example of Description in ZEQUO Series Command File

```
MNO-port-down.txt - Notepad
File  Edit  Format  View  Help
enable
show running-config
show interface info
config
interface gi0/1
shutdown
interface gi0/2
shutdown
interface gi0/3
shutdown
```

Fig. 8-11-4 Example of Description in MNO Series Command File

Note:
- This application transmits described texts to a device without checking syntax of commands. Be sure to check that the commands would be executed properly, and describe in the file only commands with correct syntax.
- A command file can contain up to 100-line commands.
- You do not have to describe a logout command.
- The commands "logout" and "mode" are not transmitted even when they are described.

8.11.4. Connecting Command Transmission Schedule with Device

To start a command transmission process, you should connect a command transmission schedule with a target device. Up to three command transmission schedules can be specified per device. Select a target command transmission schedule in the "TX Command 1", "TX Command 2", and "TX Command 3" columns in the device list. This will connect the schedule with the device.
You can check the operating condition of the process in the "Action log" pane.

Select	IP address	TX Command 1	TX Command 2	TX Command 3
☐	192.168.1.1	Get status	Disable	Disable

Fig. 8-11-5 Example of Connecting Command Transmission Schedule

8.11.5. Batch Command Execution

When the "Select" column in the device list is checked, the collective command execution can be performed.
This allows you to immediately transmit commands regardless of the date and time as well as interval defined in the command transmission schedule.
To execute this function, check the "Select" column of a target device for the collective command execution function and press the "Batch command execution" button.
In the "Input command" screen that appears, directly enter the command to be executed or select the command file to be executed using the "Import file" button in the "Input command" screen and press "OK."
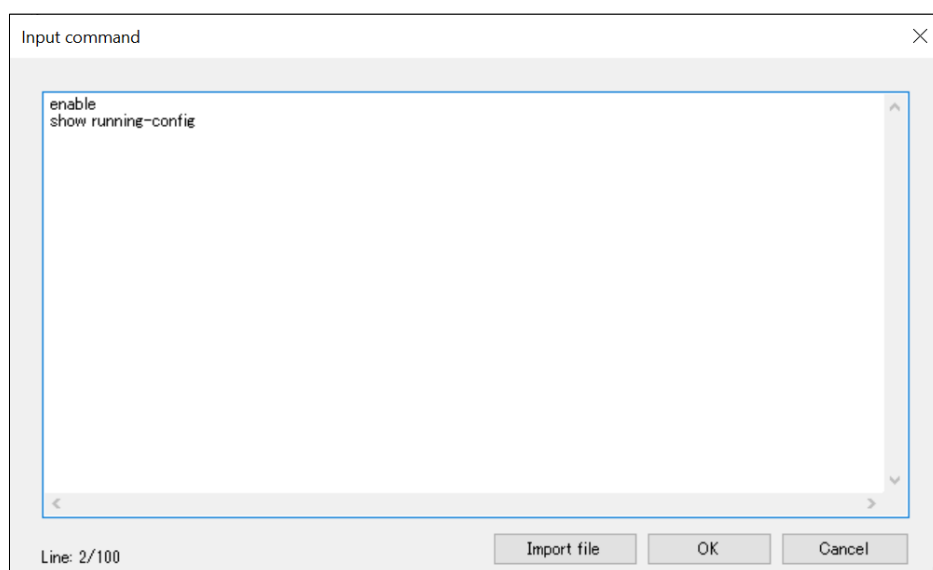
Fig. 8-11-6 Batch Command Execution "Input command" Screen

Note:
● This application transmits described texts to a device without checking syntax of commands. Be sure to check that the commands would be executed properly, and describe in the file only commands with correct syntax.
● A command file can contain up to 100-line commands.
● You do not have to describe a logout command.
● The commands "logout" and "mode" are not transmitted even when they are described.

8.12. Setting Restoration Function Setting

The operational monitor function supports the setting restoration function through the network. Since this function uses the IP address easy setting protocol, the IP address easy setting function must be supported on the target device side. Please check the following URL for applicable models.(https://panasonic.co.jp/ew/pewnw/product/detail/01.html) You must also set the target device to be restored to the factory default state before using this function.
In the ZEQUO RE/DL series, GA-MS series, ZEQUO 2300/2310, and FA/GA-ML series, use this function after setting the IP address, Telnet server, and Enable password.
This function can not restore that the setting is not included in config file. For example, it is boot file selecting setting of ZEQUO.

8.12.1. Setting Restoration Setting

To perform setting restoration, you must set the "IP address", "MAC address", and "Setting file for restoration" Restoration is performed by temporarily using the "IP address" set but the device setting after restoration will be the same as the contents of " Setting file for restoration " The "IP address" must be an address on the same network as the device where this application is running. You cannot restore a device on a different network.
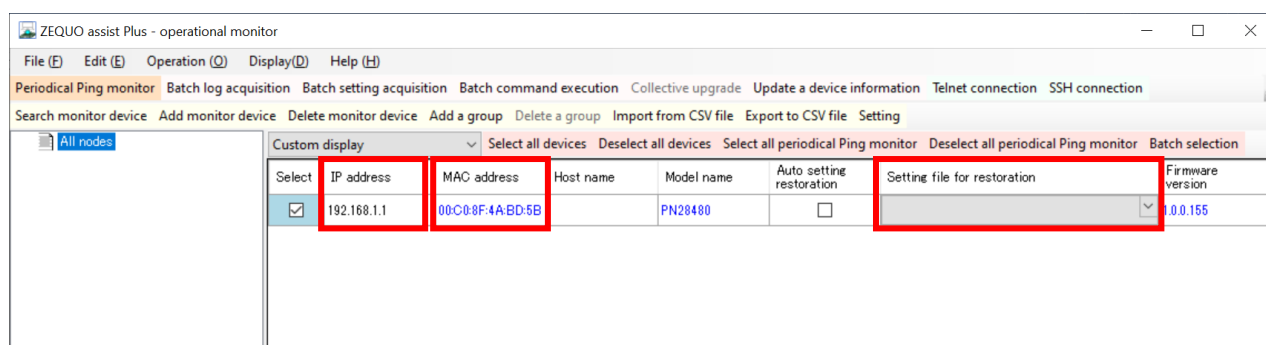
Fig. 8-12-1 Setting the Setting Restoration Function

8.12.2. Executing Setting Restoration

You can perform the setting restoration with the "Restore setting" button in the menu for any focused device in the device pane or with the "Restore setting" in the right-click menu for any device focused with the mouse. This focus doesn't relate to checkbox's selecting.
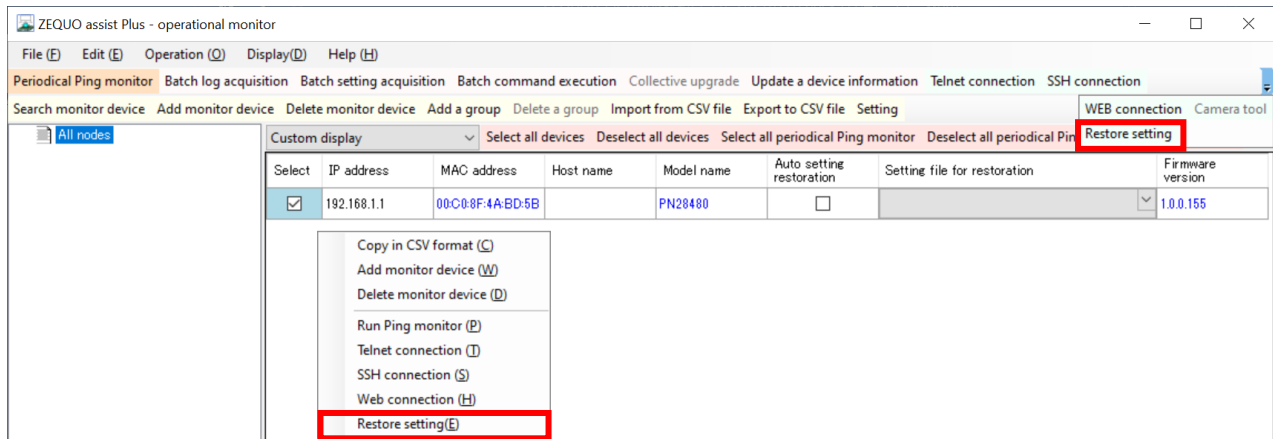
Fig. 8-12-2 Executing Settings for Setting Restoration Function

8.12.3. Automatic Execution of Setting Restoration

This function can automatically restore setting for the device connected to the network. After you make the settings described in Section 8.12.1., check "Auto setting restoration" in the device pane to automatically restore settings for the target device connected to the network.
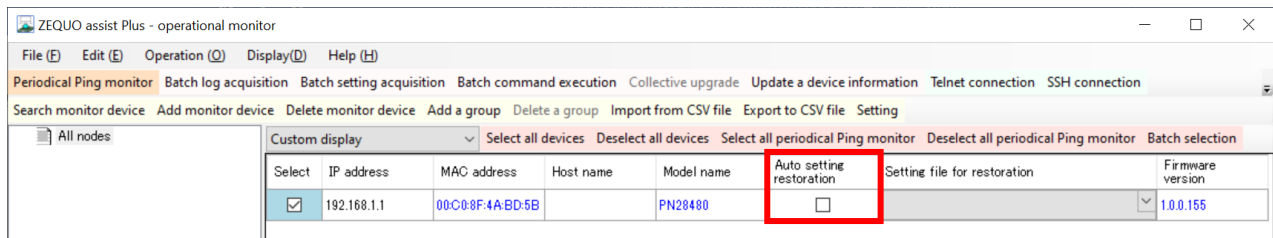
Fig. 8-12-3 Automatic Execution of Setting Restoration Function

8.13. TFTP Server Setting

Since this application contains a TFTP server function, it can use a TFTP server protocol to transfer a file to a network device. This will enable the download or upload of a configuration information file of our Switching Hub and the transfer of firmware data for upgrading.
This function can be set but does not work when the existence of our Switching Hub in the monitor device cannot be confirmed through device information acquisition.

Press "Setting" on the operational monitor window to display the "Setting" screen. Select the "TFTP" tab on the screen, and then a screen for setting a TFTP server will appear.
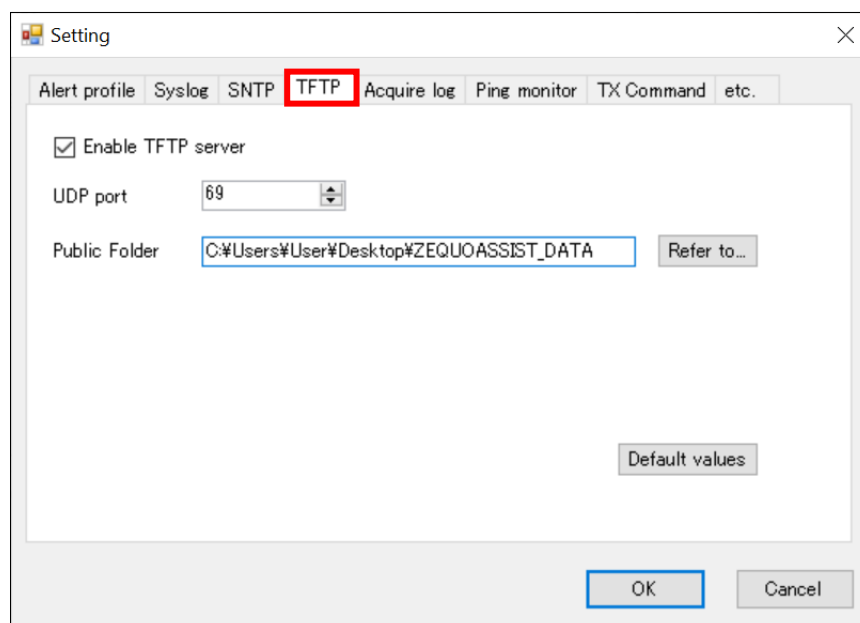
Fig. 8-13 Screen for Setting TFTP Server

Description of Setting Items

Name	Description
"Enable TFTP server"	Select this box to enable the TFTP server function. (initial value: enabled)
"UDP port"	Specify the number of a UDP port used by the TFTP server. (initial value: 69) Also, you should open this port in the firewall setting on the personal computer.
"Public Folder"	Specify a folder for saving sent or received data. (initial value: "ZEQUO assist_DATA" folder on the desktop)
"Default values"	Return setting items to their initial values.

After access to the TFTP server, its history is recorded to "Action log."

8.14. SNTP Server Setting

Since this application supports a SNTP server function, you can synchronize the time between our Switching Hub and device.
This function can be set but does not work when the existence of our Switching Hub in the monitor device cannot be confirmed through device information acquisition.

Press "Setting" on the operational monitor window to display the "Setting" screen. Select the "SNTP" tab on the screen, and then a screen for setting a SNTP server will appear.
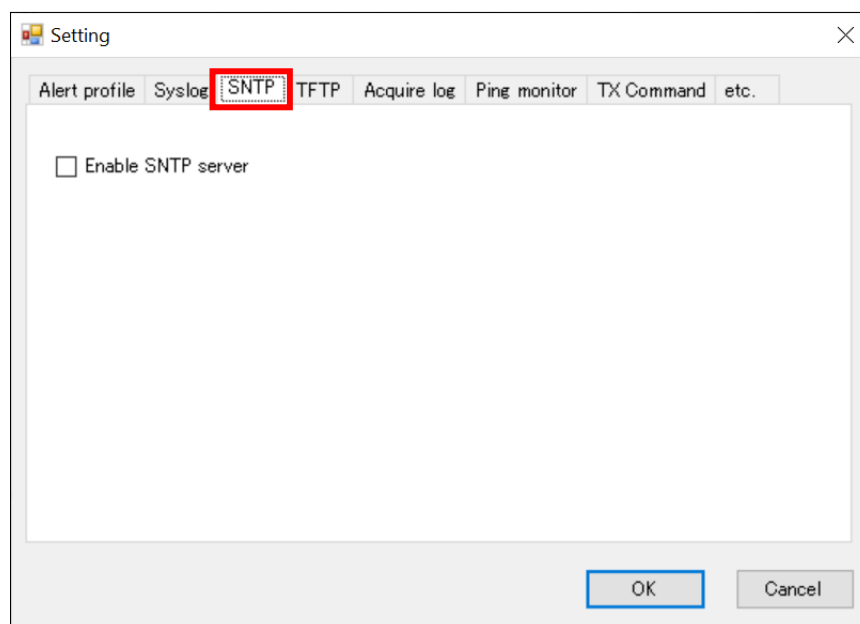
Fig. 8-14 Screen for Setting SNTP Server

Description of Setting Items

Name	Description
"Enable SNTP server"	Select this box to enable the SNTP server function (initial value: disabled).

Note:
● Rebooting is required when you set enable/disable of the SNTP server in this application. Pay careful attention when you have other applications running.

8.15. Collective Upgrade Function Setting

This application supports a "Collective upgrade" function as one of features. This function instructs our Switching Hubs (except for some part numbers) to execute the corrective upgrade of firmware. The use of this function can significantly reduce typical processes requiring login to the setting screen and input of an upgrade command for each device. This function uses the TFTP server function described in Section 8.13. to transfer firmware data to our Switching Hub. Before this operation, you should enable the TFTP server function. This function uses the TFTP server function described in Section 8.13 to transfer firmware data to our Switching Hub. Before this operation, you should enable the TFTP server function.

To execute the collective upgrade function, in the "file name of upgrade" column in the device list, you should specify firmware data prepared for each target device for upgrading. Select the list box of this column, and then firmware data files (with the extension .rom) included in the public folder of the TFTP server will appear. From the list, select an appropriate file name. Check "Select" of a target device and press the "Collective upgrade" button, and then a screen will appear confirming whether to execute this function. On the screen, press "OK" to continue it.
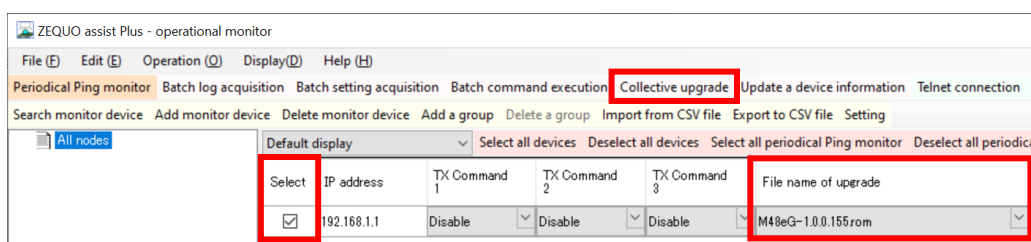
Fig. 8-15-1 Setting and Executing Collective Upgrade Function
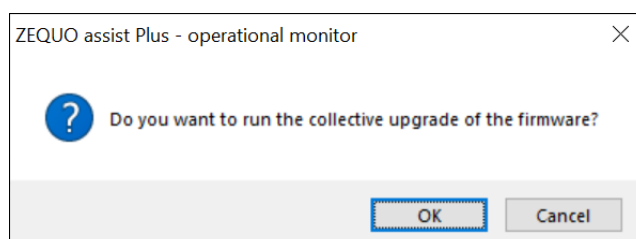
Fig. 8-15-2 Screen for Confirming Whether to Execute Collective Upgrade Function

Note:
- Since our Switching Hub is automatically reboot after the completion of the upgrade process, terminals connected under the device will be disconnected for a few minutes.
- This function instructs all selected devices to execute the collective upgrade of firmware. Depending on a network configuration, the upgrade process may fail due to the above-mentioned disconnection. To execute this function, you should first consult the network administrator for the network configuration and sufficiently pay attention to the collective upgrade procedure, including the selection of target devices and the execution order of them.

8.16. Other Settings

Press "Setting" on the operational monitor window to display the "Setting" screen. Select the "etc." tab on this screen, and then a screen for setting others will appear.
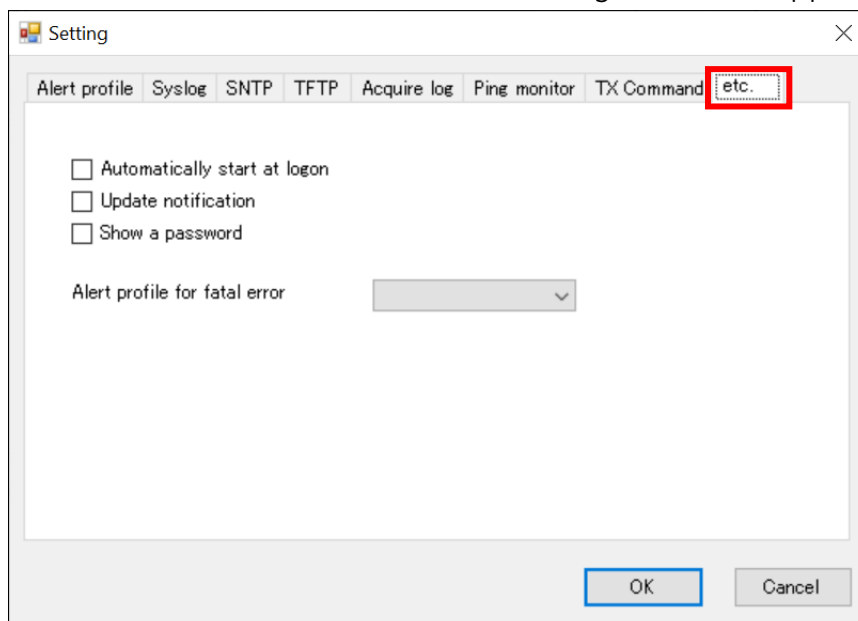
Fig. 8-16-1 Screen for Setting Others

Description of Setting Items

Name	Description
"Automatically start at logon"	Selecting this box will automatically start this application at Windows login and resume various monitor processes. (initial value: not selected) To enable this setting, we recommend that you disable the Windows user account control (UAC).
"Update notification"	When a new version of a firmware or application is provided on our WEB site, the update notification appears in "Firmware version" and "Action log" or on the lower right of the log pane (refer to Fig. 8-16-2).
"Show a password"	Selecting this box will show the content of the "Password" column in the device list. (initial value: not selected)
"Alert profile for fatal error"	Select an alert profile for notifying the administrator of a detected fatal error affecting actions of this application, such as insufficient capacity of hard disk on the personal computer.

Note:
● If there is a Virtual Adapter in the PC, various monitoring processes may not be automatically restarted when you login to Windows even if you check "Automatically start at logon". In that case, after updating the device information, enable the monitoring function manually.

When you check "Update notification", the update notification information is displayed as shown in Fig. 8-16-2.
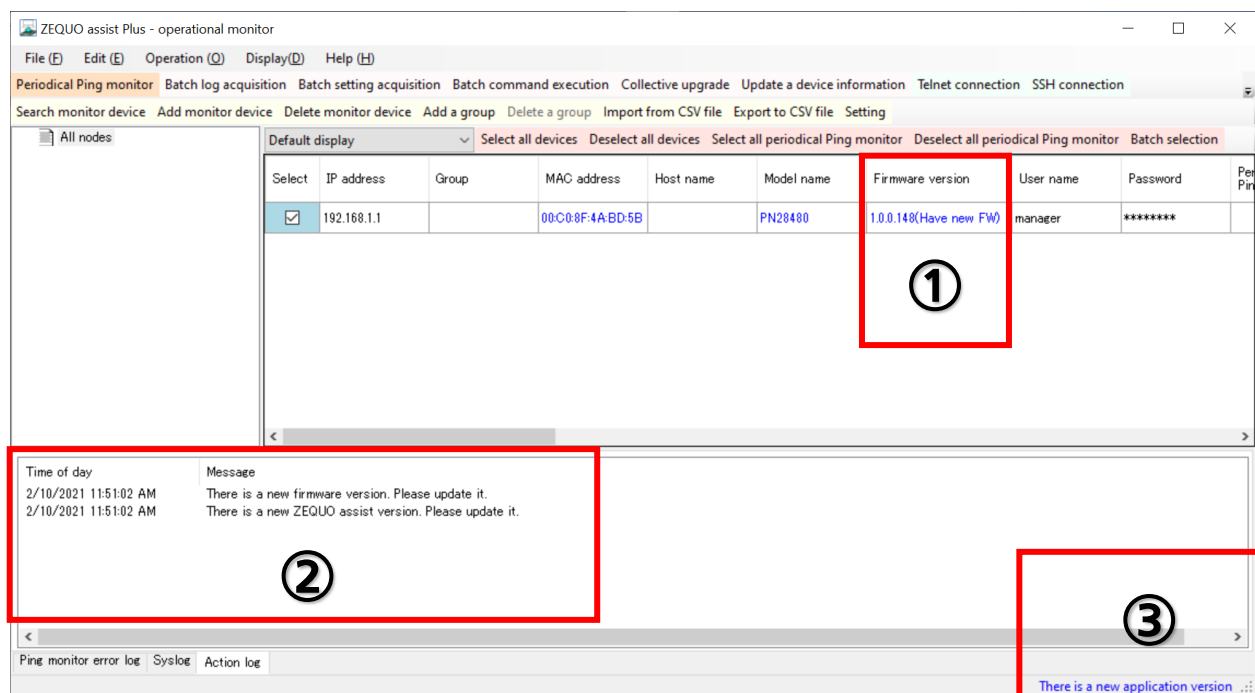
Fig. 8-16-2 Screen for Update Notifications

Screen Layout

Number	Name	Description
(1)	"Firmware version" column	When a new version of a firmware is provided on our WEB site, "(Have new FW)" appears. Click this portion to access the firmware download page on our WEB site.
(2)	"Action log"	When (1) or (3) is displayed in this application, the update notification will also appear in the "Action log."
(3)	Notification message	When a new application is provided on our WEB site, "There is a new application version" appears. Click this portion to download the latest version of this application.

Note:
● When you use "Update notification", the device that contains this application must be connected to our WEB site. Make sure that our WEB site (indicated at the end of this document) can be accessed before you use this function.

Appendix A. Specifications

○ Overview of the application
ZEQUO assist Plus (hereinafter referred to as this application) is a Windows application which combines operations and settings of our Switching Hub with various functions such as monitoring active devices.

○ Overview of the functions
This application has the following functions:
[Setting support]
   (1)   IP address easy setting function
      The IP address easy setting function provides the following settings for the ZEQUO or MNO series and XG series Switching Hub supporting this function.
      - IP address
      - Subnet mask
      - Default gateway
      - Switch name

      Specific part numbers also support the following settings in addition to the above.
       (target part name: Switch-S8GPWR+, Switch-S9GPWR)
      - Port setting
       (Auto MDI/MDI-X, MNO series power-saving mode, Energy-Efficient Ethernet)
      - Upgrade
      - Initialize settings
      - Time limit of configuration changes accepted

   (2)   ZEQUO initial setting function
      The ZEQUO initial setting function provides the following settings and the file system management of the body Flash/SD card for the ZEQUO series Switching Hub.
      - Basic setting
      - Port setting
      - VLAN/IP address setting
      - Time setting
      - QoS setting
      - Link aggregation
      - IGMP Snooping/Querier
      - Static routing (except for ZEQUO 2200/2210/2400)

(3)   Easy restore function
The easy restore function acquires and restores configuration information of the MNO series and XG series Switching Hub.

(4)   Terminal emulator function
The terminal emulator function shows the Switching Hub setting screen through the console/Telnet/SSH.
(It can write a log displayed on the screen to a text file)

[Operations support]
  (1) Operational monitor function
    i.   Periodical Ping monitor function
        Use a Ping to monitor life and death of a network device.

    ii.   Scheduled log acquisition and collective log acquisition functions
        Acquire various logs automatically for our Switching Hub.

    iii.   Collective Setting Acquisition Function
        Acquire setting information for more than one of our Switching Hubs.

    iv.   Setting Restoration Function
        Execute setting restoration to our Switching Hub.

    v.   Command transmission function
        Transmit CLI commands to our Switching Hub automatically.

    vi.   Collective upgrade function
        Instruct our Switching Hub to execute the collective upgrade of firmware.

    vii.   Syslog server function

    viii.   TFTP server function

    ix.   SNTP server function

○ Operating environment
 - Known compatible OS
    ・ Windows 7 Service Pack 1 (32-bit and 64-bit)
    ・ Windows 8.1 Service Pack 0 (32-bit and 64-bit)
    ・ Windows 10 Service Pack 0 (32-bit and 64-bit)
    ・ Windows 11

    * The operational monitor function is known compatible in the following OS:
    ・ Windows Server 2008 R2 Service Pack 1
    ・ Windows Server 2012 R2 Service Pack 0
    ・ Windows Server 2016
    ・ Windows Server 2019

 - Specifications required for the personal computer
    ・ CPU: 1 GHz or more (32/64-bit)
    ・ Memory: 1 GB or more
    ・ HDD: Free space of 1 GB or more (including capacity for .NET Framework
      redistributable package)
    ・ Screen resolution: XGA (1024 x 768) or higher

 - Known list of compatible camera tools
    ・ i-PRO Co., Ltd.　"i-PRO System Setting Tool"　Ver. 5.3.0.2/V.4.5.0.3.

 - Others
    ・ Microsoft .NET Framework 3.5 SP1 or higher and less than 4.0
    ・ Ethernet communication port
    ・ Console port

○ Supported part name and part number
   For part numbers supporting the functions of this application, refer to the "readme.txt"
   file included with the application.

Appendix B. List of Displayed Messages

The following table lists displayed errors, warnings, and confirmation messages in this application.

Common

Category	Content	Details of Messages
Error	"The application failed to initialize properly. Click on OK to terminate the application."	Operating this application requires .NET Framework 3.5 SP1 or higher and less than 4.0. Confirm that the application is installed properly, and start it again.
Error	"System.Data.SQLite.dll is not found. Please re-execute after you save it the same folder as the executable file."	Save System.Data.SQlite.dll in the same folder as the executable file, and start the application again.
Error	"Error in internal database process."	Internal database information of this application may be damaged. Reinstall this application.
Error	"General Exception Error."	It appears if the application stops due to an unexpected error. Quit the application and reboot the personal computer. If the problem is not still solved, reinstall this application.
Error	"Failed the configuration of the login ID or the password."	The management file of this application may have been damaged or deleted. Re-execute this application. If the problem is not still solved, reinstall it.
Error	"ZEQUO assist Plus has been already started."	This application was quit because multiple instances of it could not be started concurrently.

IP Address Easy Setting Function

Category	Content	Details of Messages
Error	"An available network adapter is not detected. \n Please confirm hardware configuration."	A network adapter could not be detected on the personal computer. Confirm the hardware configuration on the personal computer, and check that a network adapter is identified on Windows.

Error	"It was not able to start a communication. Please confirm the followings:
	  PC and the switch are connected with LAN cables.
	  No other setting applications are running."
		The personal computer was not able to start a communication. Confirm the connection state of the network on the personal computer. If another setting application similar to this application is running, close it and re-execute the operation.

Error	"Specified subnet mask is incorrect."	Enter a correct subnet mask.
Error	"Specified gateway is incorrect."	Enter a correct gateway address.
Error	"Specified switch name is incorrect."	The input text includes invalid characters other than one-byte alphanumeric characters and one-byte symbols. Confirm the input content.
Error	"Timeout occurred during setting execution."	There was no response from the switch for a given time after the execution of settings. Confirm that the switch can accept the IP address easy setting, and redo the process from searching devices.
Error	"Configuration failed."	It appears if the setting values of the switch are different from the configured settings after the execution of settings. Confirm that the switch can accept the IP address easy setting, and redo the process from searching devices.
Error	"Because 20 minutes pass from starting, You cannot configure the settings"	For security reasons, you cannot configure the settings after an elapse of 20 minutes since start-up for non-default settings. Turn off and on the device, or change settings on the setting screen.
Error	"Because 20 minutes pass from starting, You cannot upgrade."	When "Time limit of configuration changes accepted." is set to "20 minutes", for security reasons, you cannot upgrade the firmware after an elapse of 20 minutes since start-up. Turn off and on the device, and re-execute the operation.
Error	"Please select an item for the setting."	Select a port setting item for changing the setting.
Error	"Please set the IP address prior an upgrade."	Before upgrading the firmware, set an IP address.
Notification	"Configuration is complete."	The switch configuration has been completed correctly with the IP address easy setting function.
Notification	"Initialization to factory state is complete."	The device settings have returned to the factory default state.
Notification	"This tool appears up to 256 terminals."	256 or more terminals were detected, but the displayed number was limited to 256.

ZEQUO Initial Setting Function (Extracted)

Category	Content	Details of Messages
Error	"COM*x* is not able to be opened. Please make sure that it is not used by another application."	A selected COM port could not be accessed because it is already in use. Quit other active applications, and re-execute the operation.
Error	"Console communication error occurred. Please confirm the followings: A console cable should be connect correctly. The status LED should be green."	The application tried to establish a console communication, but there was no response. Confirm that the console cable is connected properly between the personal computer and the switch, that the switch has been started, and that the correct console port is specified. Then, re-execute the operation. Also, confirm that the baud rate of the target ZEQUO series is the factory default setting of 9,600.
Error	"Console operation error."	The instructed process could not be completed due to a console error.
Error	"Console port cannot be accessed. Please confirm a port number."	The console port cannot be accessed because you specified a port unconnected to the switch among multiple console ports. Confirm that the correct console port is specified, and re-execute the operation.
Error	"The Login ID or password is incorrect."	An incorrect login ID or login password caused the failure of login to the switch, and this operation cannot be executed. Enter correct login information set for the switch. (The initial value is both "manager") Login information is required for file management, switch setting acquisition, and initialization, in addition to configuring settings.
Error	"Setting failure occurred by using incorrect command. Setting is canceled."	Since an incorrect configuration command was executed through the direct editing of a configuration file or in other ways, the configuration process was canceled. Select whether to initialize the setting on the next screen.
Error	"The setting file is incorrect."	The file selected during configuring settings was not a configuration file. Select a correct file again.

Easy Restore Function

Category	Content	Details of Messages
Error	"The target file does not existed."	Reading the target configuration file failed. Confirm the folder name and file name of a location for saving it, and specify it and re-execute the operation.
Error	"The target file is read only."	Since the target configuration file has a read-only attribute, it could not be overwritten. Cancel the read-only attribute.
Error	"The target file is not selected."	Confirm the folder name and file name, and specify a target file.
Error	"The target folder does not existed."	Confirm the folder name, and specify a target file again.
Error	"User name is not specified."	Enter the user name of a Switching Hub, and re-execute the operation. (default: manager)
Error	"Password is not specified."	Enter the password of a Switching Hub, and re-execute the operation. (default: manager)
Error	"COM port is not specified."	Specify the COM port connected to a Switching Hub, and re-execute the operation.
Error	"Error in acquisition process."	An error occurred during the acquisition process in the Switching Hub. Reboot the Switching Hub, and re-execute the operation.
Error	"Error in internal database process."	Internal database information of this application may be damaged. Reinstall this application.
Error	"The article number of the device which is restored and the one which is acquired the target file is different."	It appears when the part number of the device where the configuration file was acquired is different from that of the device where the file will be restored. Restore the settings in the device having the part number equal to that of the Switching Hub where the file was acquired.
Error	"The selected file cannot be opened."	After a folder storing the configuration file is specified, the file may have been deleted. Specify the folder storing the configuration file again, and select the configuration file.
Error	"The target device is not supported with this tool."	It appears when settings are acquired or restored in a Switching Hub with an unsupported part number. Confirm supported part numbers.
Error	"The restoration is canceled because the firmware version is older than the configuration acquired."	Settings cannot be restored in the device with the firmware version older than that of the device where they were acquired. Upgrade the firmware of the device where they will be restored.
Error	"The selected file is not a configuration file."	It appears when the specified file is not a configuration file acquired by this application. Specify the configuration file acquired by this application.
Error	"Syntax error(s) in the selected file. (IP address)"	The configuration file may have been edited after the acquisition process. Acquire it again.
Error	"Syntax error(s) in the selected file. (subnet mask)"	The configuration file may have been edited after the acquisition process. Acquire it again.
Error	"Syntax error(s) in the selected file. (default gateway)"	The configuration file may have been edited after the acquisition process. Acquire it again.
Error	"General Exception Error."	It appears if the application stops due to an unexpected error. Quit the application and reboot the personal computer. If the problem is not still solved, reinstall this application.
Error	"Communication timeout. Please confirm the connection of the console cable."	A time-out occurred during communicating with the Switching Hub. Confirm that the console cable is connected properly, and re-execute the operation.

Error	"The switch is stopped accepting authentication because Log in RADIUS function is valid. You have to re-execute after the followings: - Reboot the switch or wait for the RADIUS authentication timeout. - Login with a terminal software. - Set \Login Method\ parameter to only \Local\."	Since the login RADIUS function is valid, this application could not access the Switching Hub. Turn off and on the switch, or use terminal software to manually log in to the switch after an elapse of a RADIUS authentication time-out period and change the setting value of "Login Method" to only "Local." Then, re-execute the operation.
Error	"Console communication error occurred. Please confirm the followings: - A console cable should be connected correctly. - The status LED should be green. - The article number of the device should be supported by this tool. Do you continue?"	A communication with the Switching Hub failed. Confirm the following items, and press the "Yes(Y)" button to re-execute it or the "No(N)" button to cancel it. - Is the console cable connected properly? - Does the status LED light up green? - Are you using the supported part number of this tool?
Error	"Communication timeout occurred. Please confirm the followings: - A console cable should be connected. - The article number of the device should be supported by this tool. - Login RADIUS function should be invalid."	A time-out occurred during communicating with the Switching Hub. Confirm the following items, and re-execute the operation. - The console cable is connected properly. - The supported part number of this tool is used. - The login RADIUS function is invalid.
Error	"Failed the configuration of the login ID or the password."	The management file of this application may have been damaged or deleted. Re-execute this application. If the problem is not still solved, reinstall it.
Error	"Login failed on the switch. ID or password is incorrect."	Enter the login name and password of a correct Switching Hub, and re-execute the operation.
Error	"This tool is stopped because RADIUS authentication function is valid."	Since the login RADIUS function is valid, this application could not access the Switching Hub. Turn off and on the switch, or use terminal software to manually log in to the switch after an elapse of a RADIUS authentication time-out period and change the setting value of "Login Method" to only "Local." Then, re-execute the operation.
Error	"Retry count was over."	A time-out occurred during communicating with the Switching Hub. Confirm the following items, and re-execute the operation. - The console cable is connected properly. - The supported part number of this tool is used. - The login RADIUS function is invalid.
Error	"COM* is not able to be opened. Please make sure that it is not used by another application."(* indicates the port number of a target COM)	A communication could not be started because the COM port is in use. Confirm that it is not used by another application, and re-execute the operation.
Error	"COM* is invalid port." (* indicates the port number of a target COM)	It appears when the COM port is disabled for any reason after it is specified in this application. Confirm that the COM port is identified correctly, and re-execute the operation.
Error	"No console port is available."	Confirm that the serial console port is identified correctly on the personal computer, and re-execute the operation.
Error	"Reboot is detected. If the status LED is	It appears when the Switching Hub is turned on or off

	orange, you have to wait until it turns green then re-execute."	while communicating with this application. If the status LED of the body lights up orange, wait until it turns green, and then re-execute the operation.
Error	"The configuration file is incorrect. Please re-execute after confirmation."	The configuration file may have been edited after the acquisition process. Acquire it again.
Error	"Timeout occurred. Please confirm the followings: The device should be powered on. A console cable should be connected correctly. The status LED should be green."	A time-out occurred during communicating with the Switching Hub. Confirm the following items, and re-execute the operation. - Does the device power on? - Is the console cable connected properly? - Does the status LED light up green?
Error	"The restoration is canceled because of the failure to log-in to the device. Please re-execute this operation after restoration the log-in setting in the device to a factory setting."	Login to the device failed because the login information of the destination Switching Hub for restoration has been changed after settings were acquired or because the database file (auth.db) of this application is not in the state when they were acquired. Return the login ID/password of the destination Switching Hub to the state when they were acquired or to the factory default setting (manager/manager), and re-execute the operation.
Error	"Specified IP address is incorrect. Please enter the appropriate IP address."	Since the input IP address is incorrect, configuration information cannot be acquired through the network. Enter a correct IP address, and re-execute the operation.
Error	"An error occurred during the network control."	The connection was terminated during the network control. Confirm the connection with the switch, and re-execute the operation.
Error	"Timeout occurred."	There was no response from the switch for a given time during the control process. Confirm the connection with the switch, and re-execute the operation.
Error	"It was not able to be connected to the target device. Please confirm that the connection of cable and the IP address of PC and re-execute."	Confirm that the UTP cable is connected properly and that the IP address of the personal computer is set correctly, and re-execute the operation. Also, confirm that the personal computer can access the device with Telnet. (In addition, refer to the section "Troubleshooting")
Warning	"The target file already exists. It is overwritten when you configure the setting acquisition."	The target file name already exits. Press the "Yes(Y)" button to overwrite the file or the "No(N)" button to cancel the operation.
Confirmation	"The acquisition of setting may fail because the firmware version of the restoration device is older than the approved one. Do you want to continue?"	It appears when settings are acquired in the device with the firmware version older than that of the known compatible firmware of this application. The acquisition process can continue, but an unexpected error may occur. Update the firmware of the destination device for restoration to the latest version in advance. Press the "Yes(Y)" button to continue it or the "No(N)" button to cancel it.
Confirmation	"There is no device information in the database. Do you restore to the original state with the default log-in ID and the default password?"	It appears when the device where the configuration file is acquired is different from the device where the file is restored. Press the "Yes(Y)" button to use the default login ID and password to restore settings, or press the "No(N)" button to cancel the operation.
Confirmation	"Do you log-in with the setting saved in database?"	Use the login ID and password set for the Switching Hub during the acquisition process to restore settings. Press the "Yes(Y)" button to execute it or the "No(N)" button to cancel it.

Confirmation	"The selected folder does not contain the configuration file."	It appears when the specified folder contains no file. Specify a folder storing the configuration file.
Confirmation	"Unexpected error may occur because the firmware version of the restoration device is older than the approved one. Do you continue?"	It appears when settings are restored in the device with the firmware version older than that of the known compatible firmware of this application. The restoration process can continue, but an unexpected error may occur. Update the firmware of the destination device for restoration to the latest version in advance. Press the "Yes(Y)" button to continue it or the "No(N)" button to cancel it.
Confirmation	"Because there are many restoration contents, it may take several minutes to complete. Do you continue?"	It appears when the number of lines in the configuration file to be restored (detailed command information) is larger than the following values. Press the "Yes(Y)" button to continue it or the "No(N)" button to cancel it. ● For M series: 500 or more lines ● For Me series: 200 or more lines

Terminal Emulator Function

Category	Content	Details of Messages
Error	"There is no file necessary for the starting of the terminal emulator."	The terminal emulator cannot be started because its executable file "terminal.exe" does not exist in the ZEQUO assist Plus folder.
Error	"Please enter a destination of the log."	"Store the log on the screen in the PC." is selected, but a location for saving a log is not specified. Press the "Reference" button to specify the location.
Error	"No console port is available."	A connection cannot be established because no console port is available on the personal computer. Confirm the hardware configuration on the personal computer.
Error	"Console port number is not specified."	Select the number of a console port to be connected.
Error	"Please specify an IP address."	No IP address is input. Press the "Start a terminal emulator" button after the input of an IP address.
Error	"The specified file has not yet been created."	The "Open the log." button was pressed before a log file is created. Press the button again after creating it.
Error	"Network cannot be reached"	The input IP address prevented a communication from reaching the network. Confirm that the IP address is correct.
Error	"Connection timed out"	A connection to the specified IP address could not be established. Confirm that the IP address of the host is correct and that the Telnet/SSH server functions work.

Troubleshooting

When you are in trouble, check the following items.

◆ Application General
- The application cannot be started due to an error.
-> To operate this application, you need "Microsoft .NET Framework" 3.5 SP1 or higher and less than 4.0. Install it on the personal computer, and start the application again.

◆ IP address easy setting function
- No Switching Hub is detected even after the search of devices.
-> For the personal computer equipped with multiple network interfaces, only a Switching Hub on the primary network interface can be detected.
  Confirm that the network having a Switching Hub is connected through the primary network interface.
-> Confirm that no packet loss or delay occurs on the network path from the personal computer to each device, and search devices again.
-> To search Switching Hubs, the personal computer should be able to access each device through an IP address easy setting protocol. Confirm that the device meets the following setting conditions.

[1] Network condition under which Switching Hubs can be detected

1	The personal computer and device should be connected within the same broadcast domain.

[2] Switching Hub setting conditions under which Switching Hubs can be detected

1	The IP address easy setting function should be enabled.
2	VLAN which the personal computer belongs to should be management VLAN. * All ports belong to VLAN1 (management VLAN) in the factory default.
3	Communications through the IP address easy setting protocol should not be filtered in the access control setting.

- The IP address setting fails due to a message.
-> For security reasons, configuration changes of the IP address easy setting cannot be accepted for non-default settings after an elapse of 20 minutes since start-up of the Switching Hub. Turn off and on the device, or use the console or Telnet/SSH to directly change the IP address on the Switching Hub setting screen.

◆ ZEQUO initial setting function
  ■ No console port appears.
  -> Since your personal computer does not contain a console port or identify it correctly, no console port can be acquired. Confirm the hardware configuration on the personal computer or set up a driver.

  ■ The process is not executed due to a console port error.
  -> No communication is available through a selected console port. Confirm that the personal computer is connected to the switch correctly through the console cable and that the cable is connected to the selected console port correctly.
  Also, confirm that the baud rate of the switch is the factory default setting of 9,600.

  ■ No setting item can be configured.
  -> Unless you select check boxes whose names begin with "Configure" (except for "set the time") in the upper part of the setting screen for each function, you cannot configure settings of the appropriate function.

  ■ Configuring settings fails.
  -> Does the part name of the switch for configuring settings match that of the generated configuration file?
  -> The format of the generated configuration file may contain an error due to the editing of the file or for other reasons. Regenerate the configuration file in this application.

◆ Easy restore function

- The application cannot acquire and restore settings due to a message "The target device is not supported with this tool."

-> Check the part number of the device again. For supported part numbers of this application, refer to the readme.txt file included with the application.

- The configuration file cannot be selected due to a message "The selected file is not a configuration file."

-> You can select only a configuration information file acquired by this application. Confirm that the selected file is a configuration information file acquired by this application and that its content has not been edited.

- Settings cannot be acquired through the network due to a message "It was not able to be connected to the target device. Please confirm that the connection of cable and the IP address of PC and re-execute."

-> Confirm that the UTP cable is connected properly and that the IP address of the personal computer is set correctly, and re-execute the operation.

-> To acquire settings through the network, the personal computer should be able to access each device with a Telnet protocol. Confirm that the device meets the setting conditions of the network connection described in the following tables.

- Settings cannot be restored due to a message "The restoration is canceled because the firmware version is older than the configuration acquired."

-> Settings cannot be restored in the device with the firmware version older than that of the device where they were acquired. Upgrade the firmware of the device where they will be restored.

◆ Network connection in the easy restore and terminal emulator functions
■ For access to a device through the network, confirm in advance that it meets the following setting conditions.

① Setting conditions for Telnet access

1	The correct IP address, subnet mask, and default gateway should be set.
2	The Telnet server function should be enabled.
3	The IP address of the personal computer should not be limited by a Telnet access restriction.
4	VLAN which the personal computer belongs to should be management VLAN. (All ports belong to VLAN1 (management VLAN) in the factory default)
5	Telnet communications should not be filtered in the access control setting.

② Setting conditions for SSH access

1	The device should support the SSH server function.
2	The correct IP address, subnet mask, and default gateway should be set.
3	The SSH server function should be enabled. (It is disabled in the factory default)
4	VLAN which the personal computer belongs to should be management VLAN. (All ports belong to VLAN1 (management VLAN) in the factory default)

◆Operational Monitor Function
■Cannot use the operational monitor function (regular Ping monitoring, batch log acquisition, batch version up, Telnet connection, SSH connection, Syslog server, TFTP server, SNTP server, update notification, setting restoration).

→Our product is required to use the operational monitor function. Refer to Chapter 8 Operational Monitor Function (P.54).