M0010497B

SANUPS

UPS Control System

SANUPS SOFTWARE

User Guide

SANYO DENKI

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ENGLISH

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1. Introduction

1.1 Outline

The UPS control system (**SANUPS SOFTWARE**) can shut down computers that are connected to a UPS and stop the UPS safely when there is power trouble. It also enables the condition of the UPS to be controlled from a computer.

1.2 Notations Used in This Document

- Unless otherwise stated, "**Windows**" is used to denote a **Windows** operating system supported by this system.
- "PC" is used to denote a **Windows** computer and "WS" is used to denote a **UNIX** computer.
- Unless the name of the operating system is stated, **UNIX** computer denotes a computer running a main **UNIX** operating system, including **Linux**.
- "Computer" is used to denote both a PC and WS.
- "Default" is used to denote the initial state after the introduction of software.
- **Windows 2000** is used for the screenshots of diagrams in this document. Although the display may vary slightly because of differences in your operating system, the functions and display items do not differ.
- "UPS" is used to denote a UPS incorporating a serial interface card or LAN interface card or a UPS with an interface for an external connection.
- "UPS with a serial interface" is used to denote a UPS equipped standard with a serial interface or a UPS incorporating a serial interface card.
- "UPS with a LAN interface" is used to denote a UPS incorporating a LAN interface card.
- "UPS control software" is used to denote **SANUPS SOFTWARE**.
- "UPS control system" is used to denote an environment combining UPS control software (**SANUPS SOFTWARE**) and a UPS.
- **"JavaVM"** or "**Java** runtime environment" is used to denote **Java Virtual Machine**.
- "Service program" is used to denote a **UNIX/Linux** daemon program to match the term to that used for the **Windows** version.
- "CUI" is used to denote a character user interface.
- "GUI" is used to denote a graphical user interface.

1.3 Main Functions of SANUPS SOFTWARE

(1) Computer automatic shutdown function

This function shuts down computers automatically when power trouble occurs or a scheduled stop time elapses. Computers can also be shut down when major breakdowns and overloads occur. A script set by the user can be run during the process of starting a shutdown. This enables running applications to be stopped and data to be saved*.

The power supply of the UPS can also be turned off after confirming that all computers have been shut down. Thus conserving battery power.

* For details on saving the data of **Microsoft Office** applications, refer to “Appendix H About Shutting Down Applications”.

(2) Computer automatic startup function

This function turns on the power supply of the UPS and then starts the computers automatically when a recovery from power trouble occurs or a scheduled start time elapses. Furthermore, you can also add the battery charge rate as a condition for automatic startup. (Only available for a supported UPS)

With some types of computer equipped with the latest power control functions, just supplying the main power will not turn on the computer. For such a computer, support is provided for turning on the computer using the ring signal or Wake On LAN function.

Note 1: The computer unit needs to include support for the ring signal and Wake On LAN functions.

Note: 2: The ring signal function is only available when you use a UPS that supports sending ring signals. These signals are referred to as "modem signals" on some computers.

< What is the ring signal function? >

A mechanism for sending a pseudo signal similar to a signal from a modem to the serial port of a computer to start the computer automatically.

The serial port and motherboard of the computer need to be supported.

< What is the Wake On LAN function? >

A mechanism for receiving a computer startup packet from the network to start the computer automatically.

The network interface card (NIC) and motherboard of the computer need to support Wake On LAN.

(3) Support for multiple platforms

Use in an environment where **Windows**, **UNIX**, and **Linux** operating systems exist together is possible.

The GUI tool is provided as a **Java** application, so the user interface is identical on different platforms.

(4) Scheduled operation function

Schedules to stop and start the UPS can be set and operation can be performed according to the schedules.

The effort required to run the system is reduced because automatic shutdown takes place when the UPS is stopped.

(5) UPS state display function

The input/output power supply state, battery state, and other states can be monitored in real time. In addition, a log is saved for changes in the states of the UPS.

(6) Message function

Messages are displayed on the computer screen to notify you when there are events such as the occurrence of or recovery from power trouble, or to notify you of the progress of operations such as an automatic shutdown.

The e-mail notification function can promptly notify the system administrator by e-mail of abnormal states such as the occurrence of a power failure. Furthermore, e-mail can be used to obtain information about conditions.

(7) UPS operating history recording function

A record of the operating state (condition information, measurement information, and event logs) of the UPS can be maintained. Outputting the operating history as a file enables processing of the data in other applications.

(8) Remote monitoring function

Support is included for the SNMP agent function. This means you can use SNMP Manager to control the UPS. Also, when the UPS is stopped from SNMP Manager, the computer can be shut down beforehand.

SNMP is a protocol for network management.
(Simple Network Management Protocol)

(9) Support for various UPS interfaces

Support for contact signal output, serial communication, LAN connection, and other external output interfaces of Sanyo's UPS lineup is flexible. You can even use the software as is if you change the UPS type.

(10) Support for a multiple system output UPS

Support is included for a UPS with multiple system output. You can set a delay for turning on/off the output for each system separately. This allows you to set the order with which to start and stop computers.

(11) UPS remote control

Stopping the UPS (shutting down the computers) from a computer running **SANUPS SOFTWARE** is possible. A battery check can also be performed.

(12) Support for Web browsers and Telnet

When the software is set up as the server version, you can display the conditions of the UPS and configure various settings by remotely operating the computer used as the server from a Java compatible browser or with Telnet.

(13) Shutdown test function

When the software is set up as the server/client version, shutdown test is available for the connected target device (client vision and "WS(Telnet connection)"device).

When add the new connected device to the system which is already operated, shutdown test is available to be done easily without real power failure.

When the software is connected to LAN interface card as Network connection, shutdown test is also available for the connected device.

(14) Confirm function of shutdown sequence

Shutdown order for the shutdown target devices is available to confirm by the screen.

(15) Supporting for the computer which supports power redundancy

When using the UPS which mount LAN interface card which supports UPS linkage function, available to make shutdown composition for the power redundancy computer by using maximum 5 UPS.

If using this function, LAN interface card which supports UPS linkage function is required.

1.4 Operating Environment

For details on the minimum system configuration required to set up and run **SANUPS SOFTWARE**, refer to Section 1.1, "Operating Environments" of "Install Guide."

2. System Configuration and Standard Operation of the UPS Control System

2.1 System Configuration

For details on the system configuration of the UPS control system, refer to Section 2.3, "Checking the Connection Method of a Computer" of "Install Guide."

2.2 Standard Operation of the UPS Control System

2.2.1 Operation Sequence

In the UPS control system, you can define as events various phenomena such a power failure/recovery, UPS breakdown, and the impossibility of recovering from a power failure. For each of these events, you can set, for example, whether to send a message, the content of the display message, and the content of the execution script.

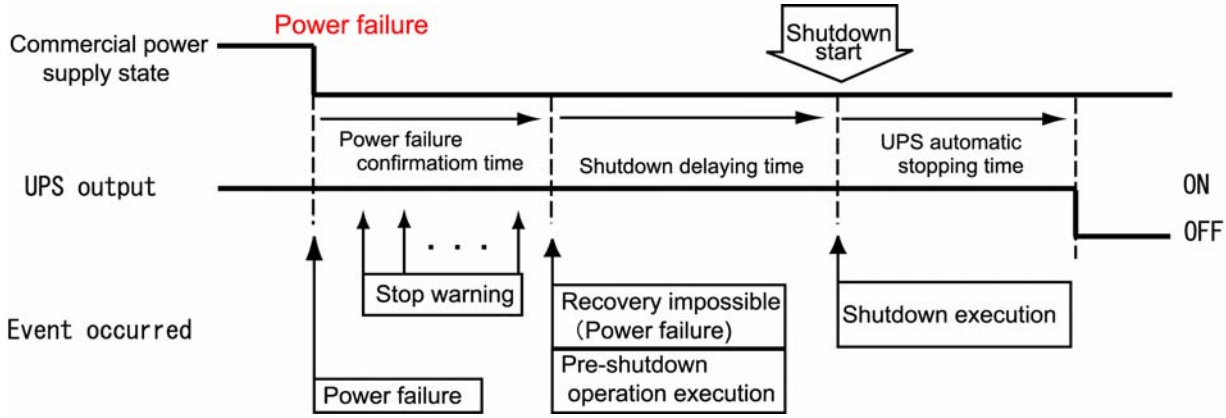
The following explanations outline the operation sequence of the UPS control system and related events that occur during operation.

(1) Sequence when power failure
(2) Sequence when battery power becomes low
(3) Remote control sequence
(4) Sequence when scheduled operation
(5) Sequence when major breakdown or overload

You can set the message to be displayed, whether to save a log, the script to be executed, and the destinations to send e-mail when each event occurs during operation. For details on each event, refer to "Appendix C Explanation of events".

（1） Power failure sequence

Operation sequence of UPS control system when power failure with no prospect of recovery occurs



●Standard operation

(a) When power failure occurs, UPS will wait for recovery from power failure during Power failure confirmation time.
If it recovers from power failure within Power failure confirmation time it will not conduct procedure hereafter.

(b) After Power failure confirmation time has elapsed, UPS will judge as recovery impossible from power failure, and carry out prior procedure for shutdown.
(Power failure operation sequence will not be suspended even when it recovers from power failure hereafter.)
In prior procedure for shutdown, it is possible to carry out procedure that was specified by a user before starting the shutdown of the computer. This time zone is called Shutdown delaying time .

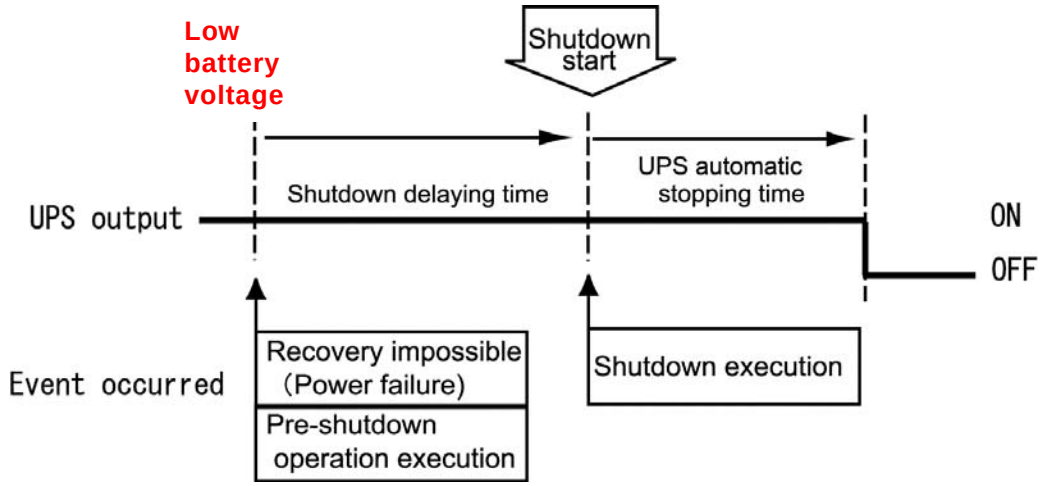
(c) After Shutdown delaying time has elapsed, the computer will start shutdown.
If automatic stop of UPS is set, UPS will stop after UPS automatic stop time has elapsed.

Please refer to Section 6.9 , "Configuring Time Settings Related to Shutdown Operations**" for time setting of UPS operation at the occurrence of power failure.**

《Caution》
Even when it recovers from power failure during Shutdown delaying time and UPS automatic stop time, the procedure will continue until shutdown. In case automatic stop of UPS for power failure is being set, the procedure will continue until it stops UPS. Please do not reboot the computer (OS) even when it recovers from power failure in the middle.

（2） Low battery voltage sequence

Low battery voltage sequence will operate when the battery voltage becomes less than a certain level because of battery life etc.



●Standard operation

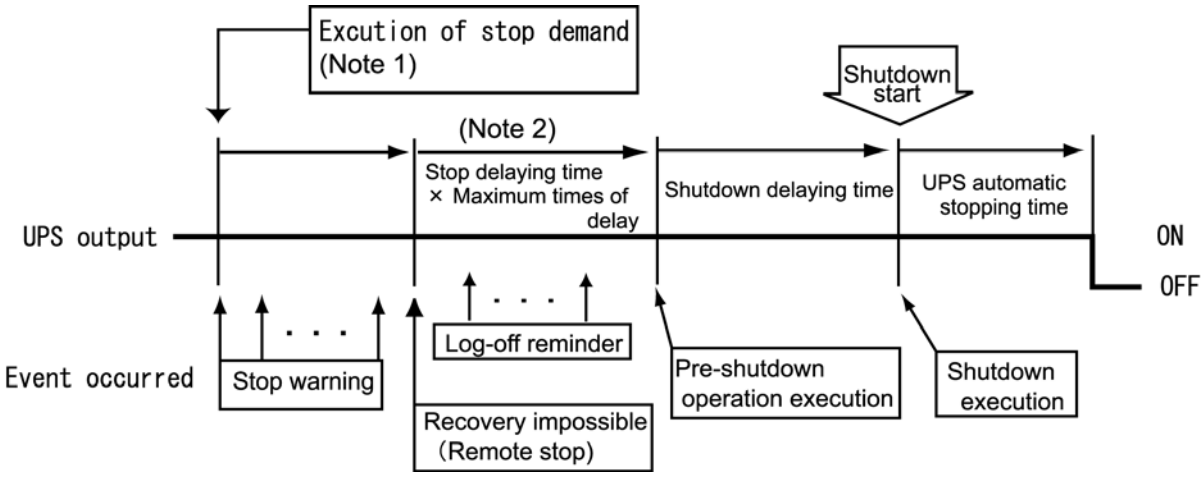
(a) When UPS detects “low battery voltage,” it will conduct prior procedure for shutdown.
In prior procedure for shutdown, it is possible to carry out procedure that was specified by a user before starting the shutdown of the computer. This time zone is called Shutdown delaying time .

(b) After Shutdown delaying time has elapsed, the computer will start shutdown.
If automatic stop of UPS is set, UPS will stop after UPS automatic stop time has elapsed.

《Caution》
If uncheck “Shutdown when the low battery voltage occurred” on setting screen of shutdown trigger, low battery voltage sequence will not start under the low battery voltage occurred.

（3） Remote control sequence

It is an operation sequence by stop control from UPS remote switch or stop control fromSNMP Manager or UPS Control Tool.



Note 1) In case of stopping by UPS remote switch, it will become recovery impossible immediately. Thus, stop notice event will not occur.

Note 2) It is valid when it is set to conduct stop delay. In such case, if there is a user that is logged on to PC, it will display a message that press for log-off and can delay prior procedure for shutdown or execution of shutdown. If it is set not to conduct stop delay, two events (recovery impossible and execution of prior procedure for shutdown) will occur conconsecutively.

●Standard operation

(a) In case of carrying out UPS stop control from SNMP Manager or UPS Control Tool, you can delay the execution of control for certain length of time by specifying the delaying time.

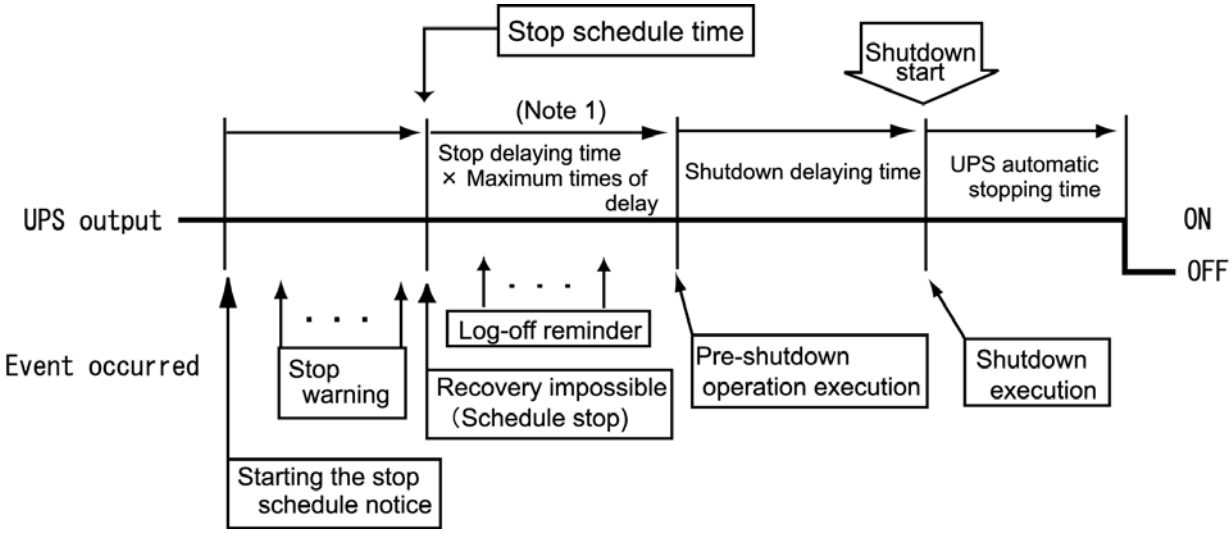
(b) If UPS is set to conduct stop delay, it will conduct delaying procedure.

(c) After Shutdown delaying time has elapsed, it will shutdown the computer and stop UPS after UPS automatic stop time has elapsed.

(d) After the stop of UPS, UPS will start by start control from SNMP Manager or UPS Control Tool.

（4） Scheduled operation sequence

It is stop operation sequence in case UPS scheduled operation is set.



Note 1) It is valid when it is set to conduct stop delay. In such case, if there is a user that is logged on to PC, it will display a message that press for log-off and can delay prior procedure for shutdown or execution of shutdown. If it is set not to conduct stop delay, two events (recovery impossible and execution of prior procedure for shutdown) will occur conconsecutively.

●Standard operation

(a) When it becomes Scheduled stop time set by schedule, it will conduct stop delaying operation.

(b) After Shutdown delaying time has elapsed, it will shutdown the computer and stop UPS after UPS automatic stop time has elapsed.

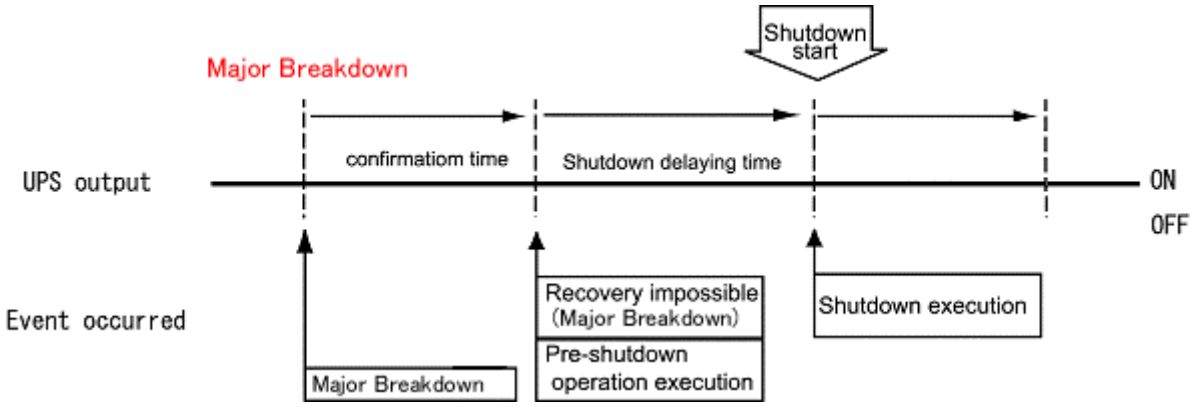
(c) When it becomes Scheduled-starting time set by schedule, it will start UPS. (Computer will turn on by starting of UPS.)

Please refer to Section 6.24 , "About scheduled operation**" for schedule setting of UPS.**

In case of using "Scheduled operation" for automatic stop or start of computer, please get power supply of the computer from UPS.

(5) Sequence when major breakdown or overload

Operation sequence of UPS control system when major breakdown occurs
(Since the operation sequence when an overload occurs is the same as that when a major breakdown occurs, read "major breakdown" as "overload" in the case of an overload.)



● Standard operation

(a) When a major breakdown occurs, the UPS will wait for recovery from for the major breakdown during the confirmation time. If the UPS recovers from the major breakdown within the confirmation time, it will not conduct the subsequent procedure.

(b) After the confirmation time has been exceeded, the UPS will judge recovery to be impossible and execute the pre-shutdown operation.
(The sequence for when a major breakdown occurs will not be suspended even if the UPS subsequently recovers from the major breakdown.)
In the pre-shutdown operation, a procedure that was specified by the user can be carried out before starting the shutdown of the computer. This time zone is called the shutdown delaying time.

(c) After the shutdown delaying time has been exceeded, the computer will start shutdown. The UPS does not stop.

For time settings related to UPS operation upon occurrence of a major breakdown, refer to Section 6.9 , "Configuring Time Settings Related to Shutdown Operations**".**

2.3 Requirements for System Configuration

2.3.1 Network environment

In order to use UPS control system under network environment, it is necessary to satisfy the following requirements.

- In case of using several computers connected to UPS with serial interface, computers must be connected by network and be able to communicate by TCP or IP.
- In case of using UPS with LAN interface, the computer and UPS must be connected by network and be able to communicate by TCP or IP.
- UPS and computer must be able to communicate even during power failure until the specified time for UPS stop has elapsed. (Router or HUB must be backed up by UPS etc.)
- UPS with LAN interface must have its own IP address.
- In case of using network name, it must be changeable to IP address by DNS etc.
- In case of assigning IP address of UPS by DHCP, the network name must be changeable to IP address by following method.

  In case of using UPS control system under network environment, register the IP address that is corresponding to MAC address of UPS to DHCP server. Then, register the IP address and the corresponding network name to either the DNS server, WINS server or the Hosts file.

2.3.2 Operational requirement

- In case of setting other PC (PC that has been installed of a UPS service of UPS control system) from **SANUPS SOFTWARE**, the user that will be using the **SANUPS SOFTWARE** must know the administrators account of that PC.
- When the IP address of UPS (LAN interface card) is changed, LAN interface card will reboot. It takes about 30 seconds to reboot. During that time, communication trouble may occur because of the disconnection of UPS communication. In addition, certain setting, monitoring and control cannot be conducted during that period. However, there is no influence on the operation of the main body of UPS even when the LAN interface card reboot.
- During waiting by power control function, such as suspension, the operation of **SANUPS SOFTWARE** cannot be guaranteed. Thus, never forget to nullify the power control function such as suspension for usage.
- With OS since **Windows 2000**, you cannot start the UPS control system by guest account.
- In case its structure is serial connection with UPS, the maximum number of device that can be registered is 50.
- In case its structure is serial connection with UPS, one serial port that the application can use for serial communications is needed.
- On UPS with LAN I/F card, maximum number of registrable devices depends on used LAN I/F card type. (up to 10, or up to 50)
  Refer to a LAN I/F User's guide for details.

3. Installation

For details on the installation procedure for **SANUPS SOFTWARE**, refer to Section 3, " Installing SANUPS SOFTWARE" of "Install Guide."

4. Setup

After **SANUPS SOFTWARE** installed, use the wizard described in Section 4.1 , "Using the Setup Wizard (GUI Configuration Tool) " to register the UPS. (If you want to use the software in a window-less environment, see Section 4.2 , "Using the SETUP Wizard (CUI Setup Tool)" and register the UPS. When the registration is finished, **SANUPS SOFTWARE** can start normally.

4.1 Using the Setup Wizard (GUI Configuration Tool)

On the computer where **SANUPS SOFTWARE** is installed, if you start **SANUPS SOFTWARE** while the connected UPS is not registered (immediately after the installation or when the connected device is deleted), the setup wizard starts automatically. When this happens, register the connected UPS.
Content of the registration created using the connection wizard can be changed even after the registration operation.

The UPS can be registered on the computer using one of the following three connections.

Connection Type	See Section	Comment
UPS to server	4.1.1	※1
UPS to client	4.1.2	※2
UPS to network	4.1.3	※3

※1 When the computer is in direct serial connection or contact connection with the UPS

※2 When the computer is connected to the computer described in (※1) via a network

※3 When the computer is connected with the UPS (with LAN interface installed) via a network

Check the connection type and then proceed to the appropriate section, and then perform the setup.

> The screenshots used here are taken from the Windows version.
> Except for the difference in display due to the font used, the message content and operation are all the same.

> Caution to use GUI tool by Solaris11
> To use GUI tool by Solaris11, disable "Num Lock" key.
> If "Num Lock" key is able, "Tab" key or "Back space" key might be invalid.

4.1.1 If the computer is a server connected to the UPS

If the computer where **SANUPS SOFTWARE** is installed is connected to the UPS using a serial cable, use the following procedure to set up **SANUPS SOFTWARE**.

Note: Before using the wizard to set up **SANUPS SOFTWARE**, make sure the computer and the UPS are connected using a serial cable.

(A) Start **SANUPS SOFTWARE** (connection wizard).

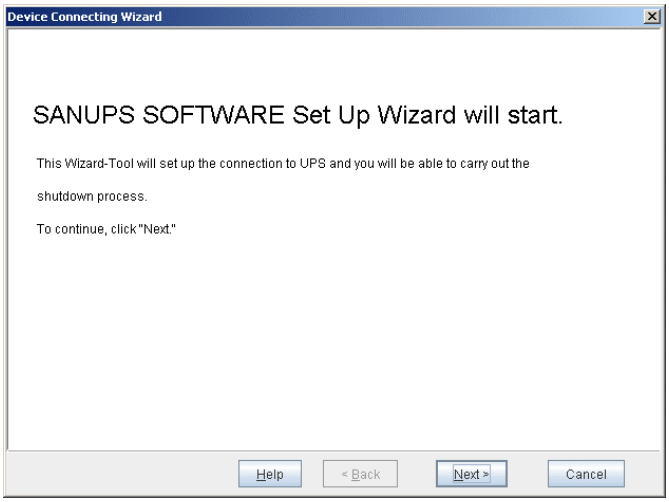
・If the OS is **Windows**

From the [Start] button on task bar, select [All Programs] – [UPS control system] – [SANUPS SOFTWARE].
(For **Windows2000**, from the [Start] button, select [Programs] – [UPS control system] – [SANUPS SOFTWARE].)

> **<Information>**
> For **Windows Server 2008 Server Core** or **Windows Server 2012 Server Core,** move to the folder where **SANUPS SOFTWARE** is installed, and then execute "sg4 0" using command line.

・If the OS is not **Windows**

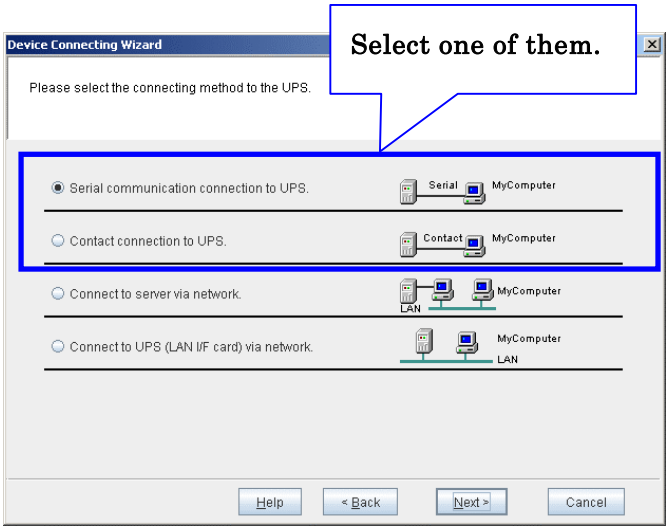
Move to the directory where **SANUPS SOFTWARE** is installed, and then execute **[./sg4 0].**



After **SANUPS SOFTWARE** starts, the screen shown on the left appears.

Click the **"Next"** button to move to the next screen (for selecting a UPS connection method).

(B) Select a UPS connection method.

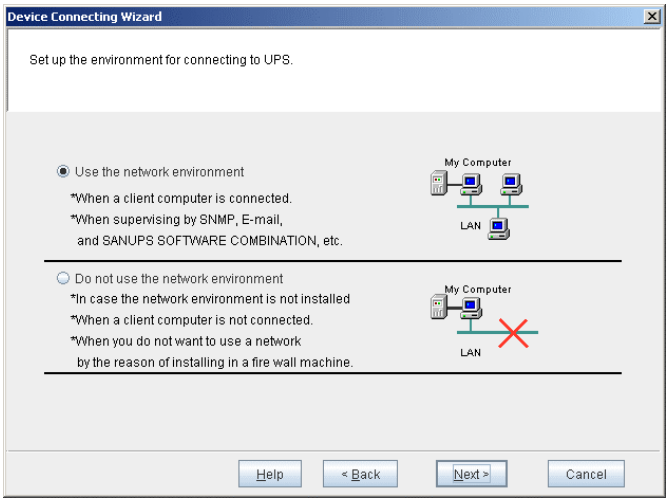


Select a connection method to connect the UPS. If the UPS is connected to a server, select serial communication or contact connection.

Click the **"Next"** button to move to the next screen (for selecting a UPS environment).

Connection Method	Description
Connect using serial communication	Use this method for UPS with serial interface or if a serial interface card is installed in the UPS.
Use contact connection	Use this method if the "External Transfer Signal" connector (for the contact connection) on the UPS main unit is used to connect to the computer.

(C) Select a UPS environment to use.



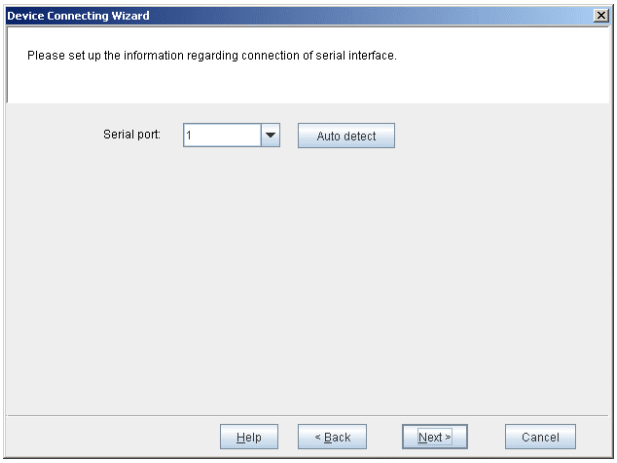
Select the environment that is used by the computer.
(See the following table for the selection.)

Click the **"Next"** button to move to the next screen (for setting up the serial cable connection).

SANUPS SOFTWARE Usage Environment	Computer Environment
Use network environment	・if a client computer is used in the connection ・if SNMP, E-mail, **SANUPS SOFTWARE COMBINATION**, etc. are used for monitoring
Do not use network environment	・if no network environment is installed ・if no client computer is connected ・if you do not want to use the network because, for example, you want to install on the firewall machine

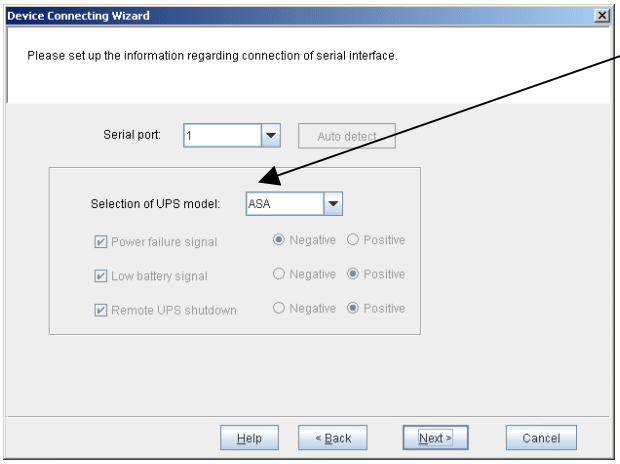
(D) Set up serial cable connection.

(a) If serial connection is used



Select the serial port number of the computer. You can use the **"Auto detect"** button to detect the serial port number of the port connected serially to the UPS.
Click the **"Next"** button to move to the next screen (for entering UPS account information).

(b) if contact connection is used



From the **[Selection of UPS model]** drop-down list, select the type of UPS to connect. (A signal setting appropriate for the selected UPS is specified automatically.).
Click the **"Next"** button to move to the next screen (for entering UPS account information).

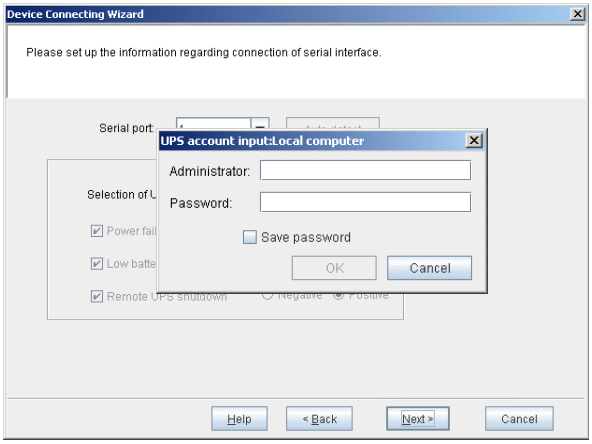
※To use a UPS that is not available on the [Selection of UPS model] drop-down list, select [Others] from the list, and then set up the polarity information of the external transfer signal of the UPS.

※If contact connection is used, a dedicated connection cable is required.

< About selecting a COM port >

If the computer has serial ports labeled A, B, etc, read A as 1, B as 2 when selecting a serial port to connect.

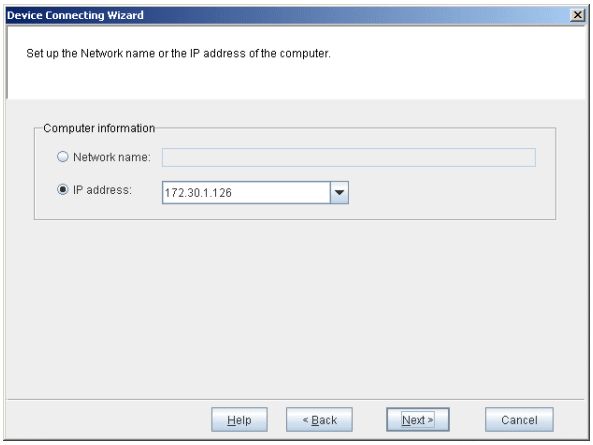
(E) Enter the UPS account information.



Enter account information of the UPS administrator.
Use the following default values for the input.
Administrator: **upsadmin**
Password : **UpsAdmin**(Note1)
Then, click the **"OK"** button.
After user authentication is performed, proceed to the next screen.

(Note1) The password is case sensitive.

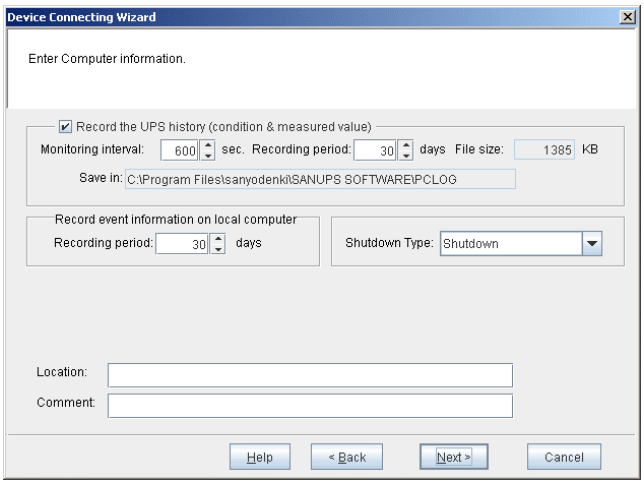
(F) Enter information about the computer (1)



From the "Set up environment for connecting to UPS" screen described in section (C), if you have selected the **"Use the network environment"** option, this screen appears.
For the computer information, enter a network name or select an IP address.

Click the **"Next"** button to move to the next screen (for entering information about the computer (2)).

(G) Enter information about the computer (2)



On this screen, specify how to record the UPS history and event information on the computer. You can move to the next screen with no problem while leaving the **"Location"** and **"Comment"** text boxes blank.
Click the "Next" button to move to the next screen.

< Information >

If you connect multiple computers to the UPS and then manage them, the management will become easier if you enter the "Location" and "Comment" text boxes.
After complete set up, settings information can be changed from settings screen. Please refer to "6. Explanation of Functions" of users guides to change settings.

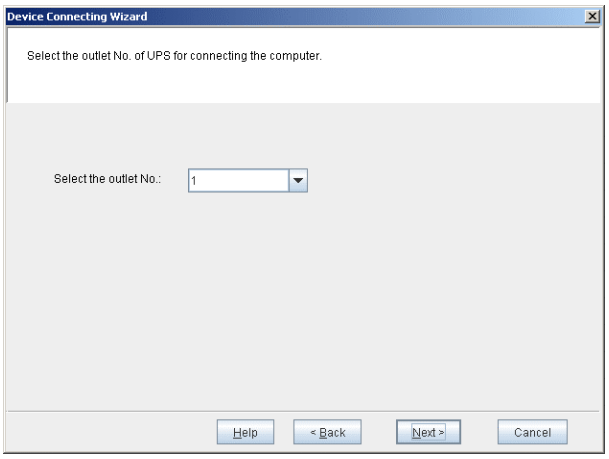
※ Types of shutdown and how to use them

Shutdown Type	Description
Shutdown	Shut down the computer.
Shutdown and turn off power	After shutting down the computer, turn off its power. The power referred here is not the output power of the UPS, but the power of the computer itself. (This shutdown type can be used only for **Windows** that supports APCI [Advanced Power Configuration Interface].)
Suspend	Suspend the computer. (This shutdown type can be used only if the suspend function on **Windows** is enabled.) Do not use this shutdown type when you perform scheduled operation. If you use this shutdown type and perform scheduled operation, the popup messages that accompany the suspend and resume operations are stored.

If use **Windows** and start automatically after power recover, please refer to "About constraint of automatic starting function of a computer" of "Appendix A Precautions for using **Windows**".

(H) Specify the UPS output outlet connection

This screen appears if the UPS has multiple system outputs and the serial cable connection setting is **[Serial communication connection to UPS]**.
If the UPS does not have multiple system outputs or the serial cable connection setting is **[Contact connection to UPS]**, this screen does not appear. In this case, the outlet becomes fixed at [1] automatically.

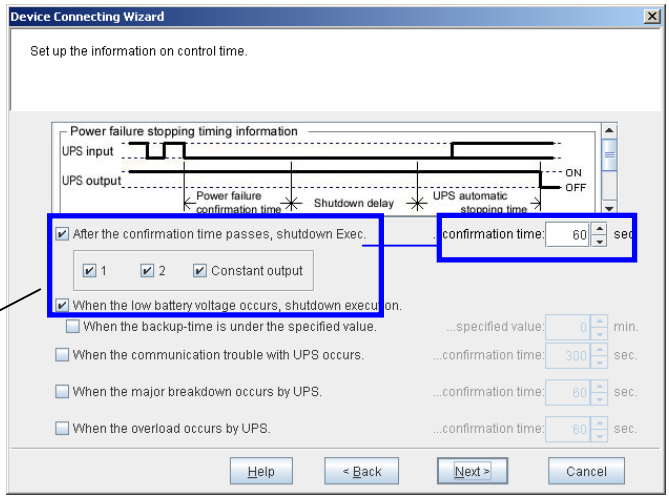


Select an output outlet number for the UPS connected to the computer.

Click the **"Next"** button to move to the next screen.

While "Constant output" allows connection of peripheral devices that do not require shutdown, do not connect to the computer using "Constant output".

(I) Set up the information on UPS control time (1)



Use this screen to specify how to control the UPS.

After specifying the information, click the **"Next"** button to move to the next screen (for setting up the information on UPS control time (2)).

Specify whether to perform the shutdown sequence for the computer registered on the outlet of "1", "2", or "Constant output" (outlet "0") if the power failure state continues during the "confirmation time" period.
(For UPS that does not have the multiple system output function, only outlet "1" can be set.)

- **If the check box of a output number is selected**

The shutdown sequence for the computer connected/registered on the outlet of the selected number is performed when there is a power failure.

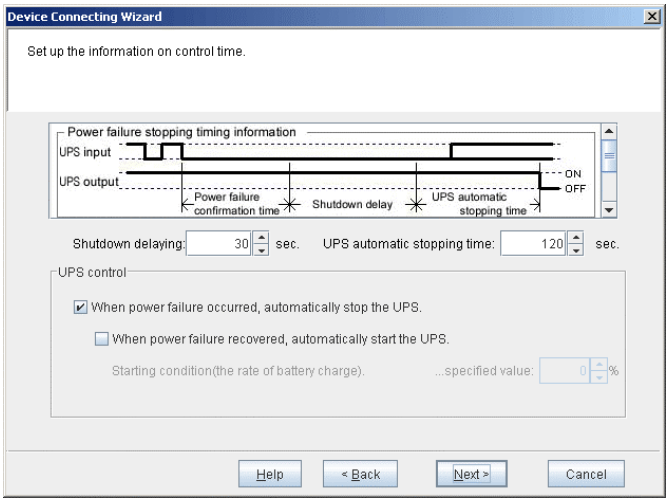
- **If the check box of a output number is cleared**

The shutdown sequence for the computer connected/registered on the outlet of the selected number is not performed when there is a power failure. (Shutdown is performed when the battery voltage is low.)

Also, if exclude the check of “After the comfirmation time passes, shutdown Exec.”, All computers will not be performed shutdown sequences until low battery voltage is occurred during power failure.
Otherwise, if exclude the check of “When the low battery voltage occurs, shutdown execution.”, shutdown will not be performed after low battery voltage is occurred.

Attention:
If exclude the both checks of “After the comfirmation time passes, shutdown Exec.” and “When the low battery voltage occurs, shutdown execution.”, computer will not be shutdown.
Under long time power failure, UPS stop may occurred by battery discharge cut-off instead of automatically shutdown.
Please understand those operation, if exclude those two setting items.

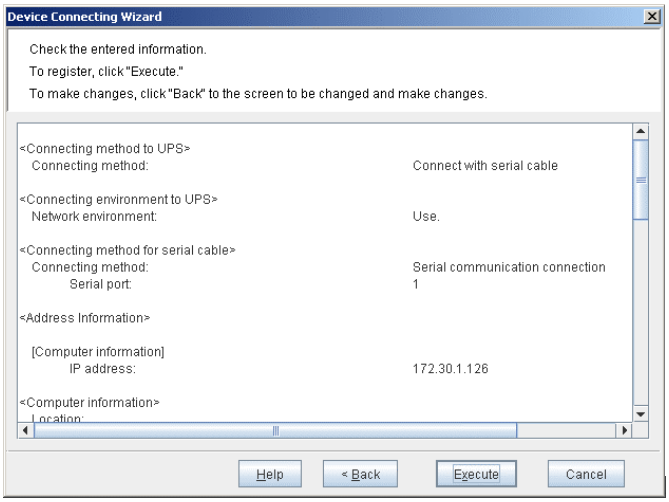
(J) Set up the information on UPS control time (2)



Use this screen to continue the operation on the previous screen and specify how to control the UPS.

After specifying the information, click the **"Next"** button to move to the next screen (for checking the entered information).

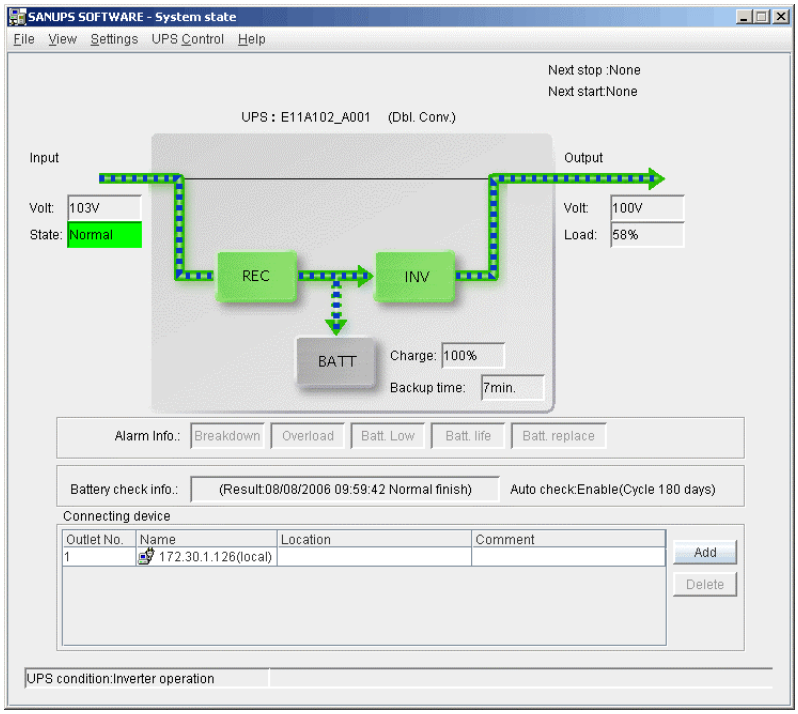
(K) Check the entered information



Use this screen to check the information entered during the wizard operation. If there is no problem in the entered information, click the "Execute" button.

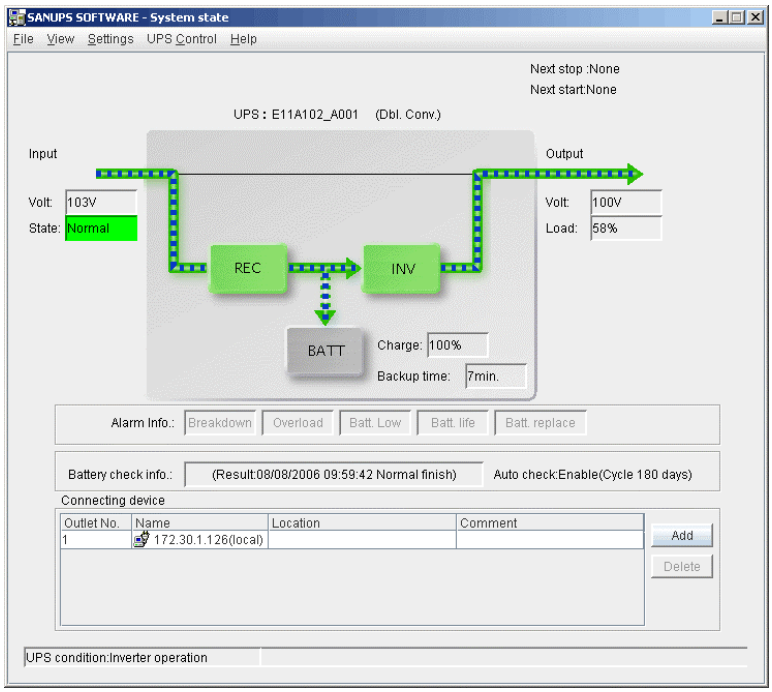
If you want to change any information, click the "Back" button to return to the appropriate screen.

↓ Click the **"Execute"** button. (Setup is finished.)



The **SANUPS SOFTWARE** main screen appears.

(L) Check the connection of the local computer



"Connecting device" indicates that the local computer is registered.

The computer indicated as **(local)** is the local computer.

(M) Check the UPS connection

① Perform a simulated power failure such as turning off the UPS.

② Check that a power failure message appears on the screen.

③ After the message appears, immediately perform recovery from the simulated power failure.

If no power failure message appears on the screen after you perform a simulated power failure, check the following. ・ Is the UPS connected correctly using a serial cable? ・ Is the **SANUPS SOFTWARE** service running**?** (For information on operation of the **SANUPS SOFTWARE** service, refer to the "Appendix A Operation of the service".)

4.1.2 If the UPS is connected to a client

If multiple computers are connected to the UPS that has a serial interface, for the computers other than the one that has been set up as server version of **SANUPS SOFTWARE**, set them up as **SANUPS SOFTWARE** client versions, using the following procedure.

(A) Start **SANUPS SOFTWARE** (connection wizard).

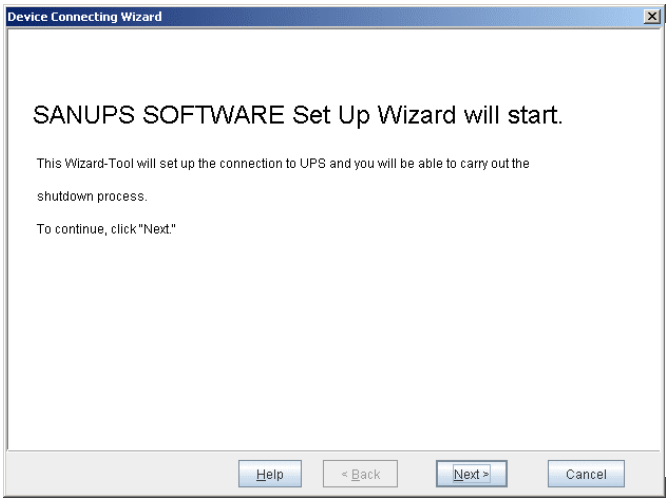
・If the OS is **Windows**

From the [Start] button on task bar, select [All Programs] – [UPS control system] – [SANUPS SOFTWARE].
(For **Windows2000**, from the [Start] button, select [Programs] – [UPS control system] – [SANUPS SOFTWARE].)

<Information>
For **Windows Server 2008 Server Core** or **Windows Server 2012 Server Core,** move to the folder where **SANUPS SOFTWARE** is installed, and then execute "sg4 0" using command line.

・If the OS is not **Windows**

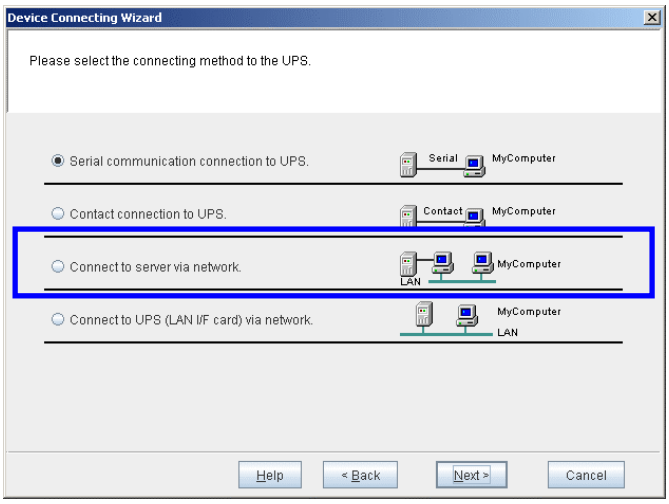
Move to the directory where **SANUPS SOFTWARE** is installed, and then execute **[./sg4 0].**



After **SANUPS SOFTWARE** starts, the screen shown on the left appears.

Click the **"Next"** button to move to the next screen (for selecting a UPS connection method).

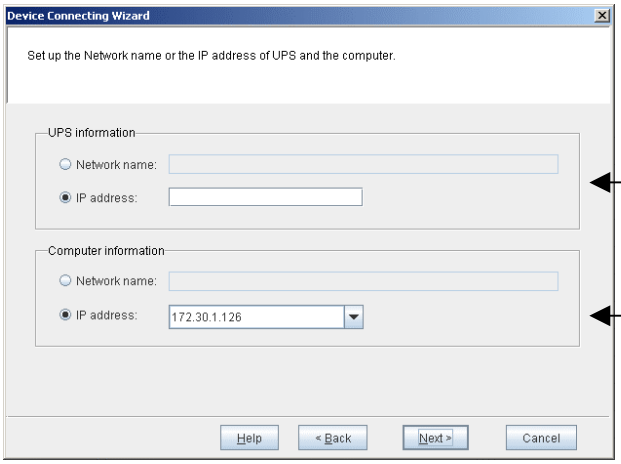
(B) Select a UPS connection method.



Select the **"Connect to server via network"** option.

Click the **"Next"** button to move to the next screen (for network setting).

(C) Set up the network



Specify the network information.
Click the **"Next"** button to move to the next screen.

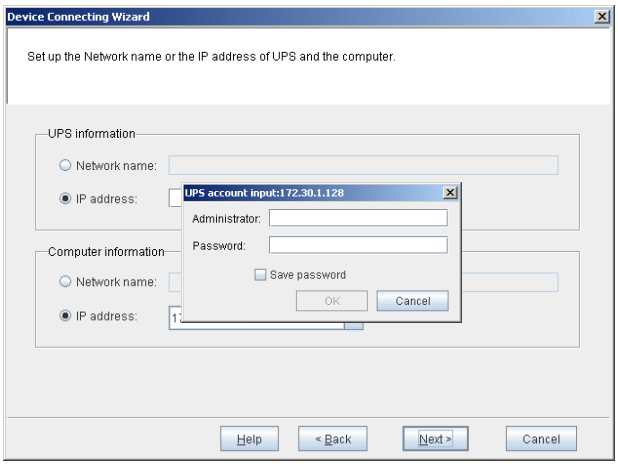
Specify the network information of the server computer.

Specify the network information of the local computer.
If multiple network cards are used, select the network used for the connection.

Parameter	Description
UPS information	Specify the network information of the server computer. Enter a network name or IP address. (※1)
Computer information	Specify the network information of the local computer. Enter a network name or IP address. (※1)

(※1) If the computer is managed by DHCP, etc. based on network name, use **[Network name]**.

(D) Enter the UPS account information

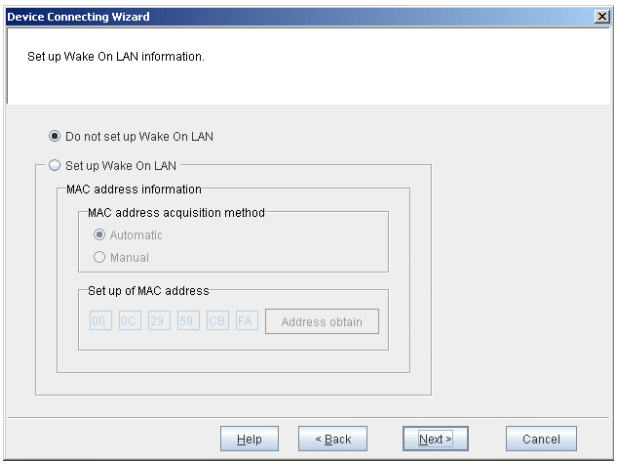


Enter the account information of the UPS administrator.
Enter the account of the server administrator.
Click the **"OK"** button.
After the user authentication is performed, move to the next screen.

(Note 1) The password is case sensitive.

(E) Set up Wake On LAN

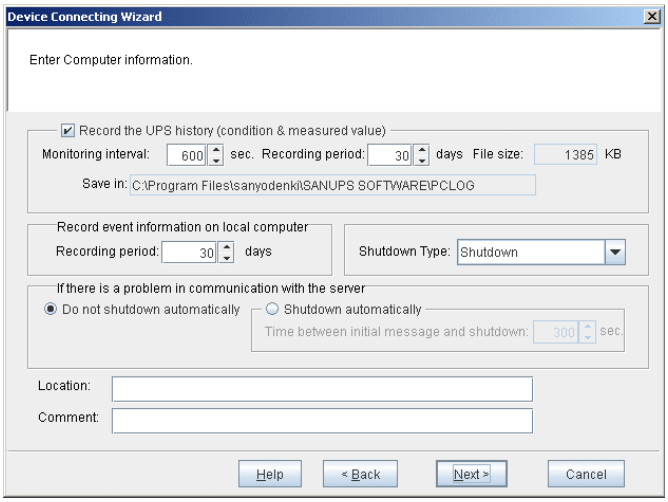
If the computer supports the Wake On LAN function, after power is supplied from the UPS, the power of the computer can be turned on automatically.



Set up the Wake On LAN function. (If you do not know the computer environment, select the **"Do not set up Wake On Lan"** option. Regardless of this setting, the operation of the UPS management system is not affected.)
Click the **"Next"** button to move to the next screen. (for entering computer information).

<Information>
After complete set up, settings information can be changed of this screen. Please refer to “6. Explanation of Functions” of users guides to change settings.

(F) Enter the computer information



On this screen, specify how to record the UPS history, shutdown type, location, and other accessory information. Also, specify what to do if communication with the server is cut off.
You can move to the next screen with no problem while leaving the **"Location"** and **"Comment"** text boxes blank.
Click the **"Next"** button to move to the next screen.

< Information >
If you connect multiple computers to the UPS and then manage them, the management will become easier if you enter the "Location" and "Comment" text boxes.

※ Types of shutdown and how to use them

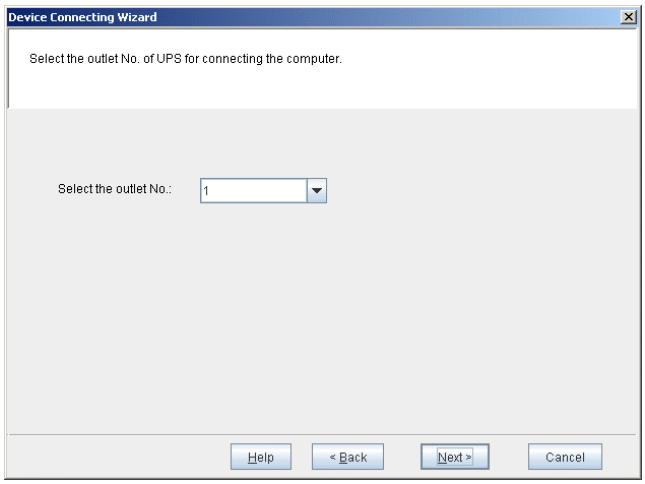
Shutdown	Description
Shutdown	Shut down the computer.
Shutdown and turn off power	After shutting down the computer, turn off its power. The power referred here is not the output power of the UPS, but the power of the computer itself. (This shutdown type can be used only for **Windows** that supports **APCI [Advanced Power Configuration Interface]**.)
Suspend	Suspend the computer. (This shutdown type can be used only if the suspend function on **Windows** is enabled.) Do not use this shutdown type when you perform scheduled operation. If you use this shutdown type and perform scheduled operation, the popup messages that accompany the suspend and resume operations are stored.

If use **Windows** and start automatically after power recover, please refer to "About constraint of automatic starting function of a computer" of "Appendix A Precautions for using **Windows**".

(G) Specify the UPS output outlet connection

This screen appears when the UPS has multiple system outputs and the serial cable connection setting of the **SANUPS SOFTWARE** server version is **"Serial communication connection to UPS"**.

If the UPS does not have multiple system outputs or the serial cable connection setting of the **SANUPS SOFTWARE** server version is **"Contact connection to UPS"**, this screen does not appears. In this case, the outlet becomes fixed at [1] automatically.

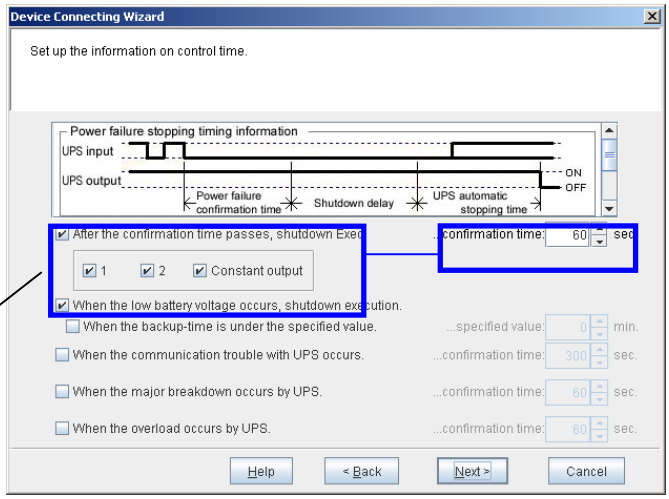


Select an output outlet number for the UPS connected to the computer.

Click the **"Next"** button to move to the next screen..

While "Constant output" allows connection of peripheral devices that do not require shutdown, do not connect to the computer using "Constant output".

(H) Set up the information on UPS control time (1)



Use this screen to specify how to control the UPS.

After specifying the information, click the **"Next"** button to move to the next screen (for setting up the information on UPS control time (2)).

Specify whether to perform the shutdown sequence for the computer registered on the outlet of "1", "2", or "Constant output" (outlet "0") if the power failure state continues during the "confirmation time" period.
(For UPS that does not have the multiple system output function, only outlet "1" can be set.)

- **If the check box of a output number is selected**

The shutdown sequence for the computer connected/registered on the outlet of the selected number is performed when there is a power failure.

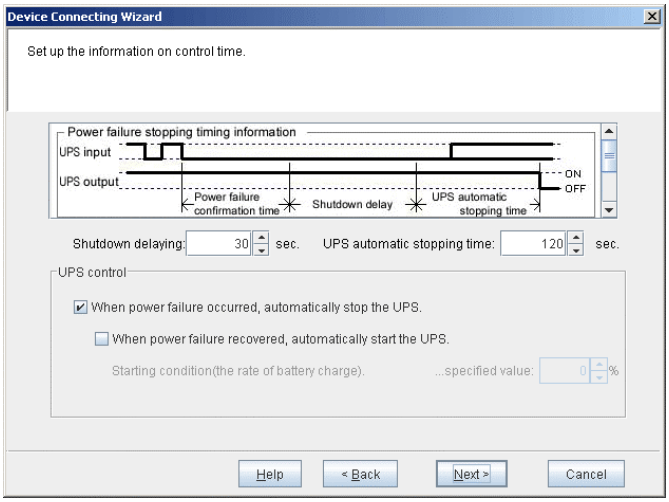
- **If the check box of a output number is cleared**

The shutdown sequence for the computer connected/registered on the outlet of the selected number is not performed when there is a power failure. (Shutdown is performed when the battery voltage is low.)

Also, if exclude the check of “After the comfirmation time passes, shutdown Exec.”, all computers will not be performed shutdown sequences until low battery voltage occurred during power failure.
If exclude the check of “When the low battery voltage occurs, shutdown execution.”, Shutdown will not be performed under low battery voltage occurred.

Attention:
If exclude the both checks of “After the comfirmation time passes, shutdown Exec.” And When the low battery voltage occurs, shutdown execution.”, shutdown computer will not be performed under power failure.
Under long time power failure, UPS stop may occure by battery discharge cut-off instead of automatically shutdown.
Please understand those operation, if exclude those two setting items.

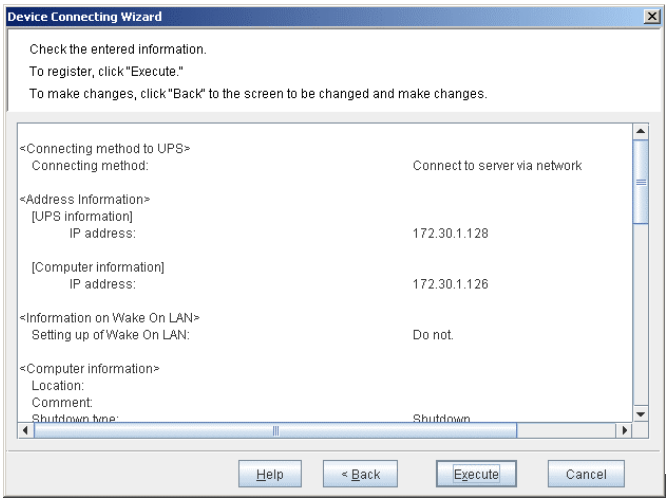
(I) Set up the information on UPS control time (2)



Use this screen to continue the operation on the previous screen and specify how to control the UPS.

After specifying the information, click the **"Next"** button to move to the next screen (for checking the entered information).

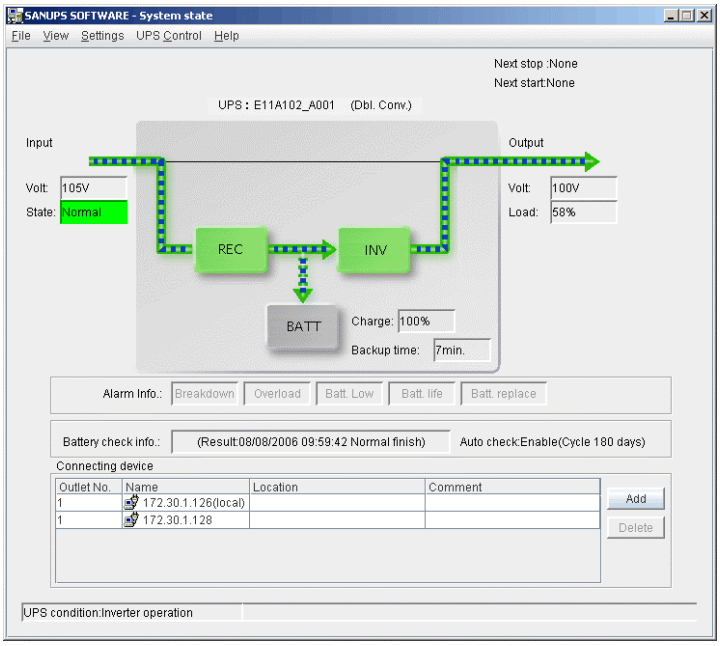
(J) Check the entered information



Use this screen to check the information entered during the wizard operation. If there is no problem in the entered information, click the **"Execute"** button.

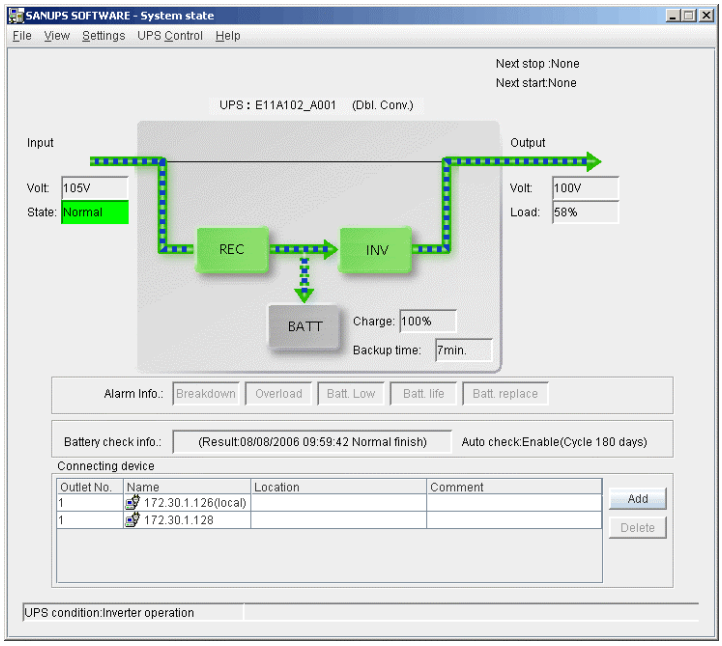
If you want to change any information, click the **"Back"** button to return to the appropriate screen.

↓ Click the **"Execute"** button. (Setup is finished.)



The **SANUPS SOFTWARE** main screen appears.

(K) Check the connection of the local computer



[Connecting device] indicates that the local computer is registered.

The computer indicated as **(local)** is the local computer.

(L) Check the UPS connection

① Perform a simulated power failure such as turning off the UPS.

② Check that a power failure message appears on the screen.

③ After the message appears, immediately perform recovery from the simulated power failure.

If no power failure message appears on the screen after you perform simulated power failure, check the following.

・ Is the UPS connected correctly using a serial cable?

・ Is the **SANUPS SOFTWARE** service running?

(For information on operation of the service, refer to the "Appendix A Operation of the service".)

・Is the firewall enable?

(Please refer to “Attatchment”. There are comments about firewall setting).

Information:
Shutdowm confirmation by this computer alone can be done, by using shutdown test function.

4.1.3 If the UPS is connected to a network

Notice: To use Windows OS in ECN(*) is in "enable".

(*)ECN (Explicit Congestion Notification) is a function to prevent packet loss under congestion between routers has been occur by making data transmission speed slow. This function has been supported since **Windows Vista** (default value had been set as "**disable**"), but since **Windows Server 2012,** default value has been set as **"enable".**

To use LAN interface card and **Windows OS(Windows Server 2012)** which ECN is in **"enable"** by network connection, please confirm following contents in advance.

LAN interface card does not support ECN. If **Windows OS** which ECN is in "**enable**" like **Windows Server 2012** operates device registration or setting change under connecting to LAN interface card by network connection, monitor display of GUI tool will be slow because network connection will be very slow. So to use GUI tool by **Windows OS** which ECN is in **"enable"** like **Windows Server 2012**, please use GUI tool after changing ECN to be in "**disable**" temporarily or operate device registration or setting change by **SANUPS SOFTWARE** on the other computer.

Shutdown function under power failure will be operated normally even ECN is in "enable".

Please refer to the following order to confirm setting status and to change setting value of ECN.

To confirm setting status

[1] Log in by administrator account, and execute the following command.
netsh interface tcp show global
[2] Confirm setting value of ECN.
Setting value will be shown either "enable"(enabled) or "disable"(disabled).

To change ECN in "disable"(*1)

Change by either one of two following methods under log in by administrator account.
1) Execute "**ECN_DISABLE.BAT**" of **SANUPS SOFTWARE** install folder.
2) Execute the following command from command prompt.
netsh interface tcp set global ecncapability=disabled

To change ECN in "enable"(*1)

Change by either one of two following methods under log in by administrator account.
1) Execute "**ECN_ENABLE.BAT**" of **SANUPS SOFTWARE** install folder.
2) Execute the following command from command prompt.
netsh interface tcp set global ecncapability=enabled

(*1) Restart of OS by changing ECN setting value is not required.

In the case to use **Windows OS** which set up is arranged by "4.1.1 If the computer is a server connected to the UPS" or "4.1.2 If the UPS is connected to a client", it can be used as ECN is in setting value "enable.

If the computer is connected to the UPS with LAN interface card embedded, use the following procedure to set up.

Note: the UPS (LAN interface card) must be set to an IP address suitable for the environment in use. (For details on how to set up, refer to the
User Guide of the LAN interface card.

(A) Start **SANUPS SOFTWARE** (connection wizard).

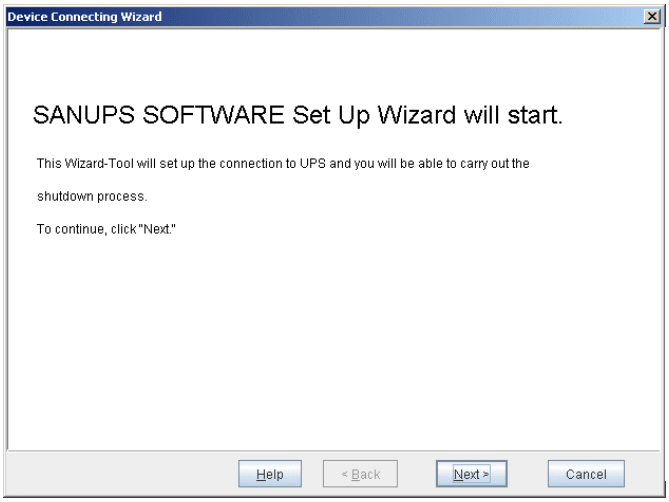
・If the OS is **Windows**

From the [Start] button on task bar, select [All Programs] – [UPS control system] – [SANUPS SOFTWARE].
(For **Windows2000**, from the [Start] button, select [Programs] – [UPS control system] – [SANUPS SOFTWARE].)

<Information>
For **Windows Server 2008 Server Core** or **Windows Server 2012 Server Core,** move to the folder where **SANUPS SOFTWARE** is installed, and then execute "sg4 0" using command line.

・If the OS is not **Windows**

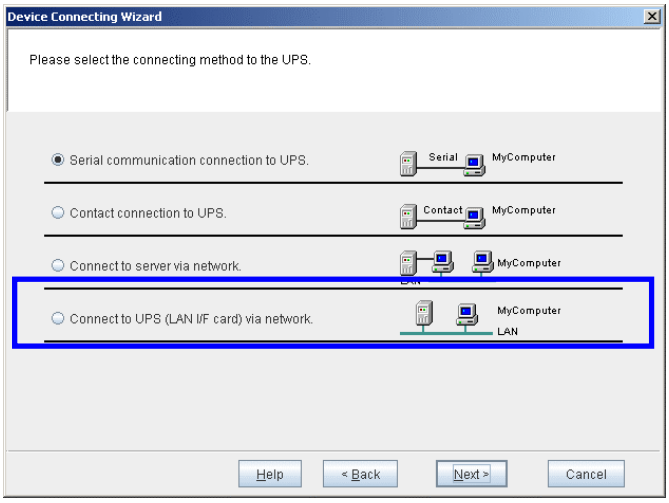
Move to the directory where **SANUPS SOFTWARE** is installed, and then execute **[./sg4 0].**



After **SANUPS SOFTWARE** starts, the screen shown on the left appears.

Click the **"Next"** button to move to the next screen (for selecting a UPS connection method)

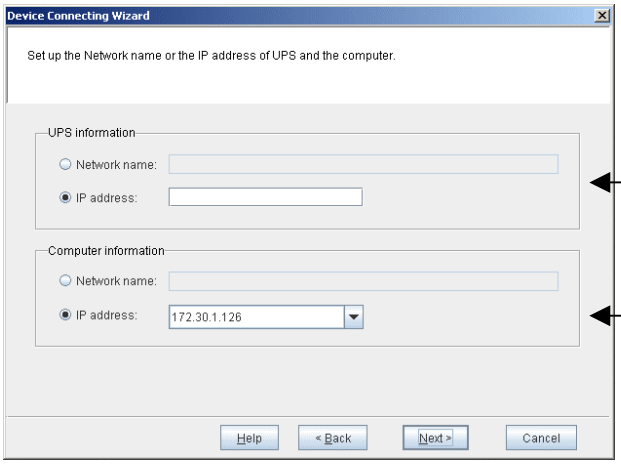
(B) Select a UPS connection method



Select the **[Connect to UPS (LAN I/F card) via network]** option.

Click the **"Next"** button to move to the next screen (for network setting).

(C) Set up the network



Specify the network information.
Click the **"Next"** button to move to the next screen.

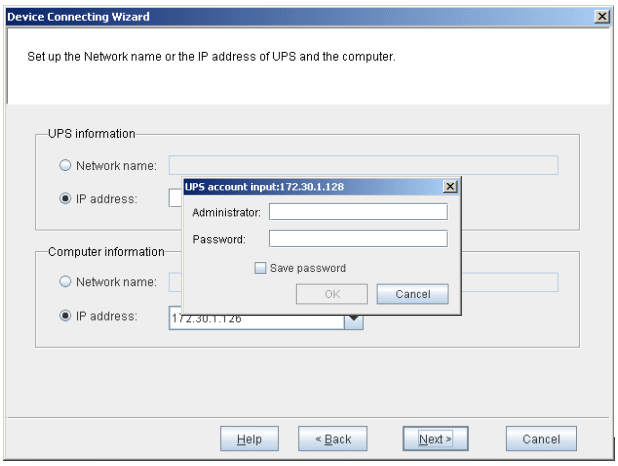
Specify the network information of the UPS (LAN I/F card).

Specify the network information of the local computer.
If multiple network cards are used, select the network used for the connection.

Parameter	Description
UPS information	Specify the network information of the UPS (LAN I/F card). Enter a network name or IP address. (※1)
Computer information	Specify the network information of the local computer. Enter a network name or IP address. (※1)

(※1) If the computer is managed by DHCP, etc. based on network name, use **[Network name]**.

(D) Enter the UPS account information

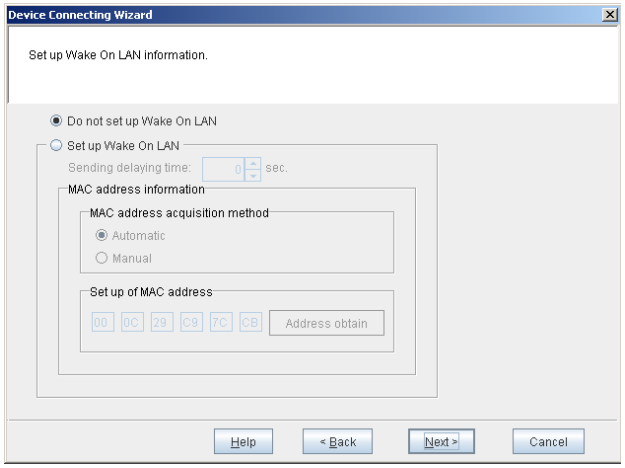


Enter the account information of the UPS administrator.
Enter the account of the LAN I/F card administrator.
Click the **"OK"** button. After the user authentication is performed, move to the next screen.

(Note 1) The password is case sensitive.

(E) Set up Wake On LAN

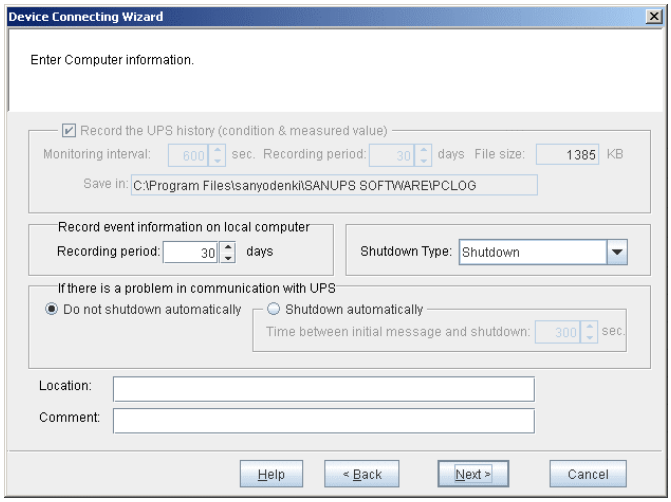
If the computer supports the Wake On LAN function, after power is supplied from the UPS, the power of the computer can be turned on automatically.



Set up the Wake On LAN function. (If you do not know the computer environment, select the **"Do not set up Wake On Lan"** option. Regardless of this setting, the operation of the UPS management system is not affected.)
Click the **"Next"** button to move to the next screen. (for entering computer information).

<Information>
After complete set up, settings information can be change from settings screen.
Please refer to “6. Explanation of Functions”

(F) Enter the computer information



On this screen, specify how to record the UPS history, shutdown type, location, and other accessory information. Also, specify what to do if communication with the LAN I/F card is cut off.
You can move to the next screen with no problem while leaving the **"Location"** and **"Comment"** text boxes blank.
Click the **"Next"** button to move to the next screen.

< Information >
If you connect multiple computers to the UPS and then manage them, the management will become easier if you enter the "Location" and "Comment" text boxes.

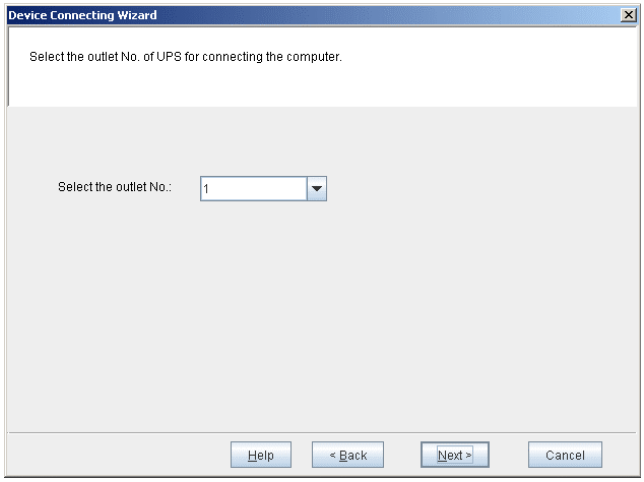
※ Types of shutdown and how to use them

Shutdown	Description
Shutdown	Shut down the computer.
Shutdown and turn off power	After shutting down the computer, turn off its power. The power referred here is not the output power of the UPS, but the power of the computer itself. (This shutdown type can be used only for **Windows** that supports **APCI [Advanced Power Configuration Interface]**.)
Suspend	Suspend the computer. (This shutdown type can be used only if the suspend function on **Windows** is enabled.) Do not use this shutdown type when you perform scheduled operation. If you use this shutdown type and perform scheduled operation, the popup messages that accompany the suspend and resume operations are stored.

Starting computer automatically by using **Windows** after power recover, please refer to “About constraint of automatic starting function of a computer” of “Appendix A Precautions for using **Windows**”.

(G) Specify the UPS output outlet connection

This screen appears when the UPS with LAN interface card embedded has multiple system outputs.
If the UPS with LAN interface card embedded does not have multiple system outputs or if it is connected to LAN ADAPTER, this screen does not appears. In this case, the outlet becomes fixed at [1] automatically.

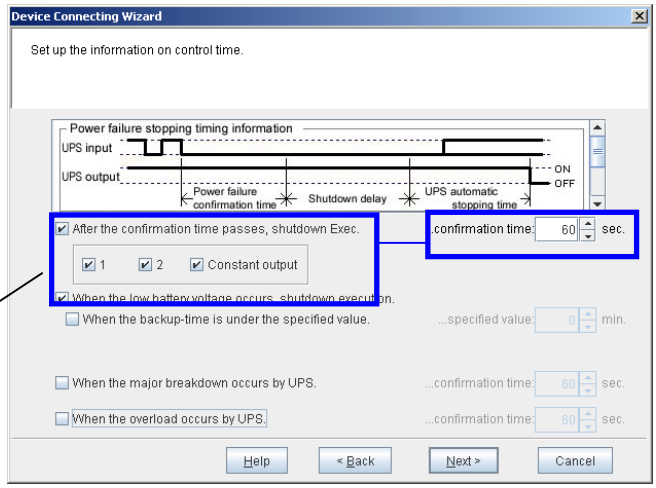


Select an output outlet number for the UPS connected to the computer.

Click the **"Next"** button to move to the next screen.

While "Constant output" allows connection of peripheral devices that do not require shutdown, do not connect to the computer using "Constant output".

(H) Set up the information on UPS control time (1)



Use this screen to specify how to control the UPS.

After specifying the information, click the **"Next"** button to move to the next screen (for setting up the information on UPS control time (2)).

Specify whether to perform the shutdown sequence for the computer registered on the outlet of "1", "2", or "Constant output" (outlet "0") if the power failure state continues during the "confirmation time" period.
(For UPS that does not have the multiple system output function, only outlet "1" can be set.)

- **If the check box of a output number is selected**

Perform the shutdown sequence for the computer connected/registered on the outlet of the selected number, when there is a power failure.

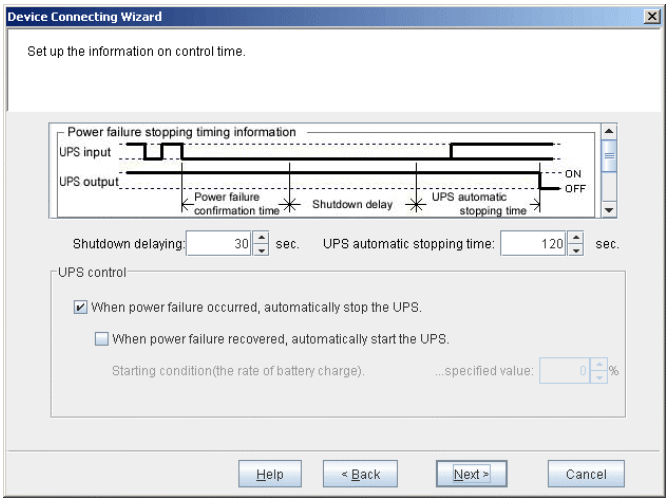
- **If the check box of a output number is cleared**

Do not perform the shutdown sequence for the computer connected/registered on the outlet of the selected number, when there is a power failure. (Perform shutdown when the battery voltage is low.)

Also, if exclude the check of “After the comfirmation time passes, shutdown Exec.”, all computers will not be performed shutdown sequences until low battery voltage occurred during power failure.
If exclude the check of “When the low battery voltage occurs, shutdown execution.”, Shutdown will not be performed under low battery voltage occurred.

Attention:
If exclude the both checks of “After the comfirmation time passes, shutdown Exec.” And When the low battery voltage occurs, shutdown execution.”, shutdown computer will not be performed under power failure.
Under long time power failure, UPS stop may occurr by battery discharge cut-off instead of automatically shutdown.
Please understand those operation, if exclude those two setting items.

(I) Set up the information on UPS control time (2)

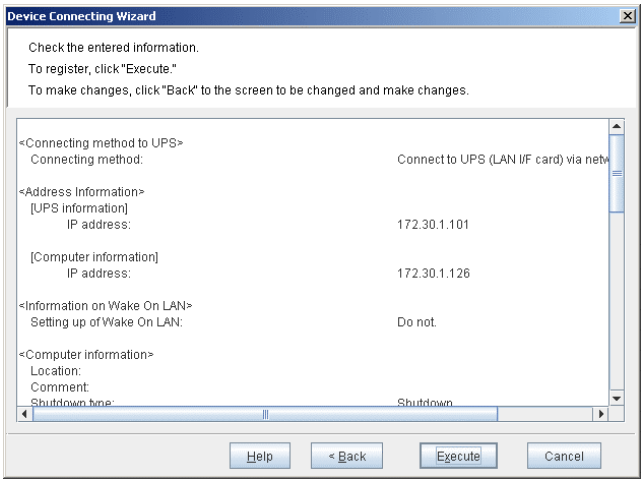


Use this screen to continue the operation on the previous screen and specify how to control the UPS.

After specifying the information, click the **"Next"** button to move to the next screen (for checking the entered information).

<Information>
According to types of LAN interface card, default setting value of “When power failure occurred, automatically stop the UPS.”, and “When power failure recovered, automatically start the UPS.” can be different.
Please confirm setting value according to environment.

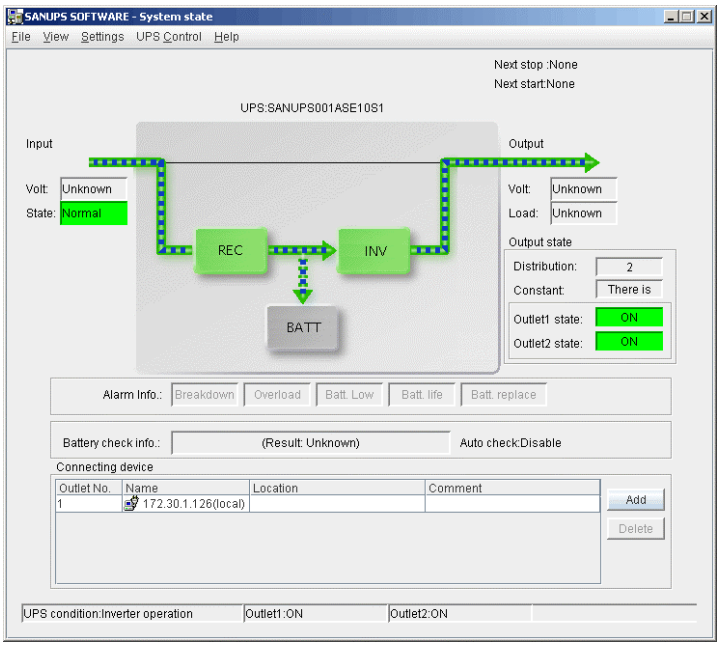
(J) Check the entered information



Use this screen to check the information entered during the wizard operation. If there is no problem in the entered information, click the **"Execute"** button.

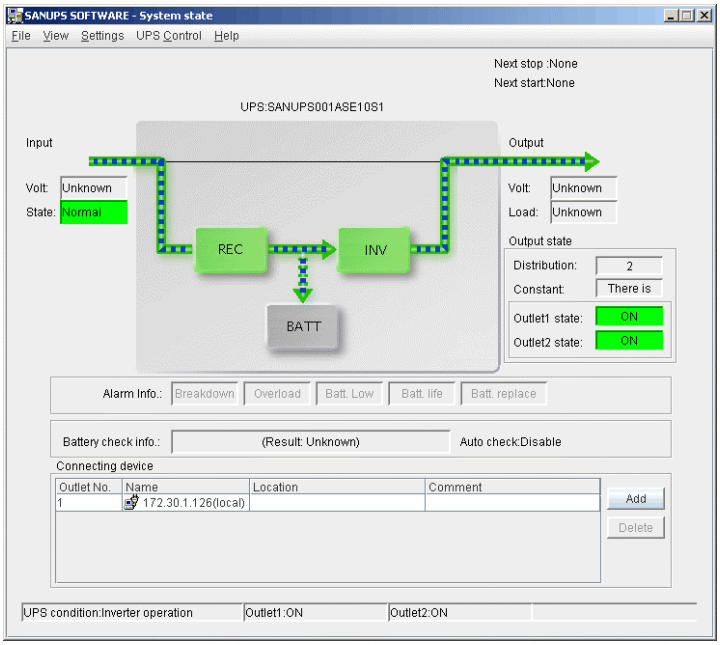
If you want to change any information, click the **"Back"** button to return to the appropriate screen.

↓ Click the **"Execute"** button. (Setup is finished.)



The **SANUPS SOFTWARE** main screen appears.

(K) Check the connection of the local computer



[Connecting device] indicates that the local computer is registered.

The computer indicated as **(local)** is the local computer.

(L) Check the UPS connection

① Perform a simulated power failure such as turning off the UPS.

② Check that a power failure message appears on the screen.

③ After the message appears, immediately perform recovery from the simulated power failure.

If no power failure message appears on the screen after you perform simulated power failure, check the following.

・ Is the UPS connected correctly using a serial cable?

・ Is the **SANUPS SOFTWARE** service running?

(For information on operation of the service, refer to the "Appendix A Operation of the service".)

・Is the firewall enable?

(Please refer to “Attatchment”. There are comments about firewall setting).

Information:
Shutdowm confirmation by this computer alone can be done, by using shutdown test function.

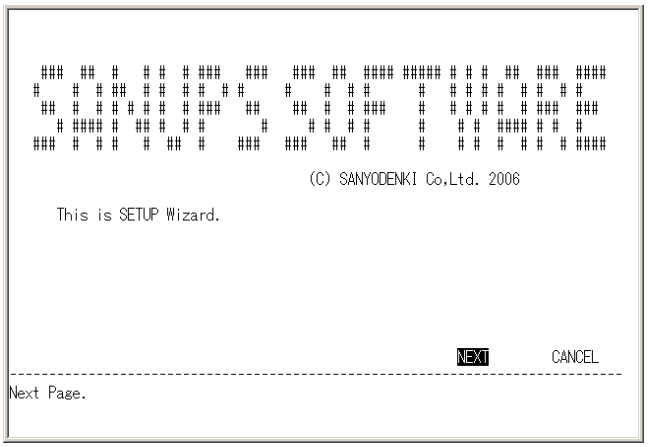
4.2 Using the SETUP Wizard (CUI Setup Tool)

If a GUI (graphical user interface) environment is not available, you can use a character-based tool to set up **SANUPS SOFTWARE** (**UNIX** and **Linux** only). The SETUP Wizard can be used to set up a computer so that when power failure occurs, the computer can be shut down automatically. Contents registered by the connection wizard can be changed later by using this tool.
This setup can be used not only from workstation where UPS service is installed, but also from remote PC for administrator.

4.2.1 About the registration (configuration) of the UPS

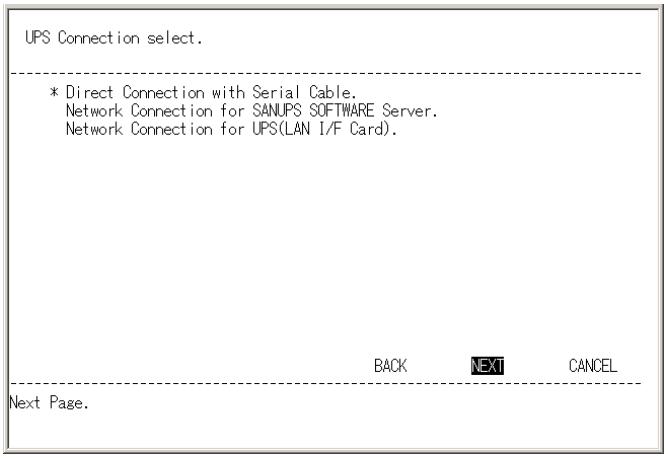
(A) From the console or the terminal, enter and then execute the **"./sg4setup"** command in the **SANUPS SOFTWARE** installation directory. (※1)

(B) The SETUP Wizard starts. Move the cursor to **[NEXT]** and press the space bar to accept it and then move to the next screen. (Use the arrow keys to move the cursor.)



(※1) The **sg4setup** tool can be used to set up **SANUPS SOFTWARE** in the same way even after the UPS registration.

(C) Select a method to connect to the UPS. Move the cursor to a desired connection method, and then use the space bar to select the method. An asterisk (*) appears in front of the selected connection method.
After selecting a connection method, move the cursor to **[NEXT]** and then use the space bar to accept it.



Setting	Description
Direct Connection with Serial Cable.	Connect to UPS using a serial cable.
Network Connection for SANUPS SOFTWARE Server.	Connect to server via network. (Connect to a computer that is connected to the UPS using a serial cable.)
Network Connection for UPS (LAN I/F Card) .	Connect to the UPS (LAN/IF card) via a network.

If **[Direct Connection with Serial Cable.]** is selected

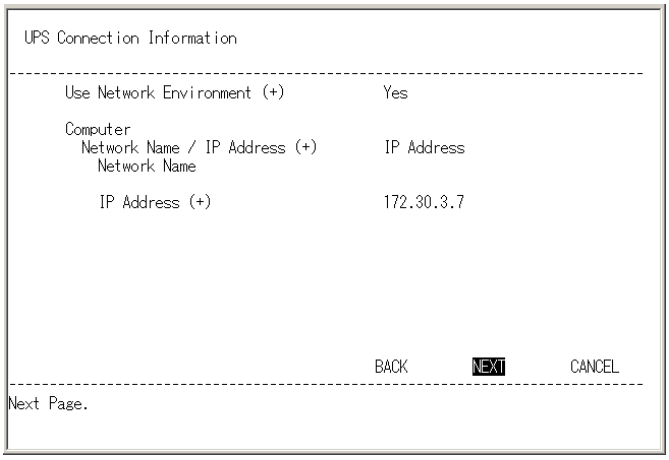
→ **(D)**

If **[Network Connection for SANUPS SOFTWARE Server.]**

or **[Network Connection for UPS (LAN I/F Card) .]** is selected

→ **(F)**

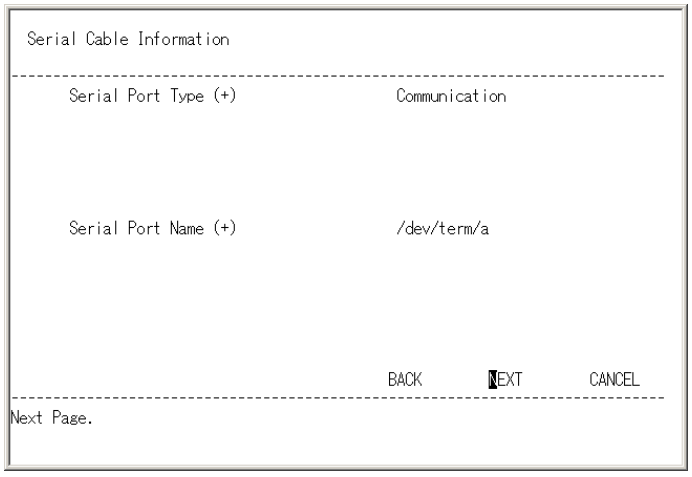
(D) Select an environment to use UPS. You can specify to use a network environment and use as a UPS server, or as standalone without using any network environment.
After selecting an environment to use UPS, move the cursor to **[NEXT]** and then press the space bar to accept it.
(Use the arrow keys to move the cursor. A selection with (+) after it indicates that the space bar can be used to select the setup content.)



Setting	Description
Use Network Environment	Specify whether to use (Yes) or not use (No) a network environment.
Network Name / IP Address	Specify whether to use network name or IP address.
Network Name	Specify a network name.
IP Address	Specify an IP address.

(E) Select a serial cable connection method. Specify a connection method according to the environment. After specifying a connection method, move the cursor to **[NEXT]** and then press the space bar to accept it.
(Use the arrow keys to move the cursor. A selection with (+) after it indicates that the space bar can be used to select the setup content.)

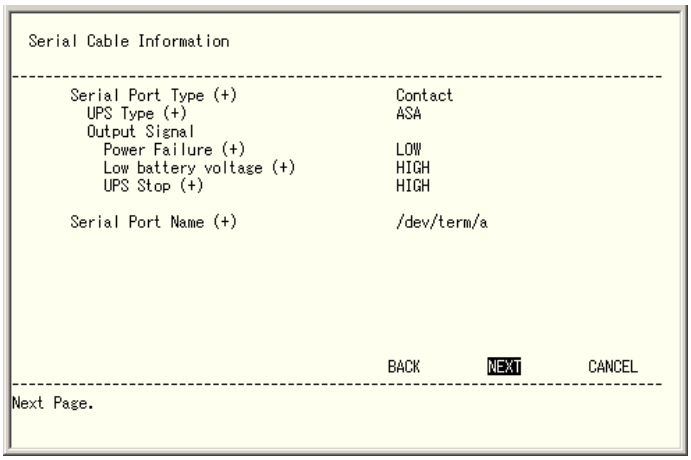
When performing serial communication with the UPS



項　目	説　明
Serial Port Type	Specify UPS connection type: serial (**Communication**) or contact connection (**Contact**).
Serial Port Name	Specify the type of UPS (appears when **[Contact]** is selected)

After specifying the connection method of serial cable, proceed to エラー! 参照元が見つかりません。.

When performing contact connection with the UPS

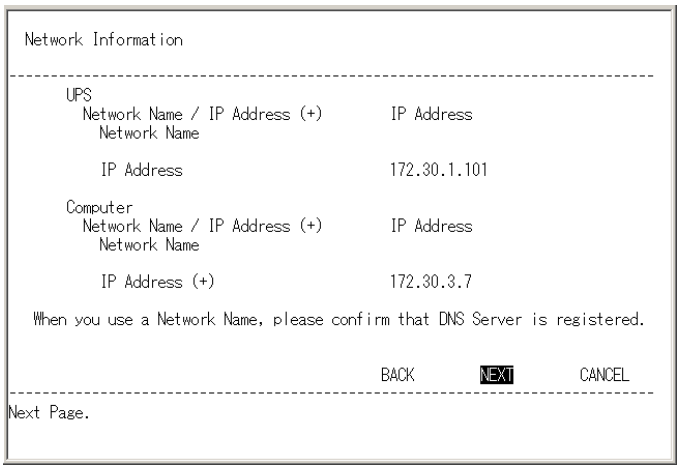


Setting	Description
Serial Port Type	Specify UPS connection type: serial (**Communication**) or contact connection (**Contact**).
UPS Type	Specify the type of UPS (appears when **[Contact]** is selected) ※1
Out Put Signal	(Appears when **[Signal]** is selected)
Power Failure	Displays whether the power failure signal is enabled or disabled, as well as power failure signal polarity. You can select LOW or HIGH.
Low battery voltage	Displays whether low battery voltage signal is enabled or disabled, as well as battery low signal polarity. You can select LOW or HIGH.
UPS Stop	Displays whether UPS shutdown is enabled or disabled, as well as UPS shutdown polarity. You can select LOW or HIGH.
Serial Port Name	Specify the serial port (device name) of the computer.

※1 In **[UPS Type]**, if the appropriate UPS model does not exist, select **[OTHER]**; in **[Out Put Signal]**, specify the UPS polarity. (The parameters of **[Out Put Signal]** can be changed only when **[UPS Type]** is set to **[OTHER]**.) For details of the value of each polarity, refer to the operating manual that comes with the UPS.

After specifying the connection method of serial cable, proceed to **(G)**.

(F) Enter the network name or IP address of the UPS, as well as the network name or IP address of the computer. Check that the entered network names or IP addresses are correct. Move the cursor to **[NEXT]**, and then press the space bar to accept it.
(Use the arrow keys to move the cursor. A selection with (+) after it indicates that the space bar can be used to select the setup content.)



Setting	Description
Network Name / IP Address.	Specify whether to use the network name of IP address.
Network Name	Specify a network name.
IP Address	Specify an IP address.

< Note 1 >

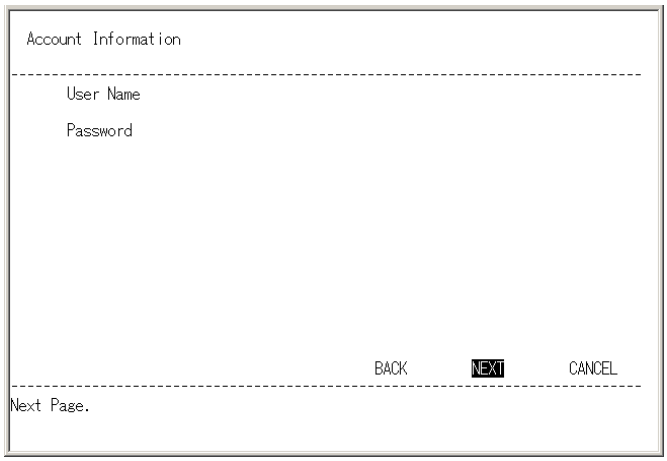
If network name is used, it is necessary that the specified network name can be converted to an IP address using DNS server, etc.

<Note 2 (when LAN interface card is used) >

When no DNS server is available so that name conversion is not performed, if you use **[Network Name]** and then specify up an address, the **[ERROR: Invalid Network Name]** message appears. (The ↑ and ↓ keys can no longer be used in the operation.) This is because the computer is waiting for a network name with "." (dot).

If this problem occurs while you are using an IP address to register, enter a "." (dot) after [Network Name] so that the ↑ and ↓ keys can now be used in the operation. Then, change the method to **[IP Address]** and then continue the registration.

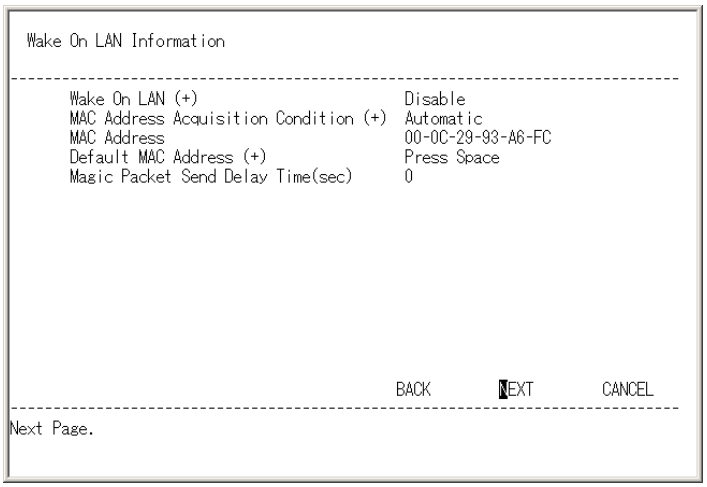
(G) Enter the account and password of the UPS. Then, move the cursor to **[NEXT]** and then press the space bar to accept it. (To move the cursor, use the arrow keys.)



Setting	Description
User Name	Enter a user name. (The input is not case sensitive.)
Password	Enter a password. (The input is case sensitive.)

To configure the settings for using a serial cable to connect to the UPS, proceed to screen **(I)** next.

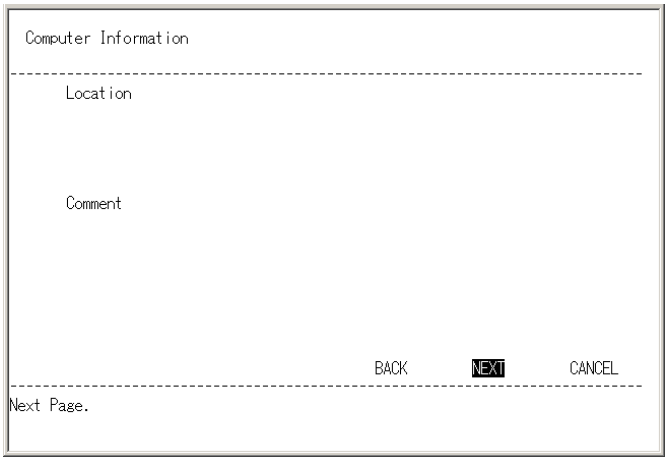
(H) Set up WakeOnLAN. Select the WakeOnLAN execution conditions and enter a MAC address. Move the cursor to **[NEXT]** and then press the space bar to accept it.
(Use the arrow keys to move the cursor. A selection with (+) after it indicates that the space bar can be used to select the setup content.)



Setting	Description
Wake On LAN	Specify to enable or disable Wake On LAN.
MAC Address Acquisition Condition	If [Wake On LAN] is enabled, specify how to obtain the MAC address. (You can select [Automatic] or [Fixation] (set up the MAC address manually).)
MAC Address	If [MAC Address Acquisition Condition] is set to "Fixation", specify a MAC address here.
Default MAC Address	If [MAC Address Acquisition Condition] is set to [Fixation], [MAC Address] indicates the MAC address of the local computer.
Magic Packet Send Delay Time (※)	Specify the delay time in sending Magic Packet.

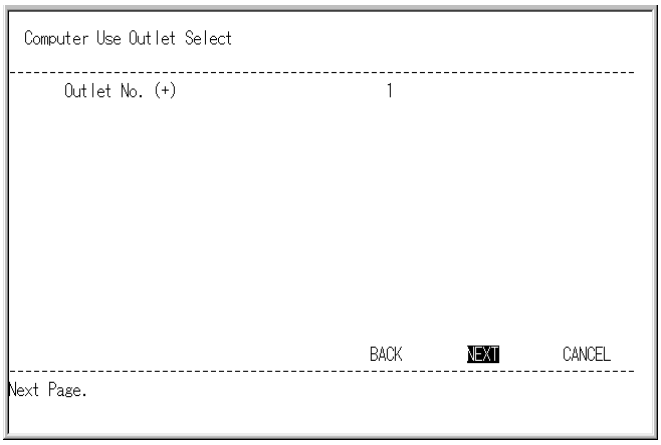
(※) This setting value will be available to set when the LAN interface card is used. However, the LAN interface card which is unsupported this function is unavailable.

(I) Enter the location of the computer as well as a comment, as necessary. Then, move the cursor to **[NEXT]** and then press the space bar to accept it.
(To move the cursor, use the arrow keys.)



Setting	Description
Location	Enter the location of the computer (can be blank).
Comment	Enter a comment (can be blank).

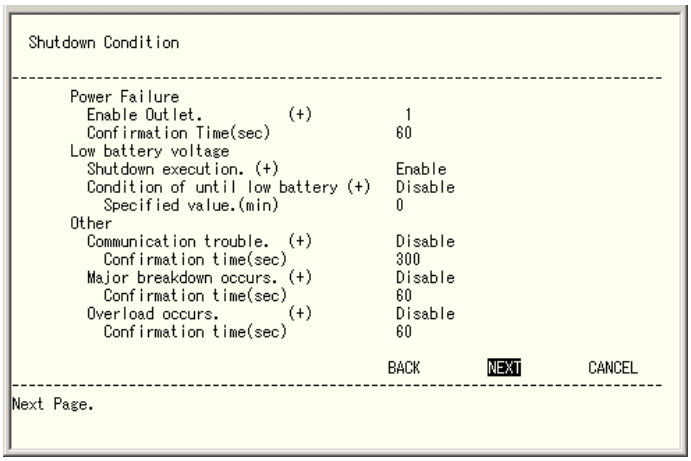
(J) Specify the number of the outlet that supplies power to the computer. After checking the information, move the cursor to **[NEXT]** and then press the space bar to accept it. For UPS with only one outlet, this setup is not performed. (The setup screen does not appear.)
(Use the arrow keys to move the cursor. A selection with (+) after it indicates that the space bar can be used to select the setup content.)



Setting	Description
Outlet No.	Specify the number of the outlet that supplies power to the computer. [1] outlet 1 [2] outlet 2 [0 (Continuous Output)] Continuous output

While [Continuous output] allows connection of peripheral devices that do not require shutdown, do not connect to the computer using [Continuous output].

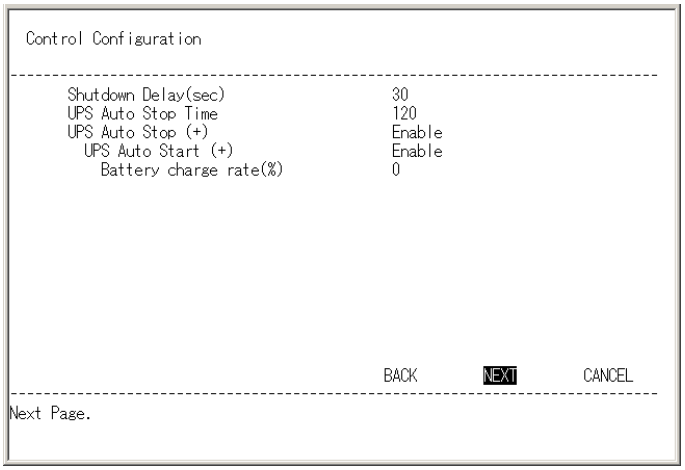
(K) Set up the shutdown trigger. After checking the content of the setup, move the cursor to **[NEXT]** and then press the space bar to accept it.
(Use the arrow keys to move the cursor. A selection with (+) after it indicates that the space bar can be used to select the setup content.)



Setting	Description
Power Failure	
Enable Outlet	Specify the number of the outlet to perform shutdown after the power failure confirmation time has elapsed.
Confirmation Time (sec)	Specify the power failure confirmation time, in seconds.
Low battery voltage	
Shutdown execution.	Shut down the computer when the battery voltage becomes low (fixed at [Enable]).
Condition of untill low battery	Specify whether to regard (Enable) or not (Disable) as low battery voltage when the battery's estimated backup time is shorter than the specified value.
Specified value. (min)	Specify the battery's estimated backup time, in minutes.

Setting	Description
Other	
Communication trouble.	Specify whether to shut down (Enable) or not (Disable) when a serial communication error with the UPS occurs.
Major breakdown occurs.	Specify whether to shut down (Enable) or not (Disable) when major breakdown with the UPS occurs.
Overload occurs.	Specify whether to shut down (Enable) or not (Disable) when an overload with the UPS occurs.
Confirmation time (sec)	Specify the confirmation time of each shutdown trigger, in seconds.

(L) Set up the UPS stop control. After checking the content of the setting, move the cursor to **[NEXT]** and then press the space bar to accept it.
(Use the arrow keys to move the cursor. A selection with (+) after it indicates that the space bar can be used to select the setup content.)



Setting	Description
Shutdown Delay (sec)	Specify the shutdown delaying time, in seconds.
UPS Auto Stop Time	Specify the automatic stop time of the UPS, in seconds.
UPS Auto Stop	Specify whether to automatically stop (Enable) or not (Disable) the UPS when there is a power failure.
UPS Auto Start	Specify whether to automatically start (Enable) or not (Disable) the UPS during power recovery.
Battery charge rate (%)	Specify a rate so that when the battery charge rate exceeds this rate, the UPS output is turned on. (This setting is not possible if the UPS does not support this function.) If the value is set to 0%, when the power is recovered, the UPS output is turned on immediately.

< Information >

The default UPS stop control values are listed below. (When a power failure occurs, the UPS stops after approximately 3 minutes 30 seconds.)

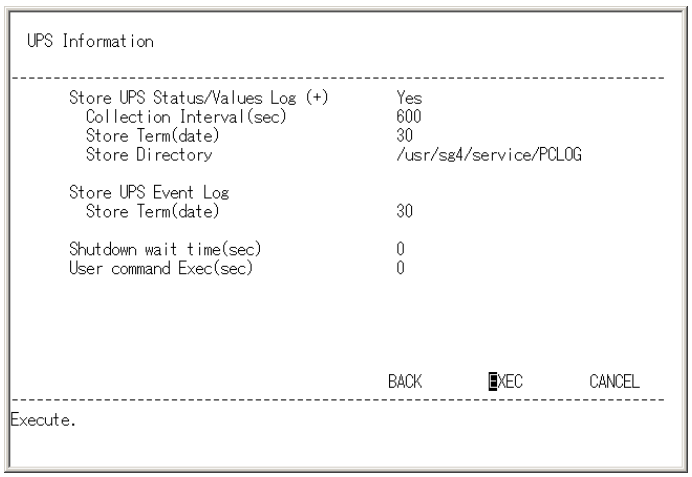
- Confirmation time : 60 seconds
- Shutdown delaying time : 30 seconds
- UPS stop time : 120 seconds

(M) Specify how to store the status/value log of the UPS. After checking the content of the setup, move the cursor to **[EXEC]** and then press the space bar to accept it.

The setup is finished.

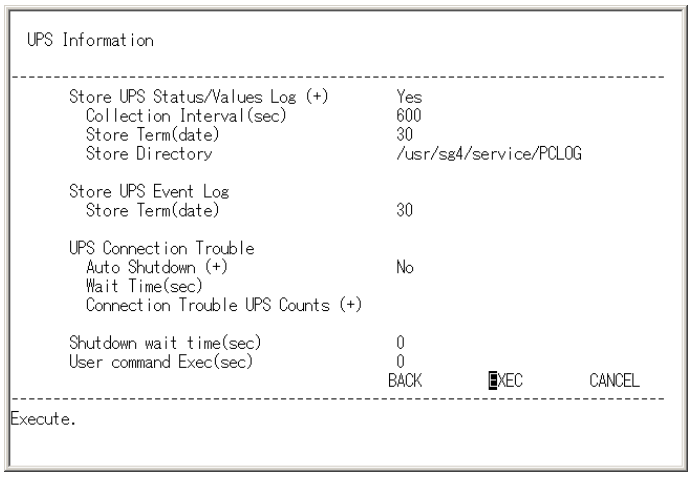
(Use the arrow keys to move the cursor. A selection with (+) after it indicates that the space bar can be used to select the setup content.)

UPS and serial cable connection configuration



Setting	Description
Store UPS Status/Values Log	Specify whether to store (Yes) or not (No) a log of the status and measurement values of the UPS.
Collection Interval (sec)	Specify the UPS monitoring interval, in seconds.
Store Term (date)	Specify the recording duration, in days.
Store Directory	Displays the directory where the log file is stored (cannot be changed).
Store UPS Event Log **Store Term (date)**	Specify the recording duration of event information, in days.
Shutdown wait time	Specify the wait time as seconds until execute the script by the event of "Shutdown execution" after "shutdown delay time" is passed.
User command Exec	Specify the time as seconds until execute the event script of "Shutdown execution". (Shutdown will start after "Shutdown wait time" and "User command Exec" time is passed. It is available to set the delay time by using those times until starting the shutdown in each computer.)

LAN interface card connection configuration



Setting	Description
Store UPS Status/Values Log	Specify whether to store (Yes) or not (No) a log of the status and measurement values of the UPS.
Collection Interval (sec)	Specify the UPS monitoring interval, in seconds.
Store Term (date)	Specify the recording duration, in days.
Store Directory	Displays the directory where the log file is stored (cannot be changed).
Store UPS Event Log **Store Term (date)**	Specify the recording duration of event information, in days.
UPS Connection Trouble /Server Connection Trouble **Auto Shutdown**	Specify whether to automatically shut down (Yes) or not (No) when there is an error in the communication between the LAN interface card the server.
Wait Time (sec)	If [Auto Shutdown] is set to [Yes], specify the duration from the time the shutdown warning message appears to the time shutdown activates, in seconds.
Connection Trouble UPS Counts	When use the LAN interface card which supports UPS linkage function, choose the counts of the device to make shutdown under communication error occurs.
Shutdown wait time	Specify the wait time as seconds until execute the script by the event of “Shutdown execution” after “shutdown delay time” is passed.
User command Exec	Specify the time as seconds until execute the event script of “Shutdown execution”. (Shutdown will start after “Shutdown wait time” and “User command Exec” time is passed. It is available to set the delay time by using those times until starting the shutdown in each computer.)

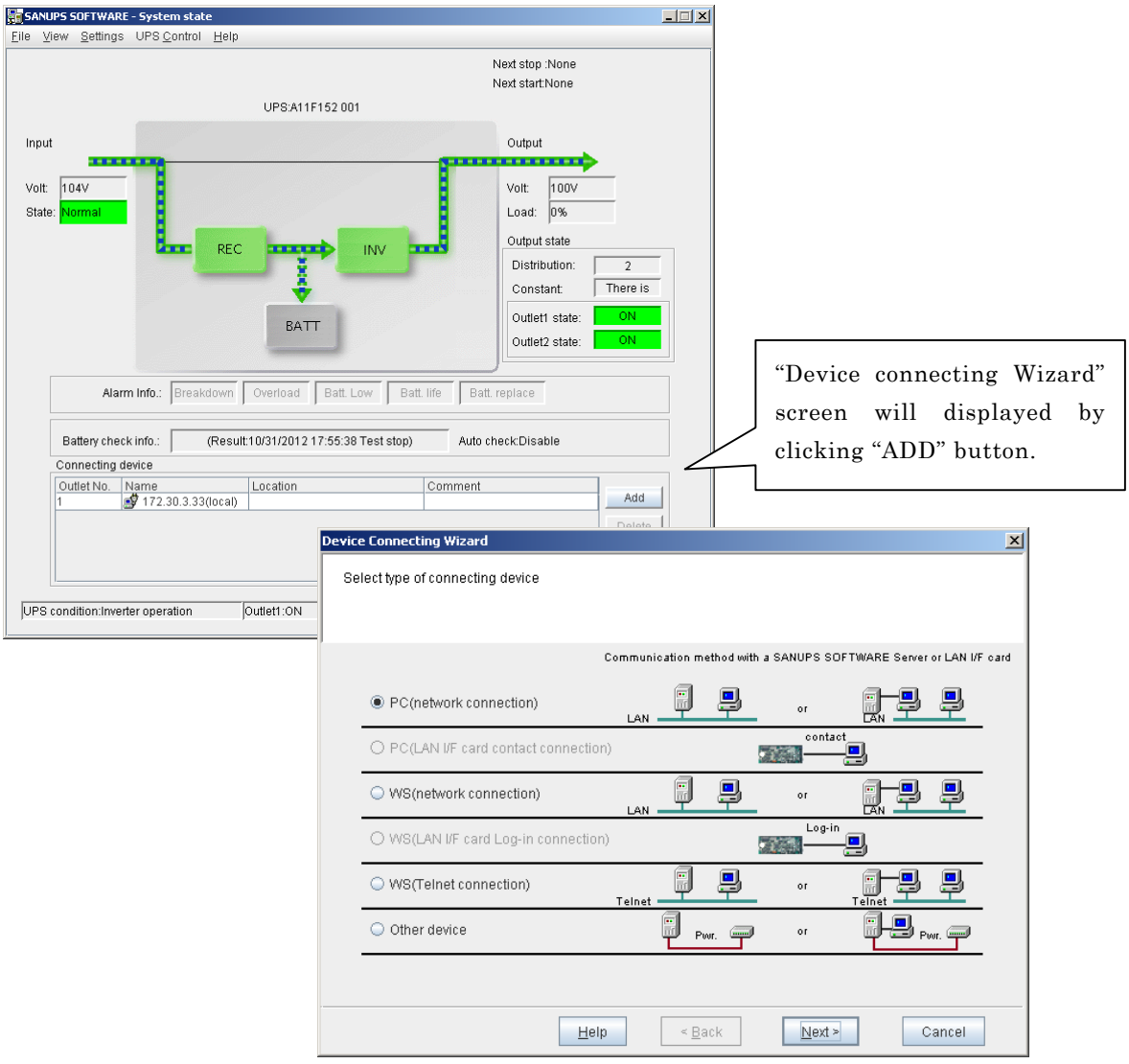
4.3 Additional registration of the client computer from SANUPS SOFTWARE

Other computer on the network is available to register additionally as the client connected device (including under using LAN interface card) from the computer which device is already registered by using GUI tool.

Therefore, device registration is available for **UNIX/Linux** without GUI environment by **Windows**.

(**Windows**, **Linux** and **UNIX** version are all available for additional registration, but service program of **SANUPS SOFTWARE** is required to be operated.)

Registration is available as the followings.



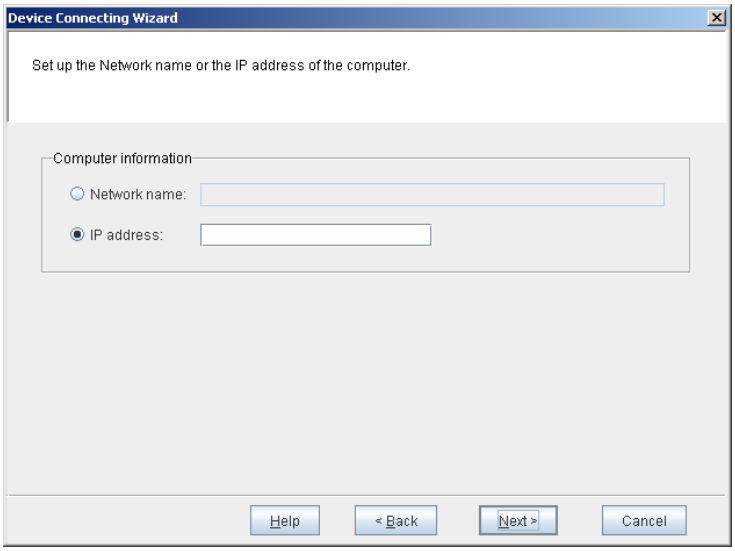
Select the type of device for additional registration from the screen.

・Select "PC(network connection)" when you add the **Windows**.

・Select "WS(network connection" when you add **Linux** or **UNIX**.

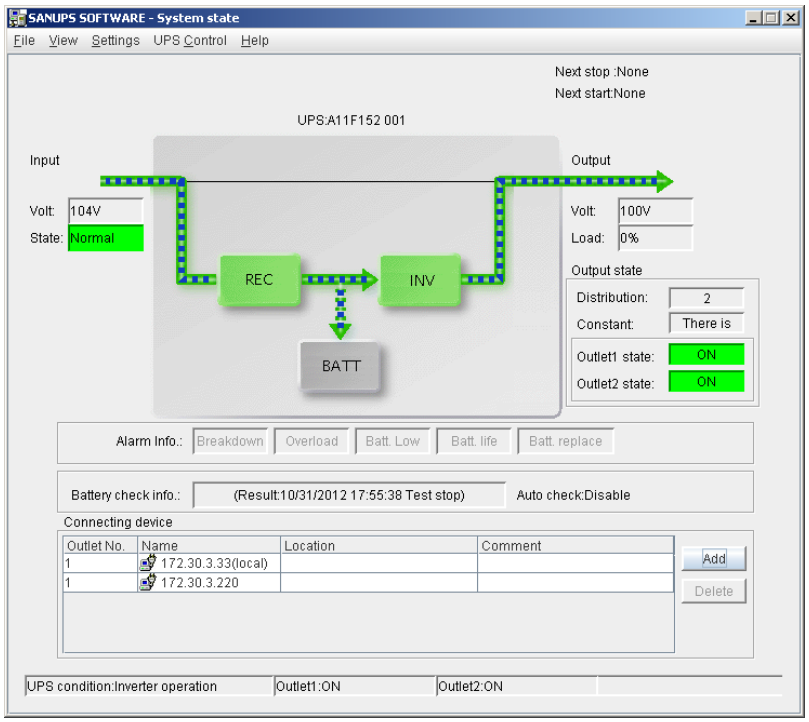
Select "Next" button.

Enter “IP address” or “Network name” of the computer for additional registration.



If choose “Next” button, setting screen will be displayed when “4.1.2 If the UPS is connected to a client” or “4.1.3 If the UPS is connected to a network”.

Device registration will complete by following the contents of setting wizard screen.



<Information>

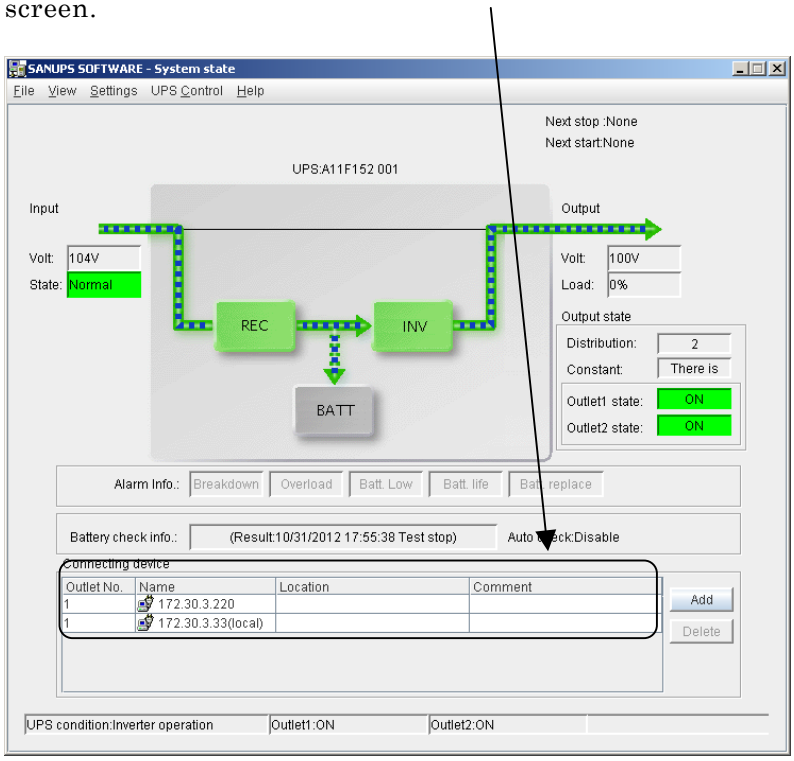
Additional registration is also available from “Setting” screen of **SANUPS SOFTWARE.** Choose “PC(network connection)” or “WS(network connection)” from “Device registration” of menu.

4.4 Delete registered device information

When there are changing of the connection type with UPS, UPS to connect（server or LAN interface card） or Network information, device registration is required once more. In that case, resetting is available from setting wizard by deleting device registration.

How to delete①

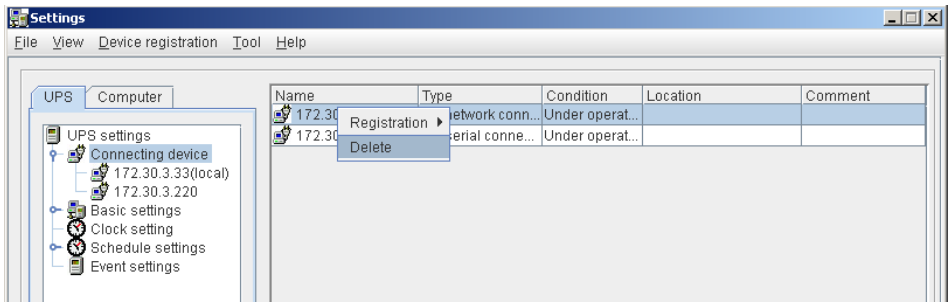
Choose the device from “Connecting device” of **SANUPS SOFTWARE** ”System state” screen.



Using “Delete” button and delete information of selected device.

How to delete②

Choose “UPS”－”Connecting device” from **SANUPS SOFTWARE** ”Settings” screen. Choose the target device from the view and right-click by the mouse and choose “Delete” from the displayed menu.



How to delete③ （UNIX, Linux only）

Enter **"./sg4delete"** command in the **SANUPS SOFTWARE** install directory from console or terminal.（Entering a account information of UPS administrator is required to enter this command.）

This command is available to delete own device.

Which device is available to delete.

(1) When the own computer is the connected device with the server.

・Unavailable to delete own device without deleting all client connected device.

・Available to delete all client devices(※).

(2) When the own computer is the client connected device.

・Available to delete own device or the other client connected device(□).

・Unavailable to delete server connected device.

(3) When the own computer is the connected device with LAN interface card and network.

・Available to delete the own device or the other client connected device(*).

(*) It is available to delete own device from **"./sg4delete"** command. To delete the other client connected device, GUI tool is available.

<When UPS linkage function is used>

Delete the own device is unavailable by using **"./sg4delete"** command, under connecting multi UPS by using UPS linkage function.

In this case, delete UPS information from **"./sg4setup"** command.

"Operation select." screen will be displayed by entering **"./sg4setup"**.

Choose "DEL" (Delete) from "Select Operation(+)".

Select the target device from "Select UPS(+)".

5. Starting and Exiting SANUPS SOFTWARE GUI Tool

5.1 Starting

5.1.1 For Windows

From the [Start] button on task bar, select [All Programs] – [UPS control system] – [SANUPS SOFTWARE].
(For **Windows2000**, from the [Start] button, select [Programs] – [UPS control system] – [SANUPS SOFTWARE].)

> **<Information>**
> For **Windows Server 2008 Server Core** or **Windows Server 2012 Server Core,** move to the folder where **SANUPS SOFTWARE** is installed, and then execute "sg4 0" using command line.

5.1.2 For an Operating System Other Than Windows

Execute **"./sg4 0"** in the installation directory of **SANUPS SOFTWARE**.

5.2 Exiting

There are the following two methods to exit the tool.

[1] Select [Exit] from the [File] menu.

[2] Click the close icon on the window title bar.

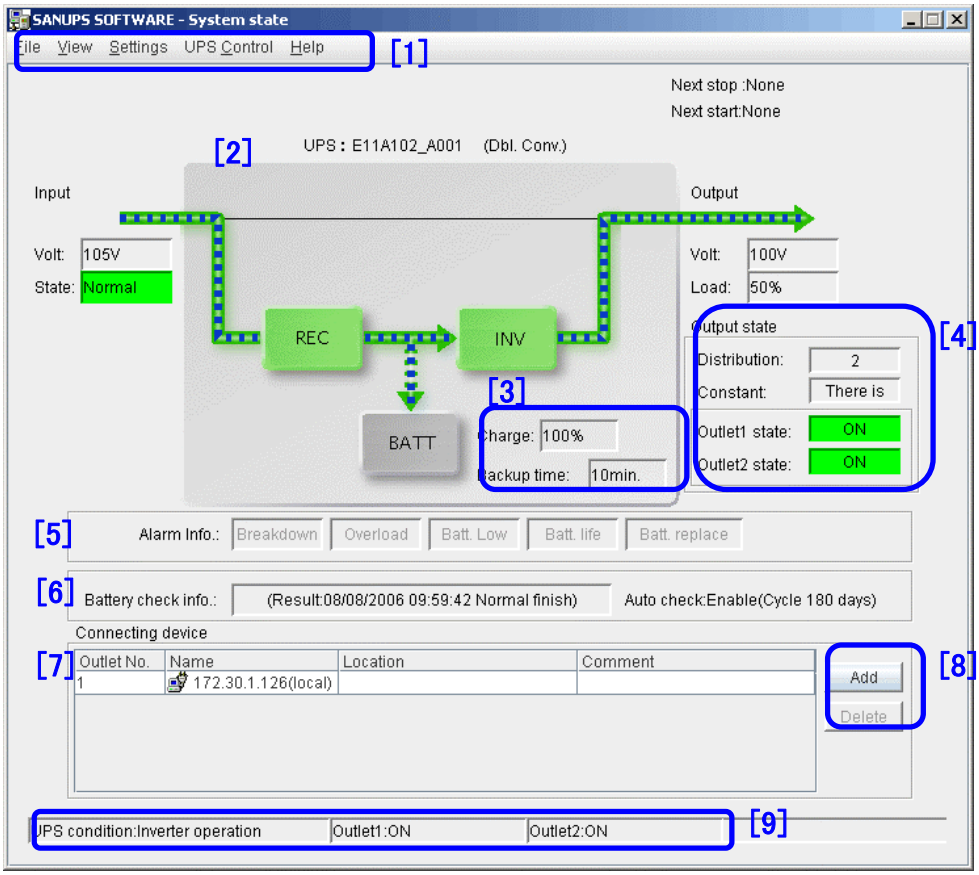
6. Explanation of Functions

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* 1 Also refer to this section when the serial port is being used for the connection.

6.1 About the Main Screen of GUI Tool

The main screen (System state screen) of **SANUPS SOFTWARE** displays an electricity supply system image, the main measurement values, information on whether there are any UPS alarms, and a list of connecting devices to enable you to quickly get a summary of the operating state of the system. The screen is updated automatically approximately every 10 seconds



[1] Menu bar

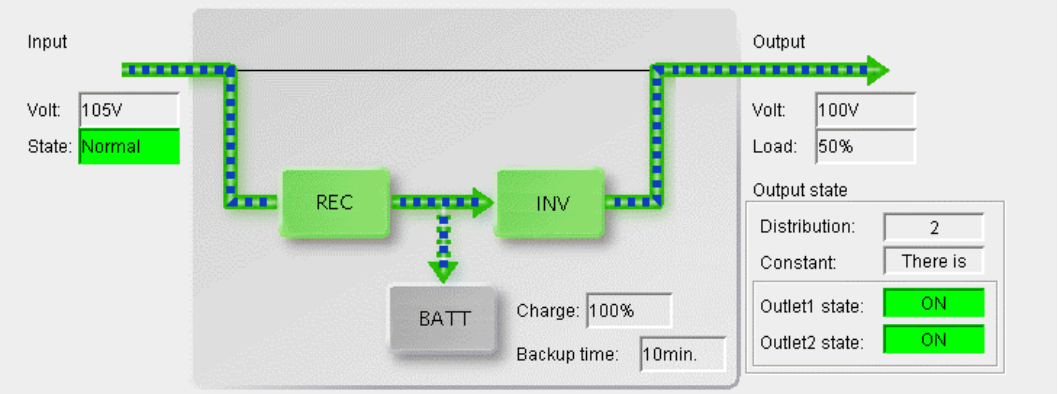
Menu name	Menu item	Description
File	Exit	Exits the main screen.
View	Event-Log (UPS)viewer	Displays the Event Log (UPS) viewer screen.
	UPS real-time viewer	Displays the UPS Real-time viewer screen.
	UPS Information	Displays information related to the UPS.
	Event-Log (computer) viewer	Displays the Event Log (Computer) viewer screen.
	UPS history viewer	Displays the UPS History viewer screen.
	Select UPS(※)	Switching displays the other UPS which is doing UPS linkage.
Settings	Schedule settings	Displays the Settings screen and then moves to the information input position corresponding to the selected menu item. (Selecting a menu item is equivalent to jumping to the corresponding destination within the Settings screen.) If [Detail settings] is selected from the menu, the Settings screen is displayed without jumping to a specific information input position.
	Event settings (UPS)	
	Event settings (computer)	
	Clock setting	
	Detail setting	
	Add. UPS(※)	Adding the other UPS for UPS linkage function.
UPS Control	UPS start/stop	Displays the control screen then moves to the control execution position corresponding to the selected menu item. (Selecting a menu item is equivalent to jumping to the corresponding destination within the control screen.)
	Battery check	
Help	Help	Displays the Help screen.
	About SANUPS SOFTWARE	Displays the program version.

(※)Menu items of “Select UPS” and “Add. UPS” are displayed during LAN interface card is used.

[2] Electricity supply system image

The display of the image changes in the following display priority in accordance with the state of the UPS.

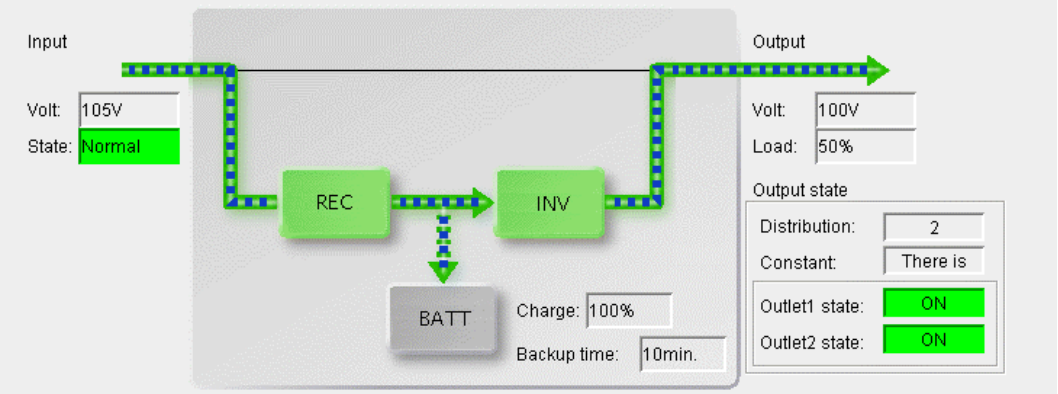
When non-hybrid UPS performing normal operation



When hybrid UPS performing normal operation

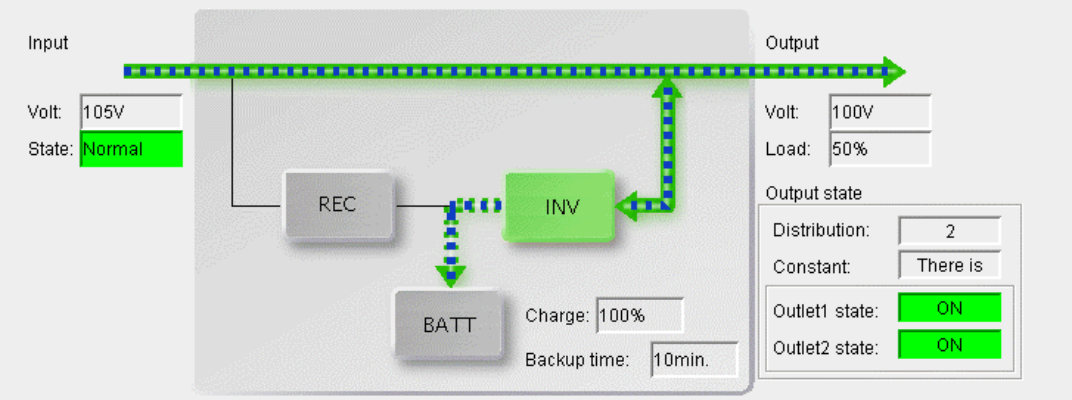
In the case of a hybrid UPS, one of the following three modes is indicated.

・When in DOUBLE CONVERSION mode



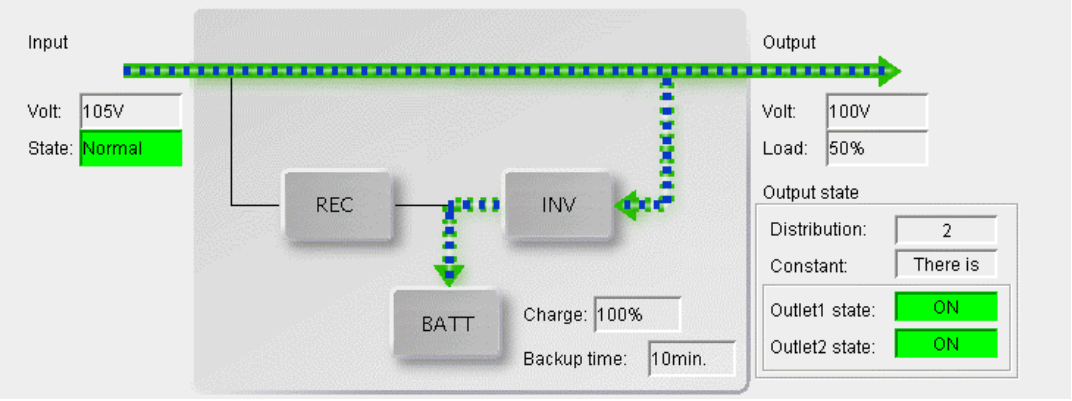
The CVCF function and the power-factor correction function work in DOUBLE CONVERSION mode.

・When in ACTIVE FILTER mode



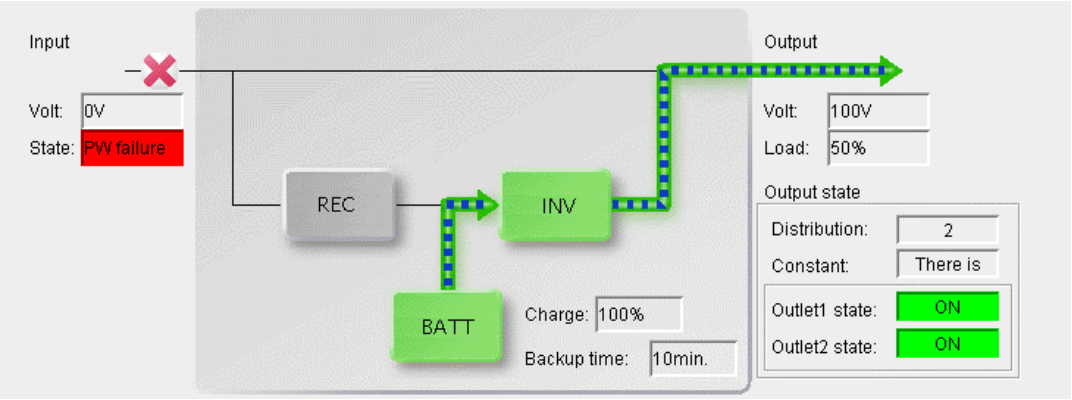
The CVCF function is suppressed and only the power-factor correction function works in ACTIVE FILTER mode.
This is applied automatically when the quality of the power supply is relatively good.

・When in ECONOMY mode

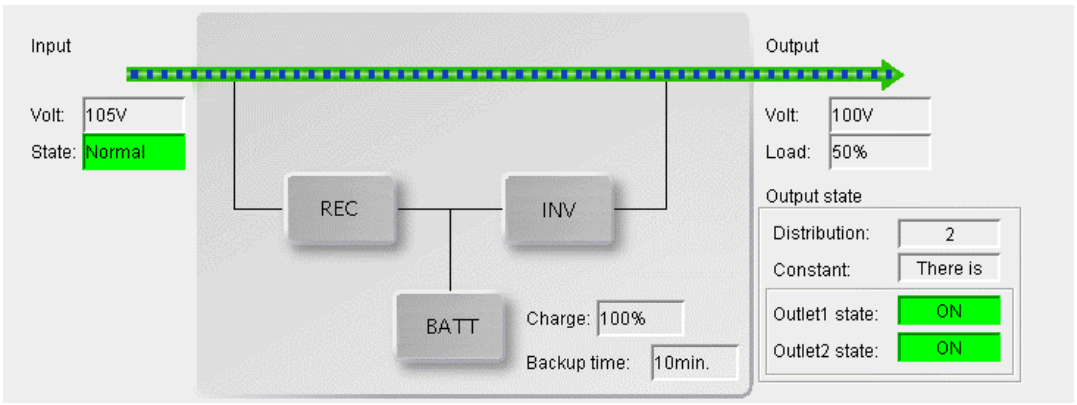


The CVCF function and the power-factor correction function are suppressed in ECONOMY mode
This is applied automatically when the quality of the power supply is extremely good.

When power failure

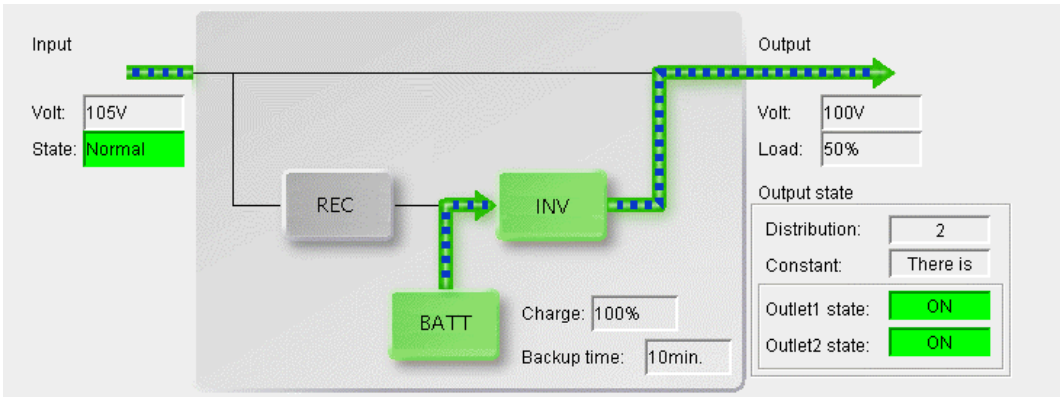


When performing bypass operation

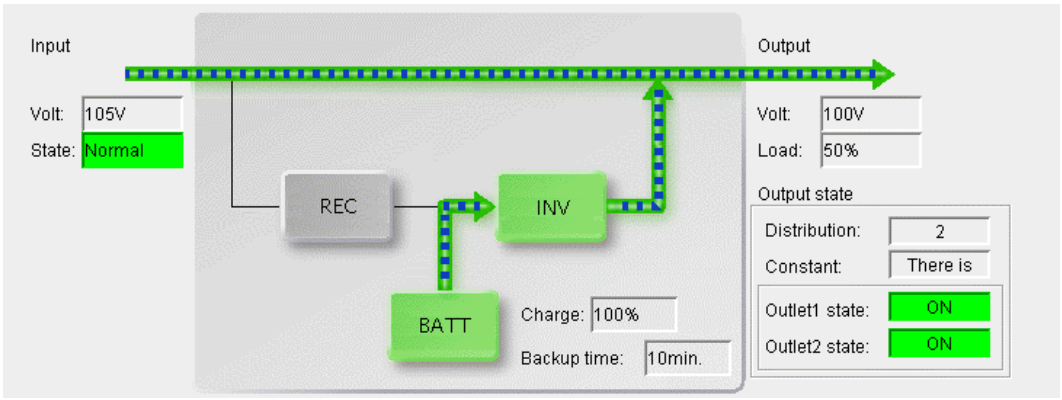


When performing battery test

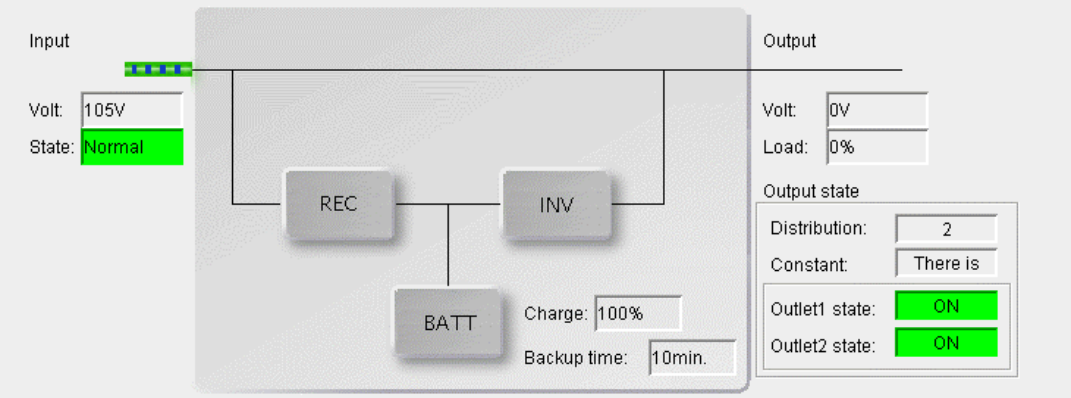
・When non-hybrid UPS or hybrid UPS in DOUBLE CONVERSION mode



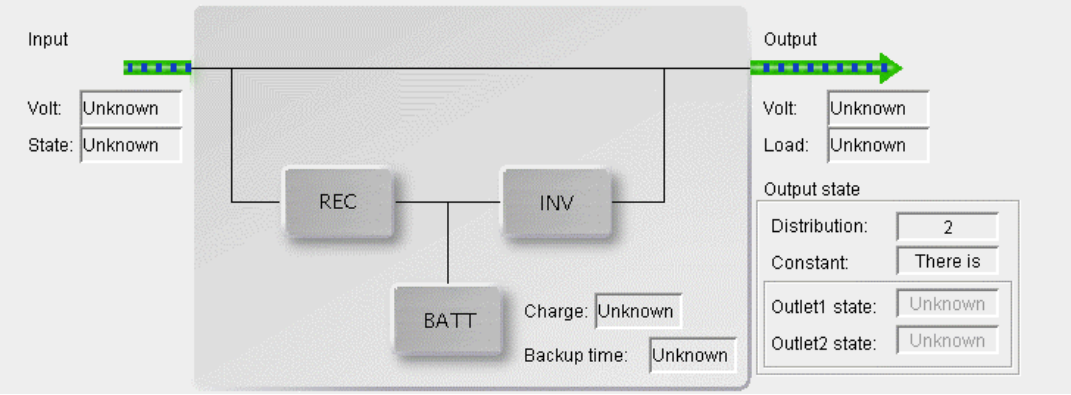
・When Hybrid UPS in ACTIVE FILTER mode or ECONOMY mode



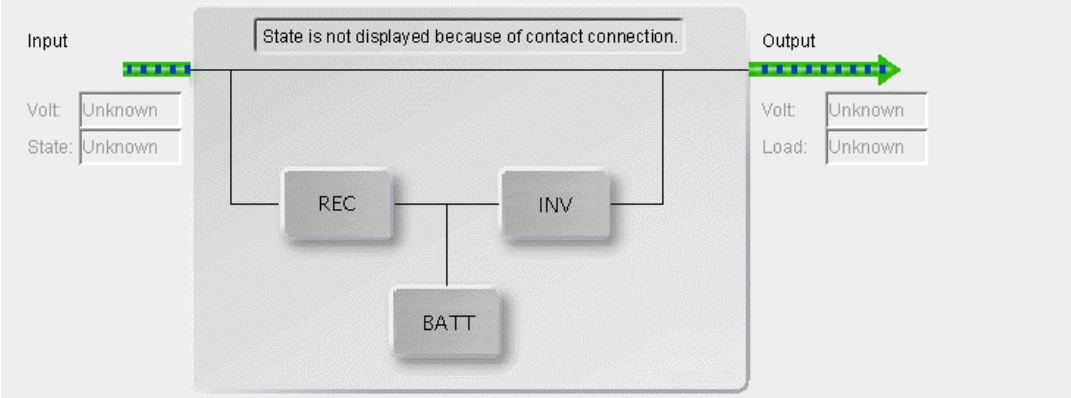
When standing by



When serial communication trouble



When contact connection



[3] Indication of charge and backup time

[Charge:]

This indicates the battery charge rate (%).

Note: This is not displayed if the UPS does not have a function for calculating the battery charge rate.

[Backup time:]

This indicates the backup time (in minutes) for which operation is possible under the current load conditions.

If the backup time is 1092 minutes or more, [1092min.] is displayed for the backup time.

Note: The backup time is only a rough estimation and may vary greatly depending on the load conditions. Furthermore, this is not displayed if the UPS does not have a function for calculating the backup time.

[4] Indication of output state

This is displayed for a UPS that supports multiple systems. The output state is indicated for each system.

[5] Indication of alarm information

When a breakdown (minor breakdown or major breakdown), overload, low battery voltage, battery life, or battery replacement alarm is triggered, the corresponding indication lights red or yellow to indicate the alarm. The [Breakdown] and [Bat. Low] alarm indications light red and the other alarm indications light yellow.

Note: [Unknown] is displayed when there is a contact connection.

[6] Indication of battery check information

This indicates the current battery check state (executing/stopped) and the result of the last battery check executed.

If a battery check ends abnormally, the result field lights red.

[7] Connecting device list

This lists the devices connected to the UPS.

[8] Add and Delete buttons

These buttons enable you to add and delete connecting devices. To delete a device, select the device you want to delete from the device list and then click the Delete button.

Info: You can also add and delete devices in the Settings screen. For details, refer to Section 6.3 , "Controlling Other Computers Operated by the UPS Control Software from a Local Computer**".**

[9] UPS condition indication bar



(The screen above is when you are using a multiple system output UPS. Only the UPS condition is indicated for a UPS without multiple system output.)

This indicates the operation and output conditions of the UPS. The display items are shown below.

● UPS Conditions

Condition Indication	**Description**
Communication trouble	Indicates communication trouble between the UPS and computer.
Power failure	Indicates a power failure.
Breakdown	Indicates a UPS breakdown.
Stop	Indicates the UPS is stopped.
Bypass operation	Indicates a UPS bypass operation is being performed.
Inverter operation	Indicates a UPS inverter operation is being performed (normal condition).

(If a contact connection is used to connect the UPS and computer, the above indications are not displayed.)

● System output condition

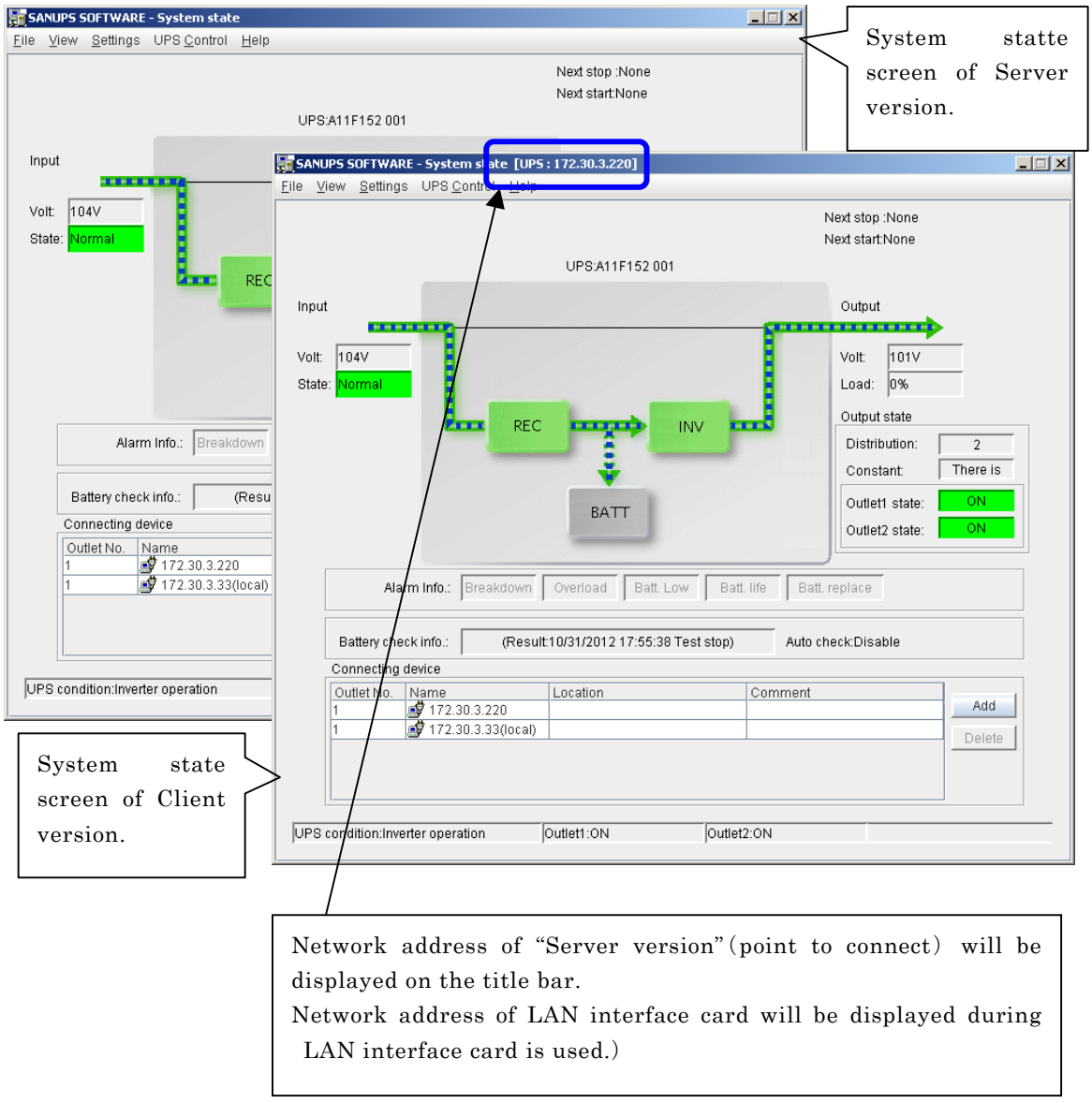
This indicates the condition of each system output when you are using a multiple system output UPS.

Condition Indication	Description
ON	Indicates the output for the corresponding system is on.
OFF	Indicates the output for the corresponding system is off.
Unknown	Indicates the condition for the corresponding system output (abnormal condition) cannot be acquired.

* This indication is only displayed when you are using a multiple system output UPS.

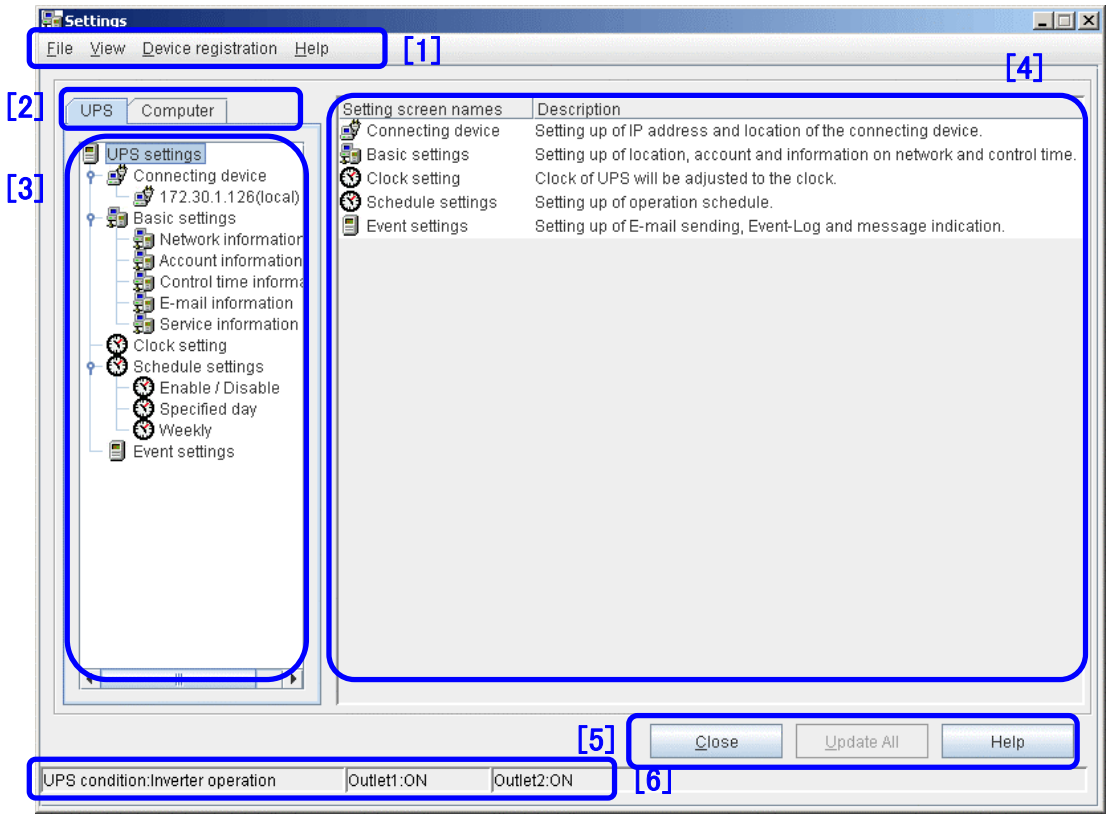
Title bar display

In the case of client connected device of server/client composition or the Network connected device to LAN interface card, connected server device or network address to LAN interface card will be displayed on the title bar.



6.2 About the Settings Screen

Selecting a menu item from the [Settings] menu on the menu bar of the main screen of **SANUPS SOFTWARE** displays the Settings screen. This section describes the Settings screen.



[1] Menu bar

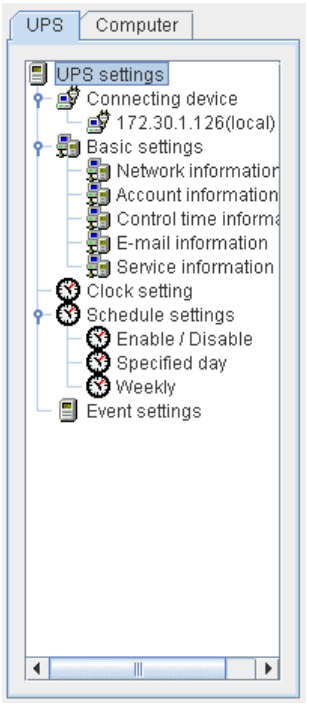
Menu name	Menu Item	Description
File	Exit	Exits the setting function.
View	Refresh	Updates the displayed information to the latest information.
Device registration	PC (network connection)	Allows you to register a PC (UPS control tool).
	PC (LAN I/F card contact connection)	Allows you to register a PC (contact connection).
	WS (network connection)	Allows you to register a WS (UPS control tool).
	WS (LAN I/F card Log-in connection)	Allows you to register a WS (serial terminal connection).
	WS (Telnet connection)	Allows you to register a WS (Telnet connection).
	Other device	Allows you to register another device.
Help	Search topics	Displays Help of **SANUPS SOFTWARE**.

[2] [UPS] and [Computer] tabs

Use these tabs to switch between the UPS and computer setting items.

[3] [UPS settings] and [Computer settings] menus

● **[UPS] tab (server/client composition)**



Item	Description
Connecting device	Displays a list of devices for which a connection to the UPS is set.
Connected device name	Displays information unique to each connected device.
Basic settings	
Network information	Allows you to set the network information for the UPS (*1)
Account information	Allows you to set the account information for the UPS.
Control time information	Allows you to set times related to UPS control when a power failure occurs, etc.
E-mail information	Allows you set mail server information (*2)
Service information	Allows you to set services provided for access from an external device. (*2)
Clock setting	Allows you to set the clock for the UPS (*3)
Schedule settings	(*4)
Enable / Disable	Allows you to enable/disable scheduled operations.
Specified day	Allows you to set a schedule to occur on a specified day.
Weekly	Allows you to set a schedule to occur weekly.
Event settings	Allows you to set the e-mail send information, event log recording information, and the display message content for each event.

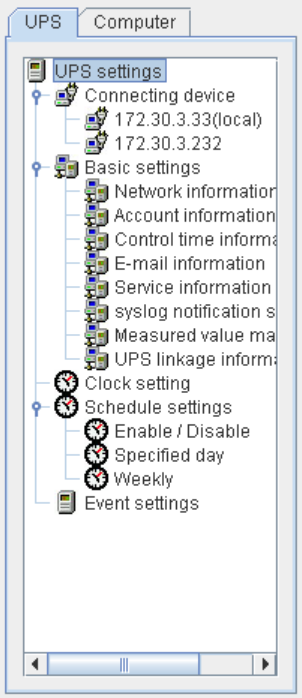
(*1) [Location, etc.] appears in the menu in the case of an environment with no network.

(*2) This item is not displayed in the case of an environment with no network.

(*3) This item is not displayed when a client is connected to the **SANUPS SOFTWARE** server via a network.

(*4) This item is not displayed when there is a contact connection to the UPS.

● [UPS] tab (LAN interface card composition)

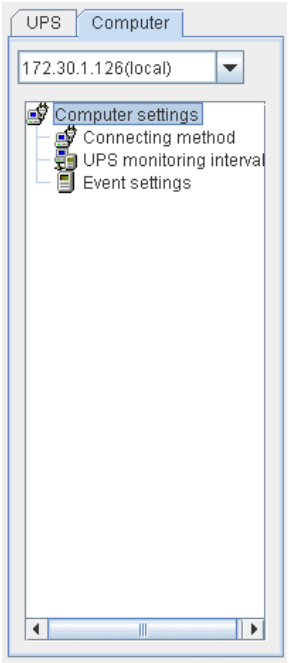


Item	Description
Connecting device	Displays a list of devices for which a connection to the UPS is set.
Connected device name	Displays information unique to each connected device.
Basic settings	
Network information	Allows you to set the network information for the UPS (*1)
Account information	Allows you to set the account information for the UPS.
Control time information	Allows you to set times related to UPS control when a power failure occurs, etc.
E-mail information	Allows you set mail server information (*2)
Service information	Allows you to set Network service of HTTP and Telnet.
Syslog notification setting	Allows you to set syslog notification.(*1)
Measured value management	Allows to set monitoring measured value collecting data and threshold value collecting date.(*1)
UPS linkage information	Allows to set UPS linkage function.(*1)
Clock setting	Allows you to set the clock for the UPS
Schedule settings	(*2)
Enable / Disable	Allows you to enable/disable scheduled operations.
Specified day	Allows you to set a schedule to occur on a specified day.
Weekly	Allows you to set a schedule to occur weekly.
Event settings	Allows you to set the e-mail send information, event log recording information, and the display message content for each event.

(*1) This item is displayed when the LAN interface card which is support this function.

(*2) This item is not displayed when there is a contact connection to the UPS.

- **[Computer] tab**



Item	Description
Connecting method	Displays information on the connected computer.
UPS monitoring interval	Allows you to set the interval and other settings for monitoring UPS information.
Event settings	Allows you to set the following information for each event. (a) WS script information Set the script for the WS for when there is a Telnet connection, SSH connection or a serial log-in connection to a UPS with a LAN interface. (*1) (b) Set the script to execute on the computer. (c) Set the log conditions to save to the computer. (d) Set message content and conditions for sending messages to the computer.

(*1) This menu item is displayed when you select a WS connected by a Telnet connection, SSH connection or a serial log-in connection to a UPS with a LAN interface.

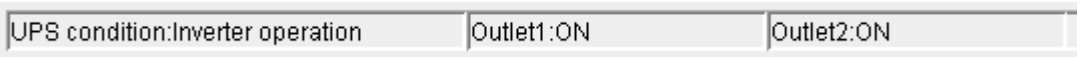
[4] Menu item setting (display) area

This area displays settings for the item selected from the [UPS]/[Computer] tab. You can configure (modify) settings in this area.

[5] Operation buttons

These buttons are for performing operations such as reflecting the changes made to settings and closing the setting function.

[6] UPS condition indication bar



(The screen above is when you are using a multiple system output UPS. Only the UPS condition is indicated for a UPS without multiple system output.)

Indicates the operation and output conditions of the UPS. The display items are shown below.

● UPS Conditions

Condition Indication	**Description**
Communication trouble	Indicates communication trouble between the UPS and computer.
Power failure	Indicates a power failure.
Breakdown	Indicates a UPS breakdown.
Stop	Indicates the UPS is stopped.
Bypass operation	Indicates a UPS bypass operation is being performed.
Inverter operation	Indicates a UPS inverter operation is being performed (normal condition).

(If the UPS and computer are connected with a contact connection, the above indications are not displayed.)

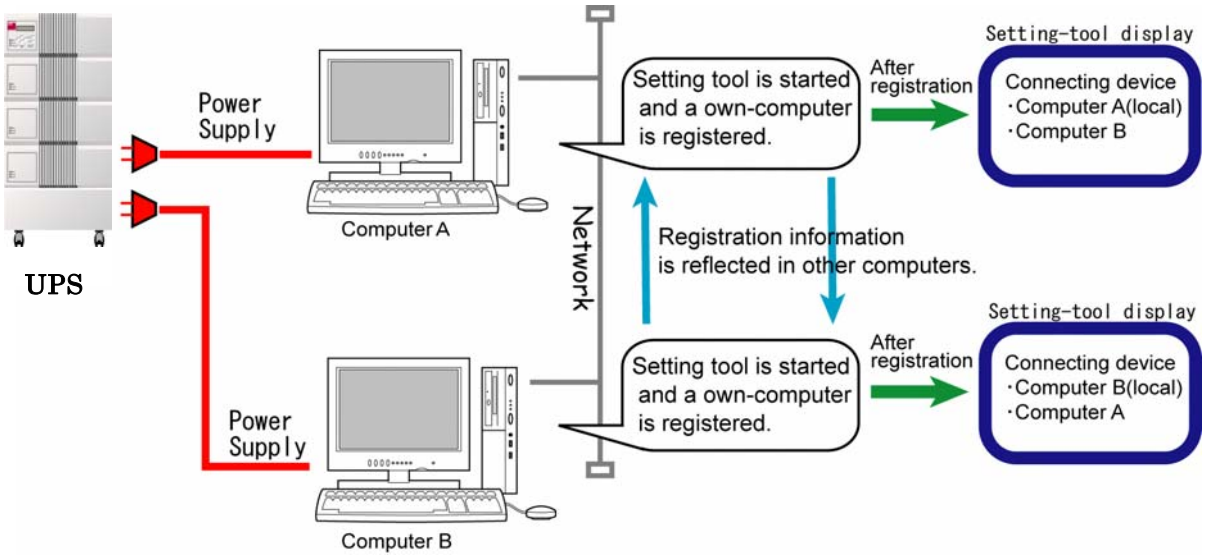
● System output condition

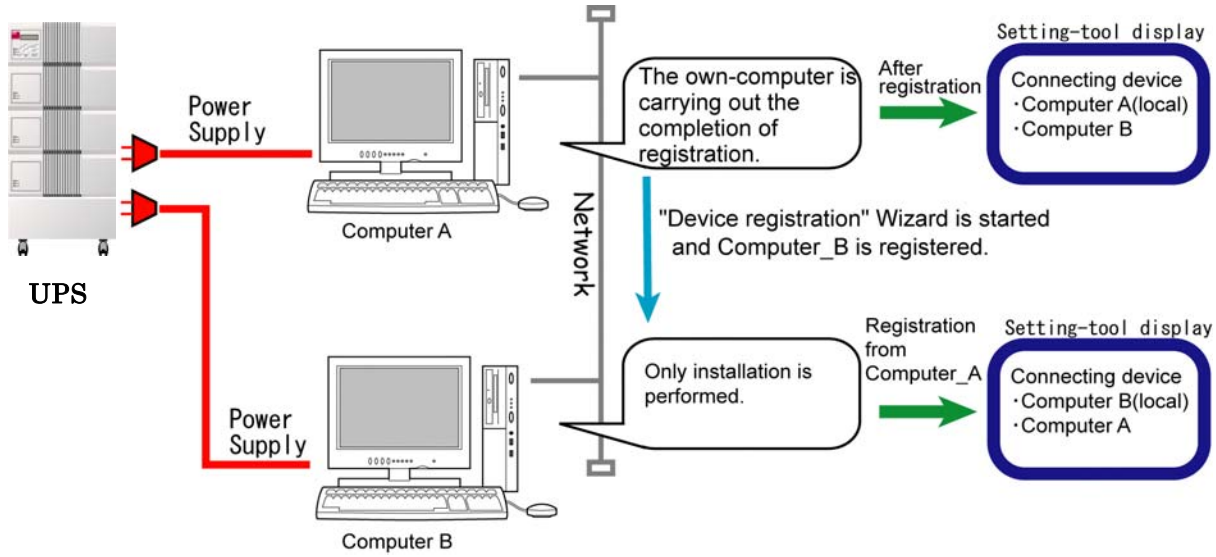
This indicates the condition of each system output when you are using a multiple system output UPS.

Condition Indication	**Description**
ON	Indicates the output for the corresponding system is on.
OFF	Indicates the output for the corresponding system is off.
Unknown	Indicates the condition for the corresponding system output (abnormal condition) cannot be acquired.

* This indication is only displayed when you are using a multiple system output UPS.

6.3 Controlling Other Computers Operated by the UPS Control Software from a Local Computer

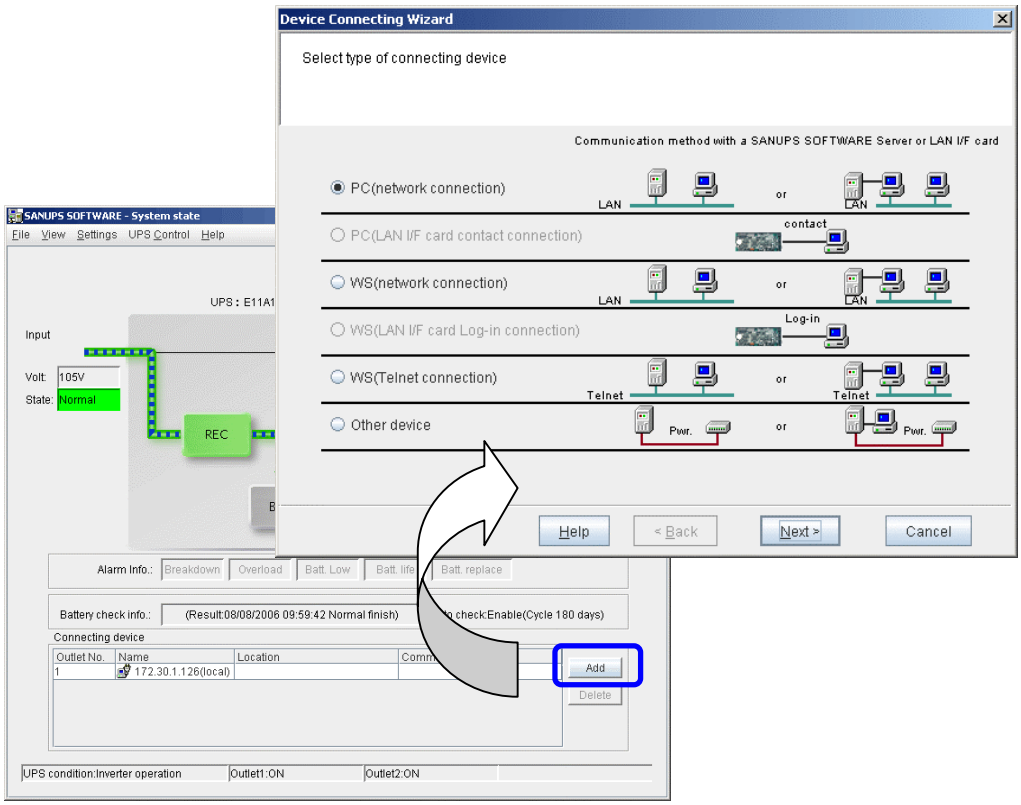




Procedures for registering a remote device (with SANUPS SOFTWARE installed)

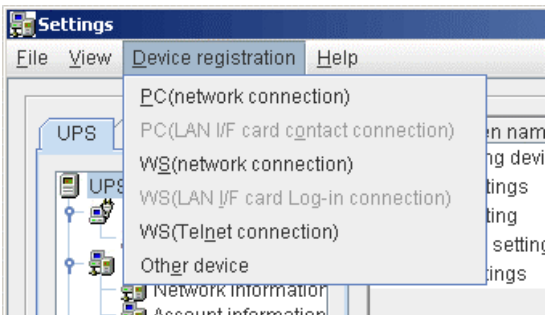
There are two procedures for registering a remote device (with **SANUPS SOFTWARE** installed).

(1) Procedure for adding a device from the main screen (System state screen)



[1] Press the Add button beside the Connecting device list on the main screen.
[2] The Device Connecting Wizard appears.
[3] Select **[PC (network connection)]** for **Windows** or **[WS (network connection)]** for **UNIX/Linux** on the first screen of the Device Connecting Wizard.
[4] Follow the on-screen instructions of the Device Connecting Wizard until device registration is complete. (You can modify settings configured with the wizard later.)

(2) Procedure for adding a device from the setting function (Settings screen)



[1] Select **[PC (network connection)]** for **Windows** or **[WS (network connection)]** for **UNIX/Linux** from the Device registration menu.
[2] The Device Connecting Wizard appears.
[3] Follow the on-screen instructions of the Device Connecting Wizard until device registration is complete. (You can modify settings configured with the wizard later.)

You can check a list of registered devices from [Connecting device] on the [UPS] tab.

6.4 Adding a Connecting Device to the UPS

When you want to use the UPS with several devices connected, you can perform the setup using the wizard function on each device (computer) separately or set up the devices from the local (own) computer.
You can select the [Device registration] menu from the Settings screen and then select one of the following devices from the list that is displayed. (The devices that can be registered are available for selection.)

Registration device	Device information	Registration condition
PC (network connection)	PC running **SANUPS SOFTWARE** (operating as a client)	**SANUPS SOFTWARE** is installed
PC (LAN interface card contact connection)	Uses the serial port of the LAN interface card	A LAN interface card is used
WS (network connection)	WS running **SANUPS SOFTWARE** (operating as a client)	**SANUPS SOFTWARE** is installed
WS (LAN interface card log-in connection)	Uses the serial port of the LAN interface	A LAN interface card is used
WS (Telnet connection)	Telnet connection from LAN interface card or **SANUPS SOFTWARE** server	A LAN interface card is used or the **SANUPS SOFTWARE** can use the network
Other device	Device other than a computer	–

Procedure for registering a PC or WS with a network connection

[1] Select **[PC (network connection)]** or **[WS (network connection)]** from the [Device registration] menu.
[2] The Device Connecting Wizard appears. Follow the on-screen instructions of the Device Connecting Wizard until device registration is complete.

* **SANUPS SOFTWARE** needs to be installed on the computer to be registered. (This process does not install the software.) Furthermore, this process is not necessary if you intend to use the GUI tool to perform registration with the wizard after installation.

Procedure for registering a PC with a LAN interface card contact connection

[1] Select [PC (I/F card contact connection)] from the [Device registration] menu.

[2] The Device Connecting Wizard appears. Follow the on-screen instructions of the Device Connecting Wizard to register the PC with a LAN interface card contact connection.

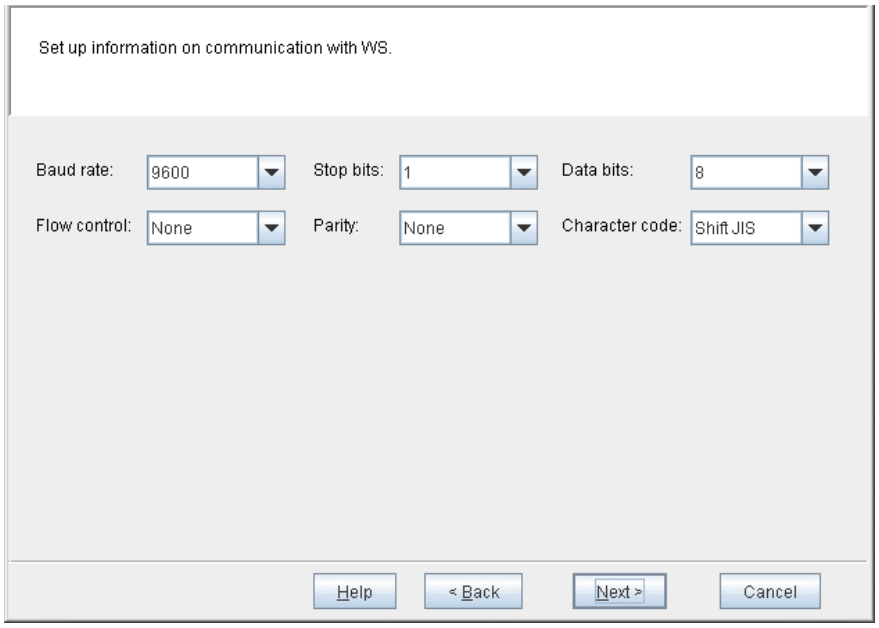
* Only one PC with a LAN interface contact connection can be registered to the LAN interface card. Therefore, registration is not possible if a device is already connected to the serial port of the LAN interface card. Furthermore, since there is a limit to the number of devices (up to 10 or 50) that can be connected to a LAN interface card, the number of devices already registered may make registration not possible even if the serial port is not being used. In such a case, delete a device that will not impact the shutdown operation such as a device registered via [Other device] and then try registration again.

Procedure for registering a WS with a LAN interface card log-in connection

[1] Select [WS (LAN I/F card Log-in connection)] from the [Device registration] menu.

[2] The Device Connecting Wizard appears. Follow the on-screen instructions of the Device Connecting Wizard to register the WS with a LAN interface card log-in connection.

* You can configure advanced settings for serial communication with the WS (LAN interface card log-in connection). However, some setting are not currently supported, so be sure to refer to the table below and only configure settings which are supported. (In most cases, use is possible with the default settings.)



Baud rate	Data bits	Flow control	Parity	Stop bits
1200	**8 (*)**	**None (*)**	**None (*)**	**1 (*)**
2400	7	Hardware	Even	1.5
4800	6	XON/XOFF	Odd	2
9600 (*)	5		Mark	
19200	4		Space	

(*) Default value

Unsupported

* Only one PC with a LAN interface log-in connection can be registered to the LAN interface card. Therefore, registration is not possible if a device is already connected to the serial port of the LAN interface card. Furthermore, since there is a limit to the number of devices (up to 10 or 50) that can be connected to a LAN interface card, the number of devices already registered may make registration not possible even if the serial port is not being used. In such a case, delete a device that will not impact the shutdown operation such as a device registered via [Other device] and then try registration again.

Procedure for registering a WS with a Telnet connection

[1] Select [WS (Telnet connection)] from the [Device registration] menu.

[2] The Device Connecting Wizard appears. Follow the on-screen instructions of the Device Connecting Wizard to register the WS with a Telnet connection.

About a WS with a Telnet connection

If there is a computer that allows a Telnet log-in on the network, it is possible to log in to that computer with Telnet and execute a registered command from **SANUPS SOFTWARE** operating as the server version or a LAN interface card. In such a case, installation of software on the target device is not necessary.

* Since there is a limit to the number of devices (up to 10 or 50) that can be registered, registration may not be possible because of the number of connection devices registered. In such a case, delete a device that will not impact the shutdown operation such as a device registered via [Other device] and then try registration again.

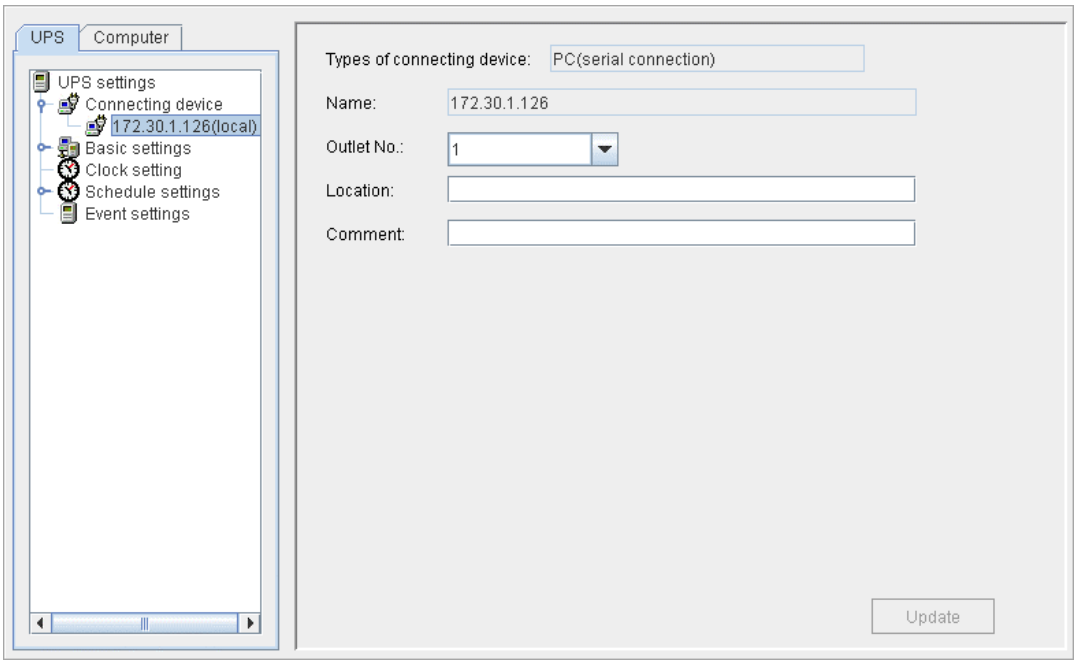
Procedure for registering other device

[1] Select [Other device] from the [Device registration] menu.

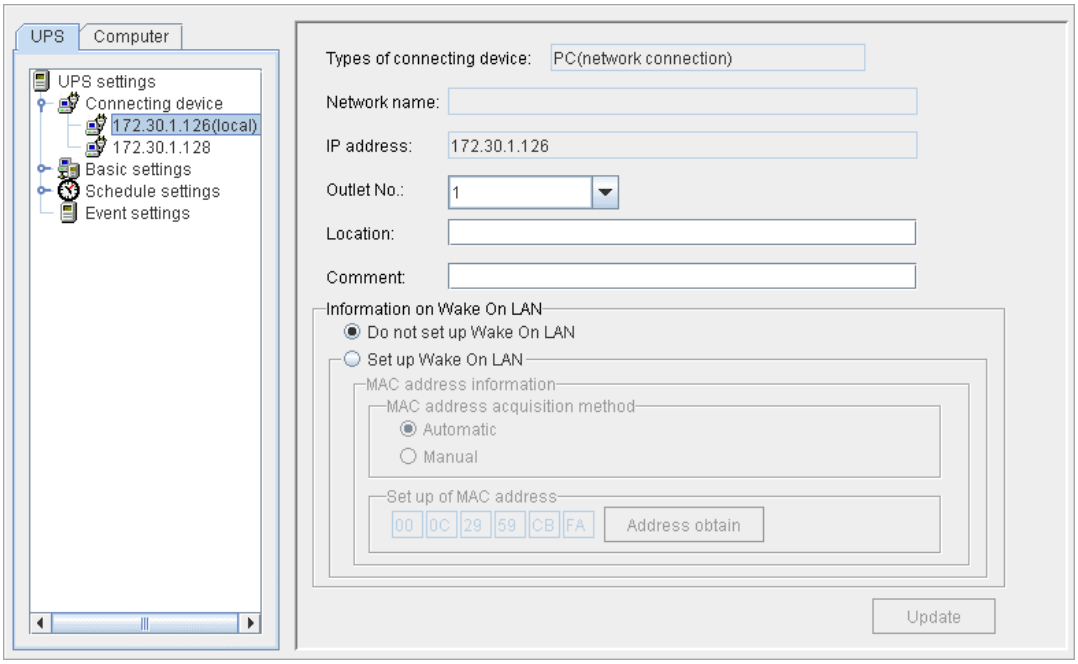
[2] The Device Connecting Wizard appears. Follow the on-screen instructions of the Device Connecting Wizard to register the other device.

6.5 Changing the Settings of Devices Connected to the UPS

You can change the information for connected devices. The settings configured when the device was registered with the wizard can be changed. View and set the information of each device from [Connecting device] on the [UPS] tab.



(The screenshot above is when the computer is running the server version of **SANUPS SOFTWARE**.)



(The screenshot above is when the computer is running the client version or network version of **SANUPS SOFTWARE**.)

6.6 Deleting Connecting Devices

When, for example, you want to change the connection method of the computer used for control, change the UPS that receives the power supply, change a computer name, or change the network name/IP address, you need to delete the connecting device from the control tool of **SANUPS SOFTWARE** and then perform registration again.
* There is no need to reinstall **SANUPS SOFTWARE**.

Procedure for deleting a device when using the GUI tool

(1) Procedure for deleting a device in the main screen

[1] Select the device you want to delete from the list of connecting devices.(The selected device is highlighted.)
[2] Click the Delete button.
[2] Click the OK button in the delete confirmation screen.

(2) Procedure for deleting a device in the Settings screen

[1] Click [Connecting device] on the [UPS] tab.
[2] Click the device you want to delete from the list of connecting devices on the right of the screen. (The selected device is highlighted.)
[3] Right-click the selected (highlighted) device to display the [Registration/Delete] menu.
[4] Select [Delete] from the menu.
[5] Click the OK button.

Procedure for deleting a device when using the GUI tool

[1] Move to the **SANUPS SOFTWARE** installation directory on the computer on which you want to delete the device registration and then execute **"./sg4delete"**
[2] You will be prompted to enter the account information for the UPS. Enter the account information.
[3] If account identification is successful, you will be prompted to confirm deletion. Enter "yes" to delete the device registration.

Restrictions

1. When a local computer is connected as a server and other devices are registered, the local computer cannot be deleted. Delete all other connecting devices and then delete the local computer.
2. A computer connected as a server cannot be deleted from a computer connected as a client.

6.7 Changing the Basic Settings of the UPS

You can view and change the network information, device information, control time information, and output system information for the UPS. Select [Basic settings] on the [UPS] tab to display the screen for the basic settings. There are the following basic settings.

- Network information (Note 1)
- Account information
- Control time information
- E-mail information (Note 2)
- Service information (Note 2)
- syslog nitification settings (Note 3)
- Measured value management (Note 3)
- UPS linkage information (Note 3)

Note 1: When you are using the **SANUPS SOFTWARE** as a stand-alone system (without using a network), [Location, etc.] appears as the menu item for this function.

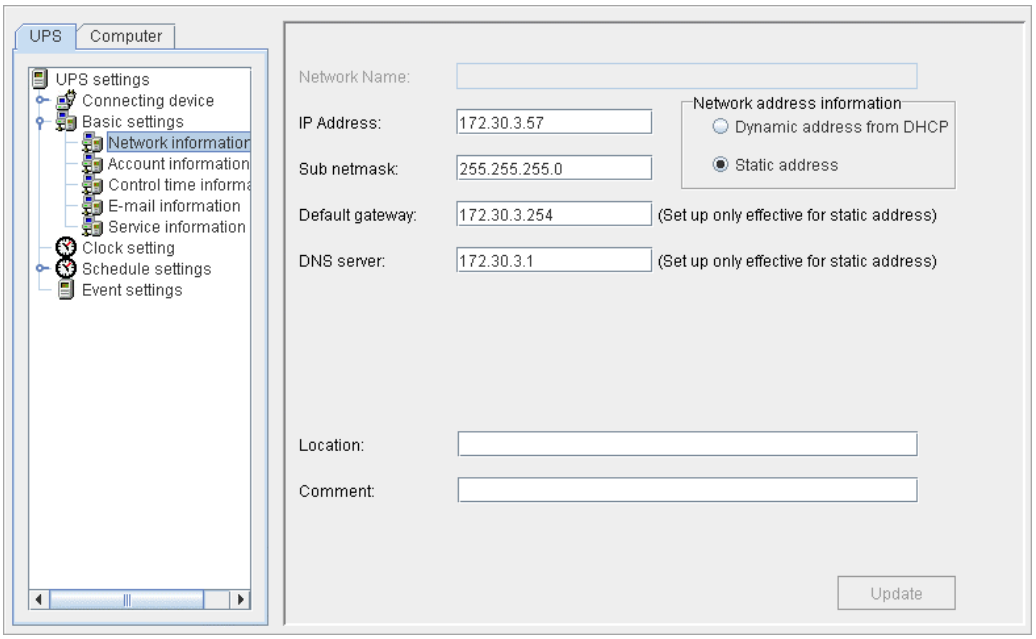
Note 2: When you are using the **SANUPS SOFTWARE** as a stand-alone system (without using a network), this menu item is not displayed.

Note 3: When using a LAN interface card that supports this function, function names will appear in the tree.

6.7.1 Network Information (Device Information) Settings

- Network settings when using a UPS with a LAN interface
- Settings such as the installation location of the UPS

The screenshot below shows the screen for setting the network information.



Setting	Description	Availability of settings varies depending on UPS type	
		Serial connection	LAN connection
Network Name	View (set) the network name of the UPS.	×	○
Network address information	Select the method of acquiring the network address. • Acquire a dynamic address from DHCP • Use a static address.	×	○
IP Address	View (set) the IP address of the UPS.	×	○
Sub net mask	View (set) the subnet mask of the UPS.	×	○
Default gateway	View (set) the default gateway address if you use a router.	×	○
DNS server	View (set) the DNS server address if you use a DNS.	×	○
Location	Set the installation location for the UPS. (You can leave this field blank.)	○	○
Comment	Set a comment for the UPS. (You can leave this field blank.)	○	○

In the case of [Device Information], only the location and comment can be set.

6.7.2 Account Information Settings

In order to prevent unauthorized access, you may be prompted to enter the account information when you access the UPS.
Use the account information settings function to change the account information for accessing the UPS.

For details on these settings, refer to Section 6.8 , "Changing the Account for UPS Operation".

6.7.3 Control Time Information Settings

Configure settings related to operation times for shutdown when there is a power failure or scheduled stop operation. These settings will become the standard operations.

For details on these settings, refer to Section 6.9 , "Configuring Time Settings Related to Shutdown Operations".

6.7.4 E-mail Information Settings

Configure the information related to sending and receiving e-mail.

For details on these settings, refer to Section 6.12 , "Setting Basic Information for E-mail".

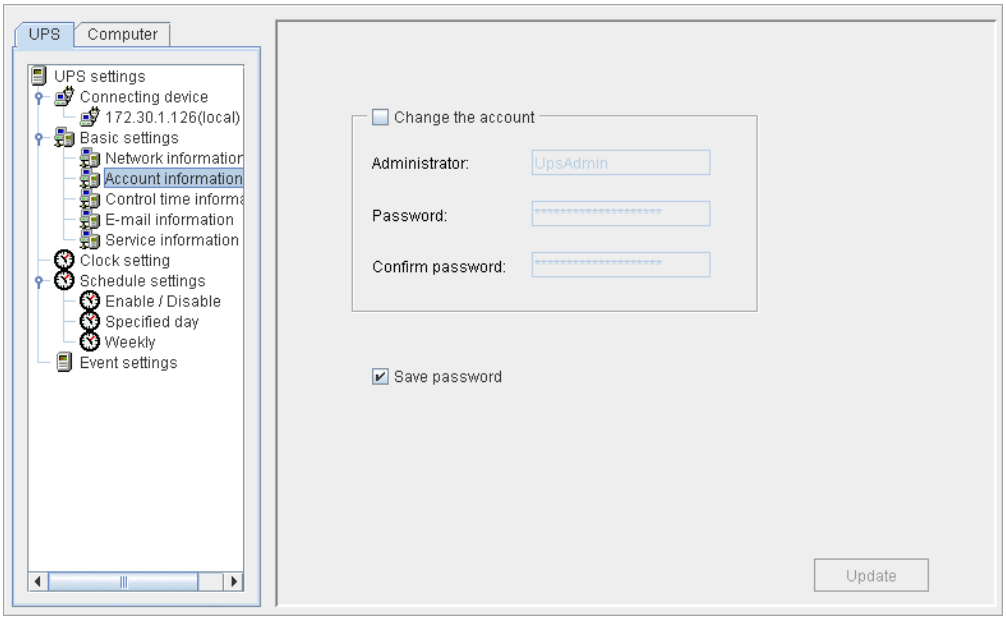
6.7.5 Service Information Settings

Configure the information related to services (HTTP, Telnet, and SNMP) provided by the **SANUPS SOFTWARE** server or LAN interface card.

For details on these settings, refer to Section 6.13 , "Using HTTP, FTP, Telnet, and SNMP".

6.8 Changing the Account for UPS Operation

Select [Account information] of [Basic settings] on the [UPS] tab.



In order to prevent unauthorized access, you may be prompted to enter the account information when you access the UPS.
The default information to enter is as follows.

Item	Default setting	Input condition
Administrator	**upsadmin**	Not case sensitive
Password	**UpsAdmin**	Case sensitive

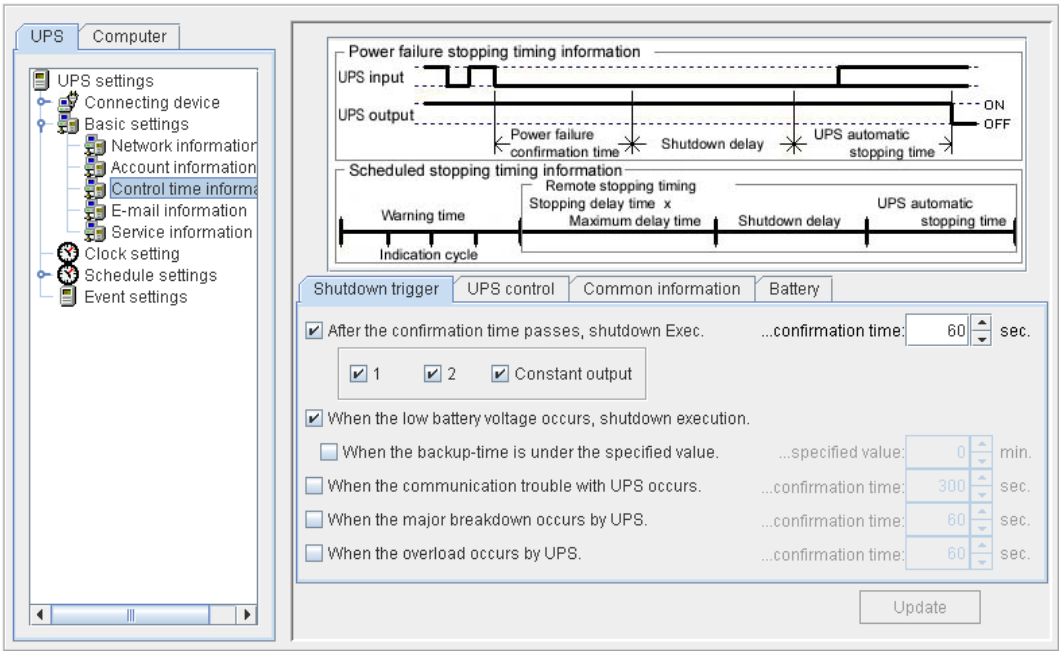
Use this function to change the default account information during use.
Select the [Change the account] checkbox and change the account information.
Enter a new administrator name and password and then enter the password again for confirmation.

If you select the [Save password] checkbox, you will not need to enter the account information when you set the UPS.

6.9 Configuring Time Settings Related to Shutdown Operations

Select [Control time information] of [Basic settings] on the [UPS] tab. The settings are divided by category into four tabs: Shutdown trigger, UPS control, Common information, and Battery.

6.9.1 [Shutdown trigger] Tab



This tab is for configuring the trigger conditions for shutdown.
Power failure, low battery voltage, serial communication trouble with UPS, major breakdown, and overload are defined as the shutdown triggers. Select the checkbox of the trigger you want to enable and then set the time period from the time of the occurrence of the phenomenon to the time when recovery from the phenomenon is judged to be impossible as the confirmation time. If the phenomenon recovers within the confirmation time, shutdown does not take place. If the confirmation time is exceeded without recovery from the phenomenon that caused the trigger, the shutdown process continues.

About [After the confirmation time passes, shutdown execution]

If recovery does not occur within the confirmation time after the occurrence of a power failure, a computer connected to an outlet with a checkmark added is shutdown. For details, refer to Section 6.10 , "Operating a Connected Computer for as Long as Possible during a Power Failure".

About […confirmation time] (Default setting: 60 sec.)

Configure the time (in seconds) from the occurrence of a power failure to when recovery is considered to be impossible. If recovery from the power failure occurs within this time, the shutdown process does not take place and the state switches back to the normal state. If this time is exceeded without recovery from the power failure, the shutdown process continues, regardless of whether there is a subsequent recovery from the power failure.

[When the low battery voltage occurs, shutdown execution.](Default condition: Enabled)

Start shutdown execution when detects low battery voltage within Power failure confirmation time.

If uncheck this setting value, shutdown execution by low battery voltage will not be operated.

[When the backup-time is under the specified value](Default condition: Disabled)

This setting is available to the UPS which supports measuring of Battery remainder hold time.

If battery remainder hold time is shorter than setting value(minutes), **SANUPS SOFTWARE** considers as low battery voltage occurs without detection of UPS low battery voltage and then start shutdown execution.

[When the communication trouble with UPS occurs](Default condition: Disabled)

Under composition of serial communication between computer and UPS, shutdown execution setting is available when UPS serial communication error occurs and communication error after the setting time.

In this situation, all computers will be shutdown executed.

[When the major breakdown occurs by UPS](Default condition: Disabled)

Under UPS major breakdown occurs shutdown execution setting is available when UPS does not back to normal past the specified time. (If major breakdown occurs, UPS will switches to bypass operation so back up is not available under power failure.

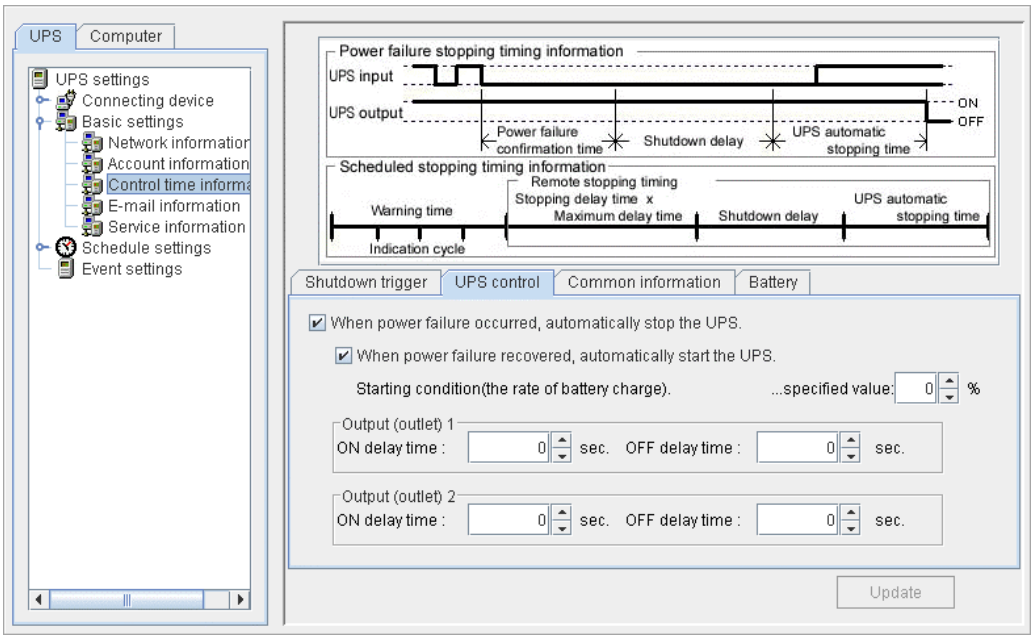
In this situation, all computers will be shutdown executed.

[When the overload occurs by UPS](Default condition: Disabled)

Under UPS state is overload, shutdown execution setting is available when UPS does not back to normal past the setting time. (If UPS state is overload, UPS switches to bypass operation so back up is not available under power failure occurs.)

In this situation, all computers will be shutdown executed.

6.9.2 [UPS control] Tab



This tab is for configuring the conditions for controlling the starting and stopping of the UPS when there is a power failure and recovery.
For a UPS that supports multiple system control, you can also set the output off delay time and output on delay time for each system separately.
For details, refer to Section 6.11 , "Delaying Starting and Stopping of Connecting Devices".

[When power failure occurred, automatically stop the UPS] (Default condition: Depends on the types)

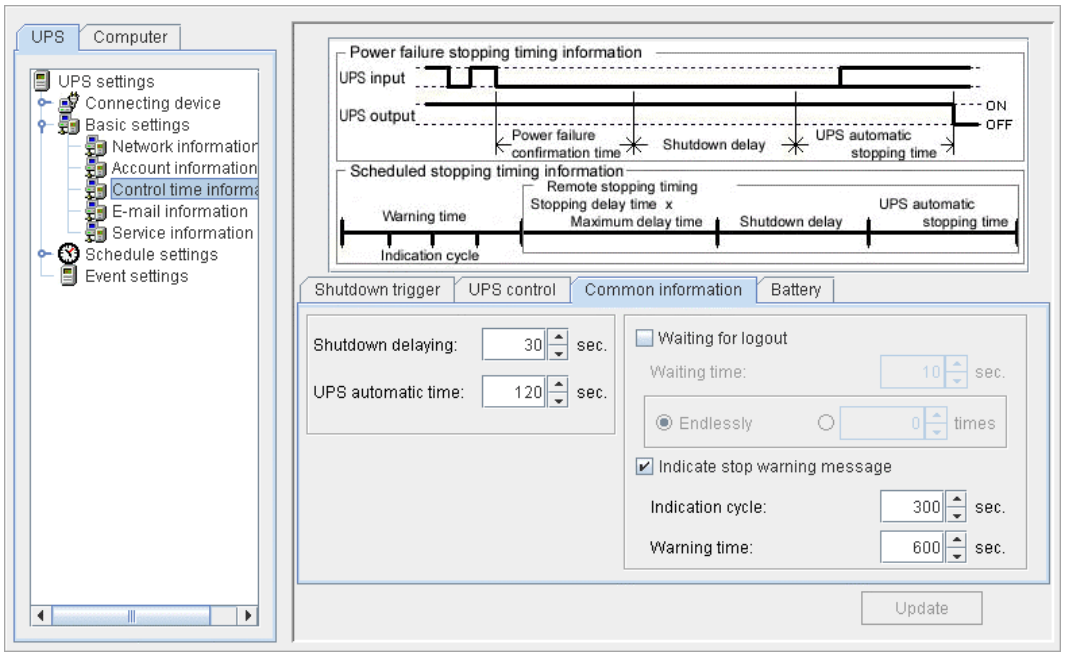
Selecting this checkbox enables you to specify whether to turn the output of the UPS off after the UPS auto stop time is exceeded when a power failure occurs. Configure the automatic stop time on the [Common information] tab.
If a device other than a computer is connected to the UPS and output of the UPS cannot be turned off, unselecting this checkbox enables supply of the output of the UPS to continue.

[When power failure recovered, automatically start the UPS] (Default condition: Depends on the types)

Selecting this checkbox enables the output of the UPS that was stopped automatically upon occurrence of the power failure to be turned on automatically after recovery from the power failure. Furthermore, the battery charge rate is used as an additional condition for automatically starting the UPS after recovery from the power failure (if the UPS has a function for calculating the battery charge rate).

※ : This setting value of default may be “disable” depends on the type of LAN interface card. Please confirm setting value is as “unable” when restart computer after power recover.

6.9.3 [Common information] Tab



This tab is for configuring common control time information.

[Shutdown delaying] (Default setting: 30 sec.)

Set the preparation time (in seconds) for from when recovery is considered impossible to when shutdown of the computer starts. In addition to setting this time, you can define a script to perform tasks such as ending applications during the delay time prior to shutdown.

[UPS automatic time] (Default setting: 120 sec.)

Set the time (in seconds) from the start of shutdown of the computer until output of the UPS is turned off. If the [When power failure occurred, automatically stop the UPS] checkbox is selected, output of the UPS is turned off after this time is exceeded.

<Note>
For the UPS automatic stop time, set a time period longer than that required to complete shutdown of the computer.

[Waiting for logout] (Default condition: Disabled)

You can specify shutdown not to occur until all users log out in the case in which users are logged in to a PC (network connection) or WS (network connection) at a time scheduled for a UPS stop or when a controlled UPS stop is to be performed.

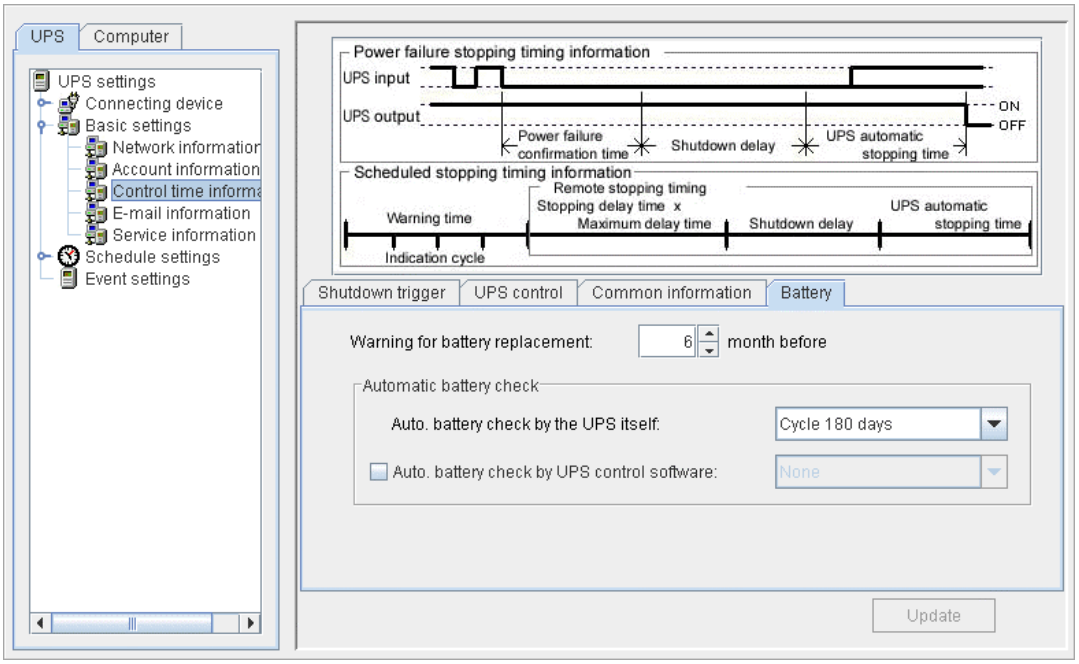
[Indicate stop warning message] (Default condition: Enabled)

Specify whether to display a notification message at a specified interval to indicate a UPS stop will occur. In [Warning time], set how many seconds prior to the scheduled stop time you want the stop notification message to be displayed. After this, the stop notification message is displayed at the timing set for [Indication cycle].

<Note>
Depending on the using OS, there are restrictions on this function.
Read “Appendix J　About constraint by the using OS”, confirm whether there are any corresponding items, then use it.

6.9.4 [Battery] Tab

This tab is for configuring information related to the battery.



[Warning for battery replacement] (Default setting: 6month before)

When set battery replacement period is coming, notify battery replacement message. After passed battery replacement period, notify every one week.

About [Automatic battery check]

For a UPS that has an automatic battery check function, you can set [None], [Cycle 30 days], [Cycle 90 days], or [Cycle 180 days] for the setting for the UPS to automatically check its battery.

Furthermore, if you want an automatic battery check to be performed from the control software, select the [Auto. battery check by UPS control software] checkbox and select [None], [Cycle 30 days], [Cycle 90 days], or [Cycle 180 days].

A cycle is calculated as the number of days that have elapsed since the point in time the battery check last began.

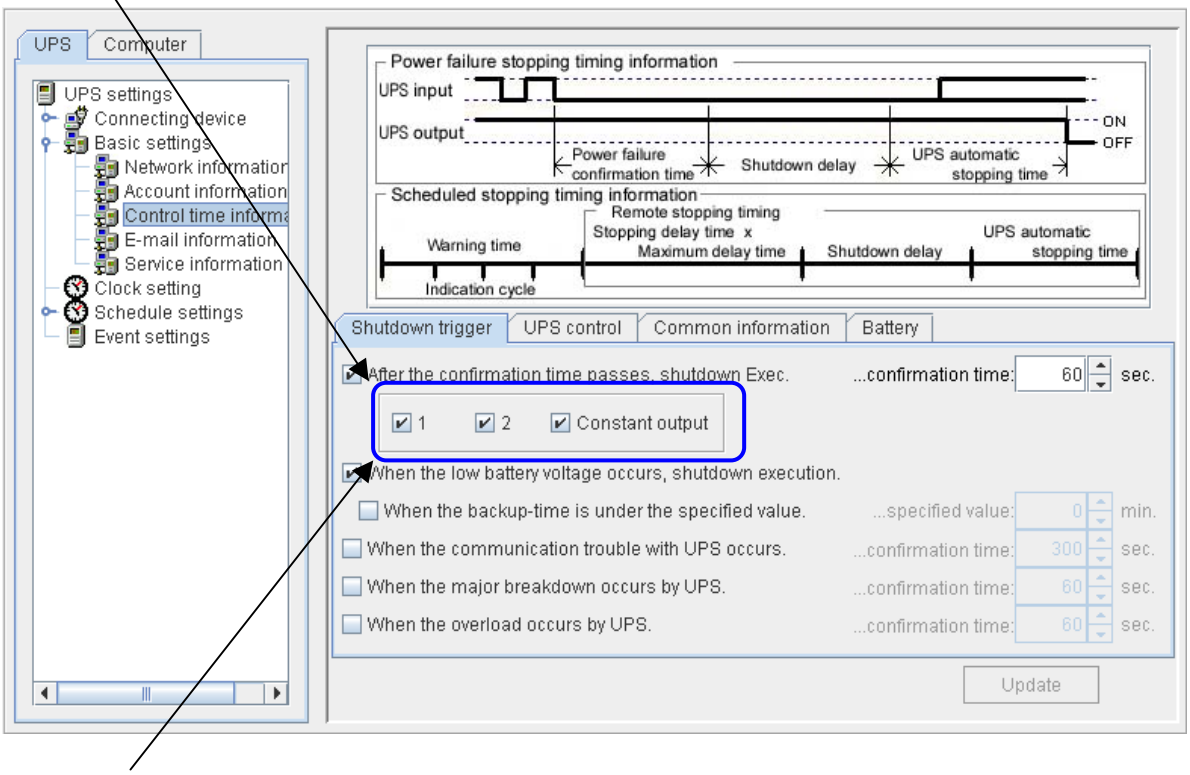
If battery checks are set to be performed by the control software and the control software is stopped at a time scheduled for an automatic battery check, a battery check is not requested until the control software starts.

It is possible for the administrator to be notified of the battery check results if you configure the corresponding settings for message display, sending e-mail, and script execution as instructed in Section 6.16 , "About Event Settings".

Note
If you want automatic battery checks to be performed, set them to be performed by either the UPS or the control software. If you set automatic battery checks to be performed by both the UPS and the control software, the cycle in which battery checks take place will be short.

6.10 Operating a Connected Computer for as Long as Possible during a Power Failure

Select [Control time information] of [Basic settings] on the [UPS] tab.
Select the [After the confirmation time passes, shutdown Exec.] checkbox.



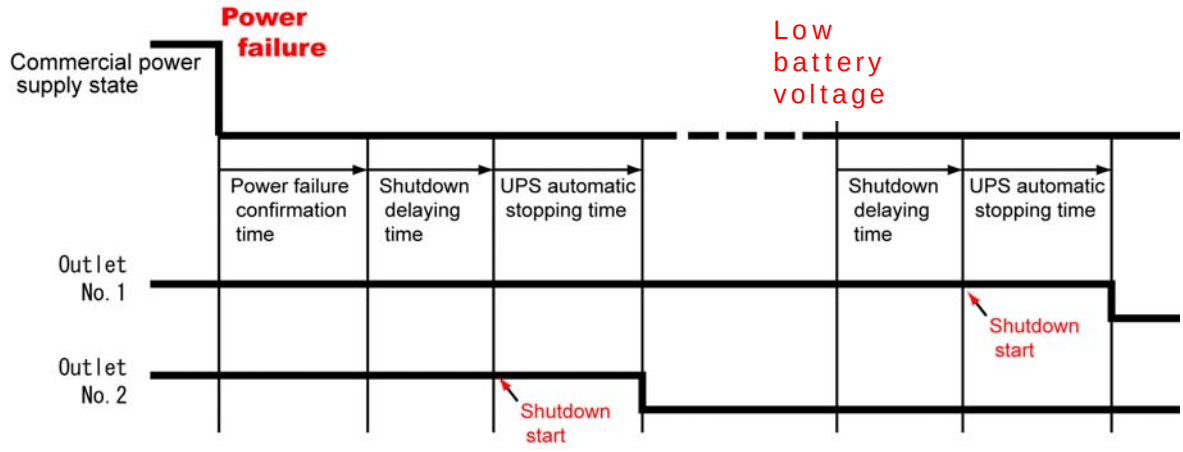
About the outlet numbers targeted for shutdown
If the checkmark is removed from the checkbox for an outlet number, recovery from a power failure after the power failure confirmation time has elapsed is not considered to be impossible for the device that is connected to that outlet. When the low battery voltage signal is received from the UPS, the computer switches to the shutdown process in accordance with the sequence for when battery voltage becomes low. (In other words, you can stop the device of the outlet with the checkbox selected (to lighten the load on the UPS) in order to enable the applicable device to operate as long as possible.) When you want to remove the checkmarks from all the checkboxes for the outlet numbers, remove the checkmark from the [After the confirmation time passes, shutdown Exec.] checkbox.

The settings you can set differ depending on the UPS type.

	Multiple system output UPS	Other UPS	Default condition
Outlet 1	Can be used	Can be set	Selected
Outlet 2	Can be used	Cannot be set	Selected
Constant output	Can be used	Cannot be set	Selected

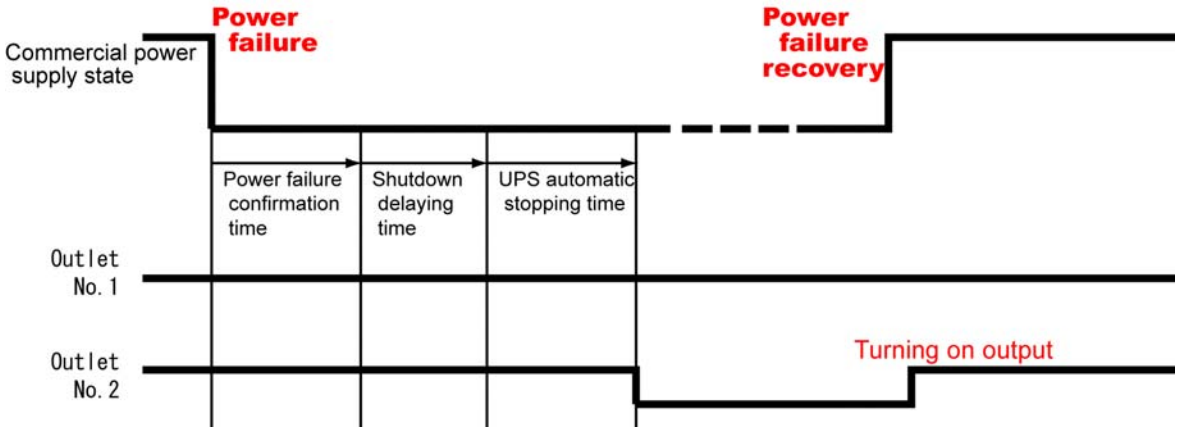
* For a UPS without a multiple system output function, only output outlet 1 is available.
* For a UPS with a multiple system output function but no constant output, the constant output outlet cannot be set.

The operation sequence when outlet 1 is not selected (when using multiple system output UPS)

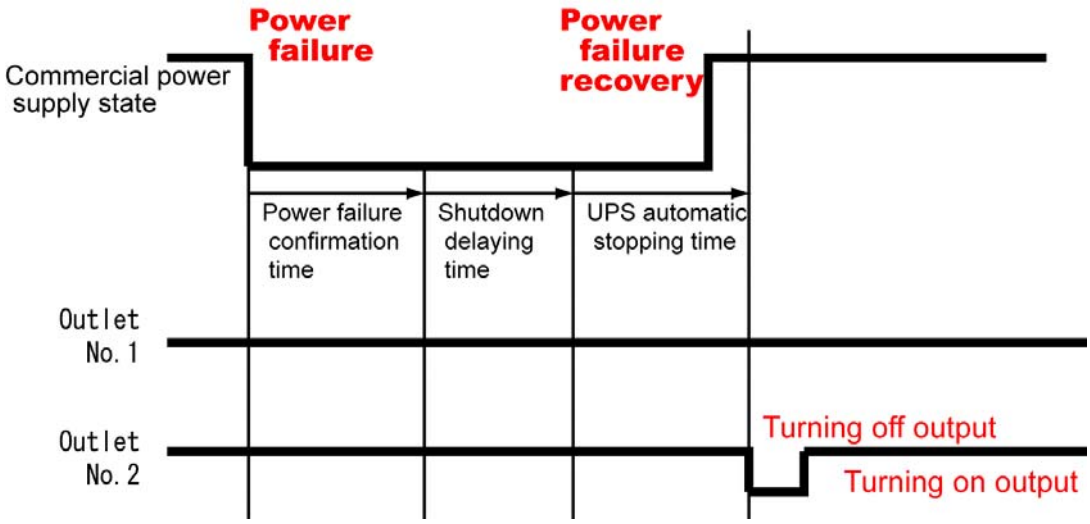


The computer connected to outlet 2 shuts down ordinarily and then the output of outlet 2 is turned off. After that, the computer connected to outlet 1 starts the shutdown process at the point in time when it detects the low battery voltage signal from the UPS.

The operation sequence when outlet 1 is not selected and a recovery from a power failure occurs (when using multiple system output UPS)



If recovery from a power failure occurs before a low battery voltage signal is received from the UPS, the shutdown start process is suspended at that point in time.



If there is a recovery from a power failure during the shutdown delay time or UPS automatic stop time, the shutdown process for the outlet continues. Output is turned on again after it is turned off.

Note
If a checkmark is removed for an outlet number of [After the confirmation time passes, shutdown Exec.], recovery from a power failure after the power failure confirmation time has elapsed is not considered to be impossible for the device that is connected to that outlet. Therefore, the “Power failure (AC input power trouble)” event message is displayed as shown below when a power failure occurs.

"Power failure has occurred. Shutdown will start after 0 minute 0 second."

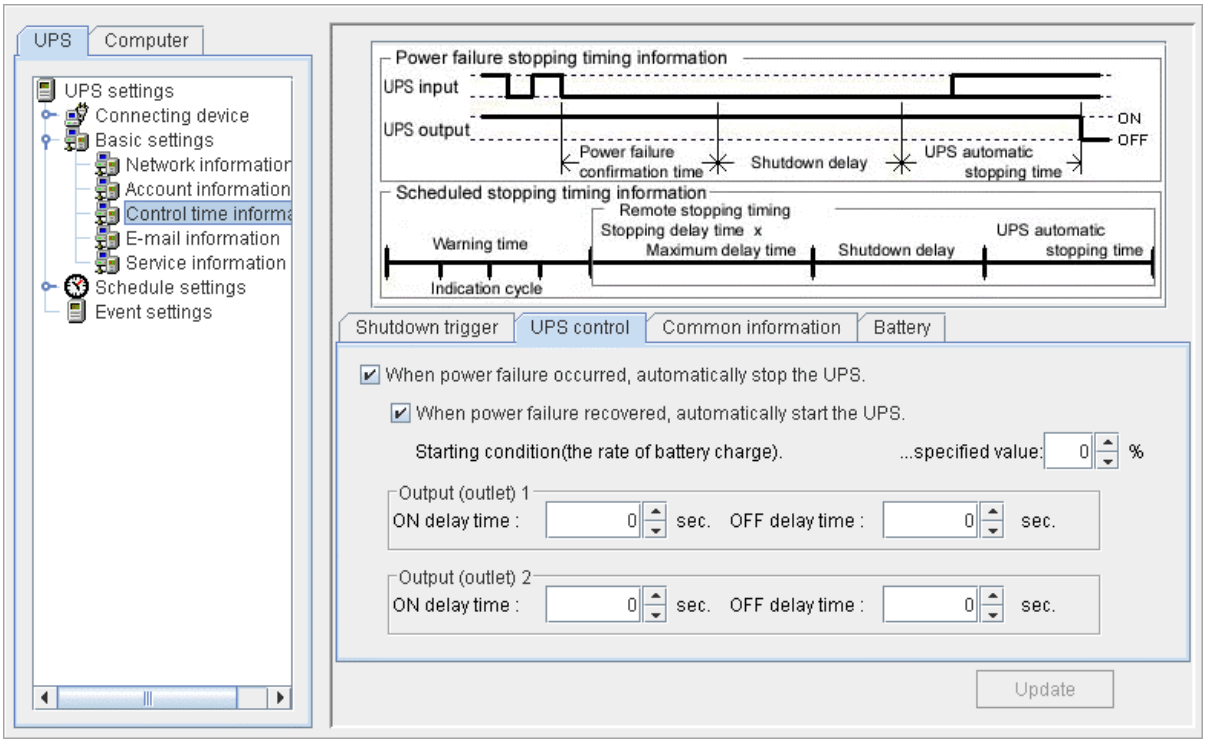
This message is displayed because a common event message is used regardless of whether the power failure confirmation time is ignored. However, "…0 minute 0 second…" is only displayed when the power failure confirmation time is ignored. If you want to change the content of this message, refer to Section 6.19 , "Changing the Content of the Messages Displayed when Events Occur".

6.11 Delaying Starting and Stopping of Connecting Devices

These settings can only be set for a UPS that supports multiple system output.
(These settings are not displayed for other UPS.)

If you use a UPS that supports multiple system output, you can set the start and stop delay time for output outlets separately.
Use this function to stop or start the computer earlier (or later) than other computers.

Select [Control time information] of [Basic settings] on the [UPS] tab.

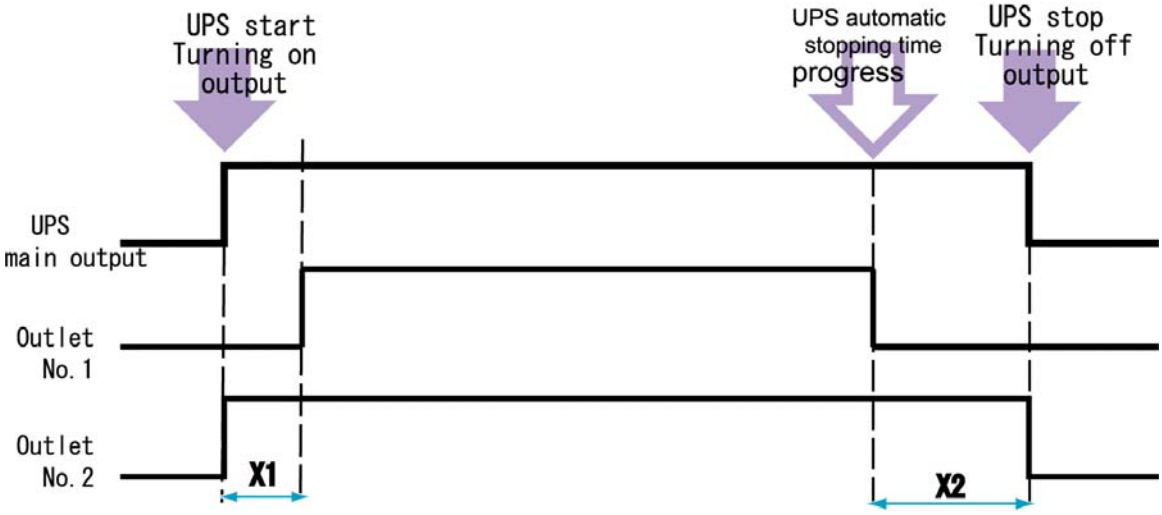


In the screen above, you can set [ON delay time] and [OFF delay time] for each of the output outlets.
The default state for all settings is 0 sec., therefore:

ON delay time = UPS output ON time (Turned ON immediately with UPS output)
OFF delay time = UPS output OFF time (Simultaneously turned OFF with stopping of UPS output)

<Caution>
“OFF delay time” is the delay time of the each consents after “UPS automatic time” is passed.
This setting can not set delay setting of shutdown starting time of computer.

The following diagram shows the operation sequence when output system information is set.



Timing of UPS start

When the output of the UPS is turned ON (as a result of a scheduled operation or a recovery from a power failure:

- Output outlet 1 turns ON after X1 seconds. **(In the diagram above, turns ON after X1 seconds have elapsed.)**
- Output outlet 2 turns ON immediately.

Timing of UPS stop

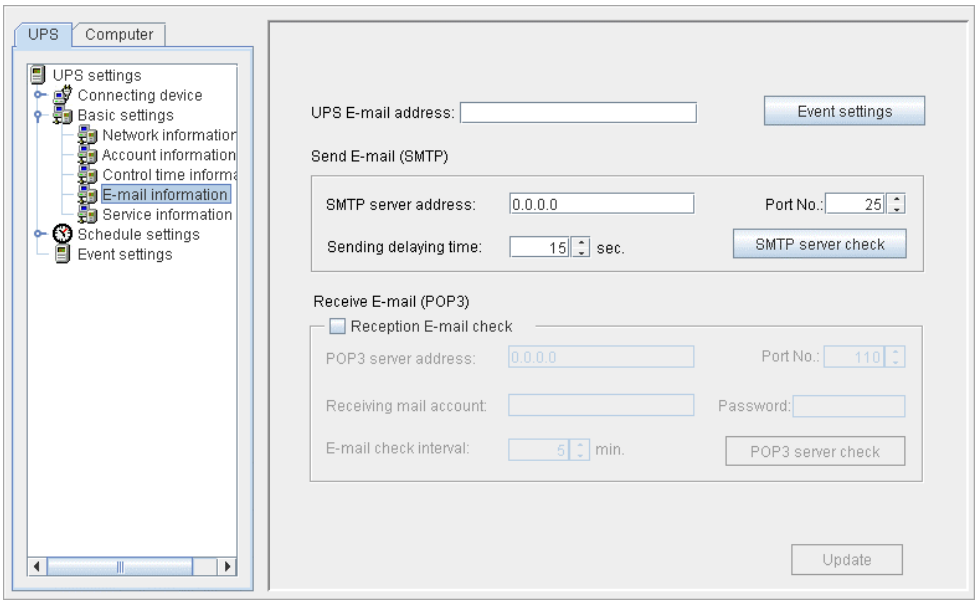
When the output of the UPS is turned OFF after the time set for [UPS automatic time] elapses according to the UPS stop process being performed (as a result of a scheduled operation or a power failure):

- Output outlet 1 turns OFF immediately.
- Output outlet 2 turns OFF after X2 seconds. **(In the diagram above, turns OFF after X2 seconds have elapsed.)**

6.12 Setting Basic Information for E-mail

An e-mail notification can be sent when an event such as a power failure occurs. To use the e-mail function, you need to configure the basic settings for e-mail on this screen and whether to send e-mail for each of the events. (For details on setting the sending of an e-mail notification for each event, refer to Section 6.17 , "Sending E-mail Notifications to Specified Addresses when Trouble Occurs".)

●In the case of server/client composition
Select [E-mail information] of [Basic settings] on the [UPS] tab.



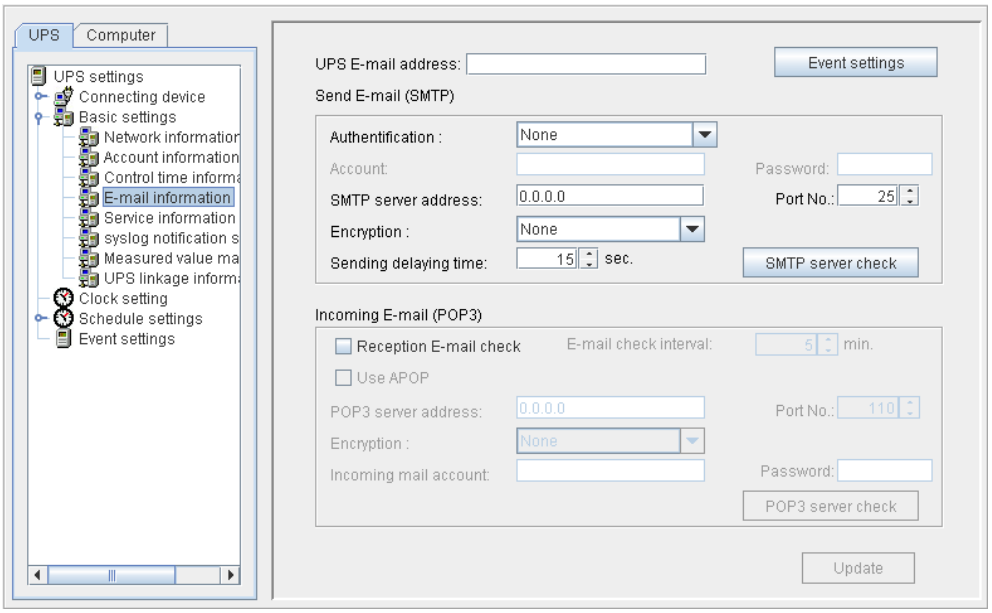
Setting	Description
UPS E-mail address	Set the address for sending e-mail.
Event settings	Switch to Event settings screen.
Send E-mail (SMTP)	
SMTP server address	Set the address of the SMTP server SMTP.
Port No.	Set the port number of the SMTP server.
Sending delaying time	Set how many seconds after the occurrence of an event to send e-mail. If multiple events occur within the specified time, the multiple events are notified in a single e-mail message.
SMTP server check	Check whether use of the SMTP server is possible.
Receive E-mail (POP3)	
Reception E-mail check	Set whether to check for incoming e-mail. If you set e-mail to be received, you can use e-mail to acquire information such as the condition of the UPS.
POP3 server address	Set the address of the POP3 server.
Port No.	Set the port number of the POP3 server.
Receiving mail account	Set the account for receiving e-mail.
Password	Set the password for receiving e-mail.

Setting Basic Information for E-mail

Setting	Description
E-mail check interval	Set the interval for checking for incoming e-mail.
POP3 server check	Check whether to enable POP3.
Event settings	Switch to the screen for setting whether to send e-mail and the e-mail destinations for each event. Click the Update button to update the displayed information before clicking the [Event settings] button to switch screens.

Note 1: Some versions of LAN interface card may not support receiving e-mail. When such a card is used, the receive e-mail settings are unavailable.

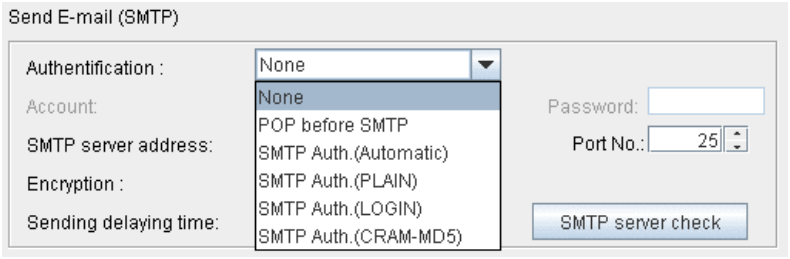
●In the case of LAN interface card composition.
Choose [UPS]－[Basic settings]－[E-mail information].



Setting	Description
UPS E-mailaddress	Set the address of E-mail sender.
Event settings	Switch to event setting screen.
Send E-mail (SMTP)	
Authentification	Set the type of mail authentication.(※1)(※2)
Account	Set the account name of authentication.(※1)
Password	Set the password of authentication.(※1)
SMTP server address	Set the address of SMTP server.
Port No.	Set the port number of SMTP server.
Encryption	Set the type of Encryption.(※1)(※3)
Sending delaying time	Set how seconds after the event occur to send E-mail. Notify multiple events from the one E-mail under multiple events occurred while the specified time.
SMTP server check	Check the use of SMTP server.
Incoming E-mail (POP3)	
Reception E-mail check	Set the possibility of mail receiving. If set to receive mail , it is available to gain UPS information by E-mail.
E-mail check interval	Set the checking interval of receiving mail.
Use APOP	Set the password Encryption which uses the APOP.(※1)
POP3 server address	Set the address of POP3 server.
Port No.	Set the port number of POP3 server.
Encryption	Set the type of Encryption.(※1)(※4)
Incoming mail account	Set the mail account when receiving the mail.
Password	Set the password when receiving the mail.
POP3 server check	Check the use of POP3 server.

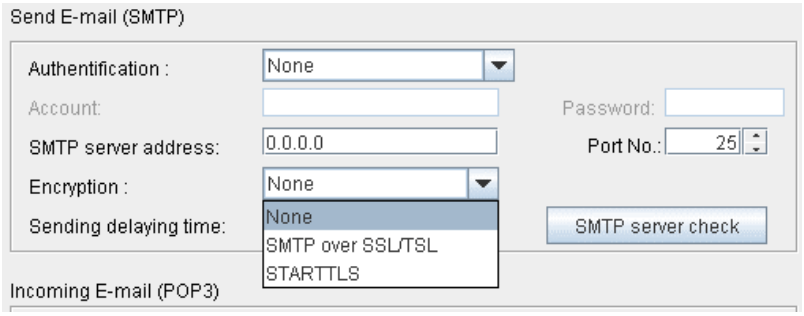
(※1) It may has unsupported function up to the version of LAN interface card. Unsupported function will not be displayed.

(※2) Authentication of Send E-mail (SMTP).



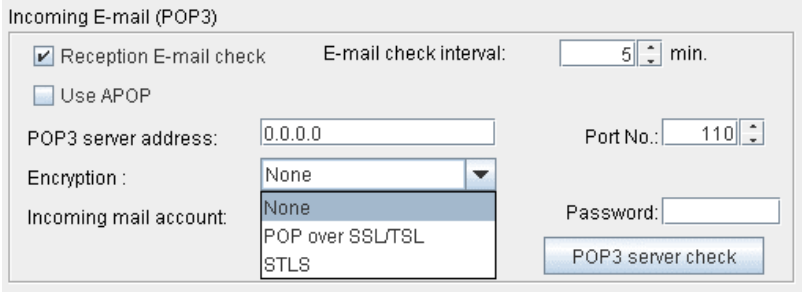
Item	Description
None	No authentication.
POP before SMTP	Authenticate POP. Account password uses setting value of "Incoming E-mail (POP3)".
SMTP Auth. (Automatic)	Authenticate SMTP by automatically selecting of UPS (LAN interface card). If the type of authentication which supported by SMTP server is unsure, select "SMTP Auth. (Automatic)".
SMTP Auth. (PLAIN)	Authenticate SMTP. (Authenticate name is PLAIN)
SMTP Auth. (LOGIN)	Authenticate SMTP. (Authenticate name is LOGIN)
SMTP Auth. (CRAM-MD5)	Authenticate SMTP. (Authenticate name is CRAM-MD5)

(※3) Authentication of sending mail (SMTP)



Set when select "SMTP Auth." by authentication.
Please select up to the using SMTP server.

(※4) Authentication of receiving mail (POP3).



In the case of "Reception E-mail check" is selected or select "POP before SMTP" for authentication of "Send E-mail (SMTP)" setting, set this section.
Select according to the using POP3 server.

If using the LAN interface card, the display screen may be different and it is depends on the version. (The above screen uses the latest version.)
For details, please refer to the “Users guide” of LAN interface card.

Information
If the e-mail check interval is set to "0," a special operation is performed. In such a case, POP3 account authentication takes place when e-mail is sent even though a check for incoming e-mail does not take place. This process is performed because some mail servers require POP3 authentication to take place prior to the sending of e-mail.

When sending an information request message to the UPS from the mailer of a mobile phone or computer.

Enter the send destination address and one of the following items for the subject, and then send the message.

- Enter the e-mail address of the UPS as the send destination address.
- Enter one of the following items as the subject.

(Enter single-byte characters. A distinction is made between uppercase and lowercase letters.)

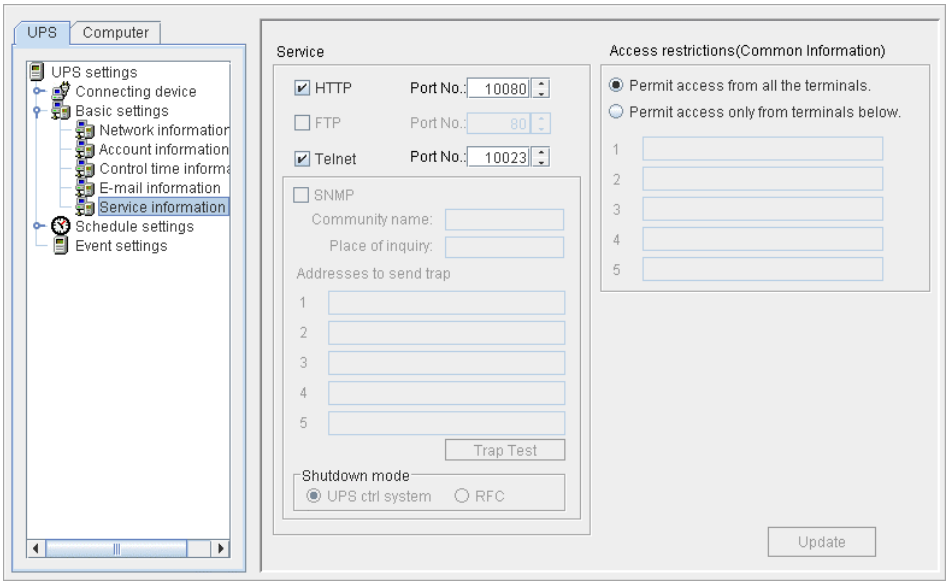
- **UPS Status Request** UPS status and measurement information
- **UPS Info Request** UPS information
- **Setting Request** Device setting information
- **Log Request** Event log information (last 10 items)
- **Log Request All** Event log information (all items)

Do not enter anything for the body text of the message.
For details on the content of reply messages, refer to "Appendix F List of Received Mail".

6.13 Using HTTP, FTP, Telnet, and SNMP

The UPS control system enables you to use HTTP, FTP, Telnet, and SNMP. For details on how to use SNMP, refer to Section 6.15 , "Using SNMP".

●In the case of server/client composition
Select [Service information] of [Basic settings] on the [UPS] tab.



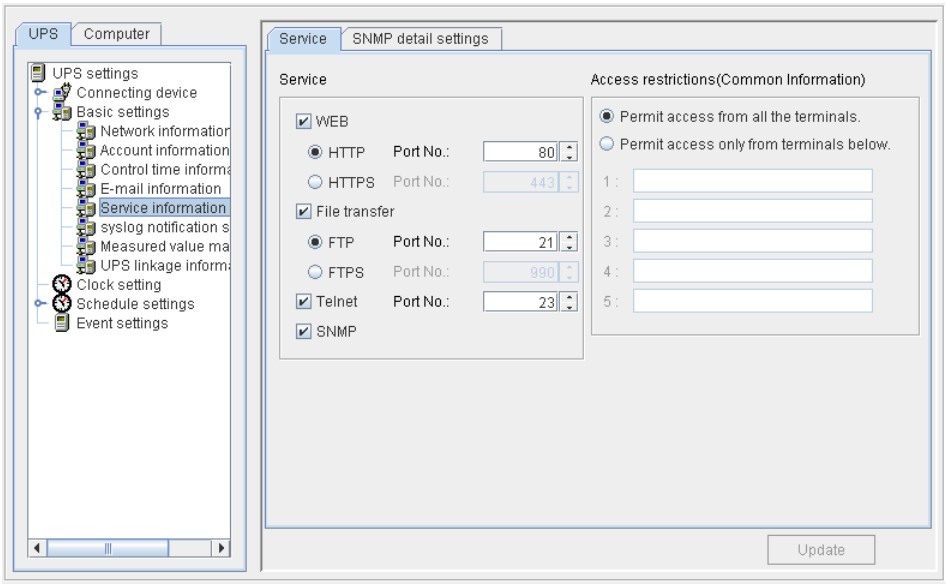
Setting	Description
HTTP	Set whether to enable access from the Web.
Port No. (HTTP)	Set the port number to use for HTTP.
Telnet	Set whether to enable access from Telnet.
Port No. (Telnet)	Set the port number to use for Telnet.
Access restrictions	Restrict external access to each service. If you set the network addresses of the terminals you want to permit access, you can permit access from those terminals. (Set up to 5 addresses.)

●In the case of LAN interface card composition

The following screen are enhanced security version of the LAN Interface card.(Support HTTPS,FTPS,SNMPv3)

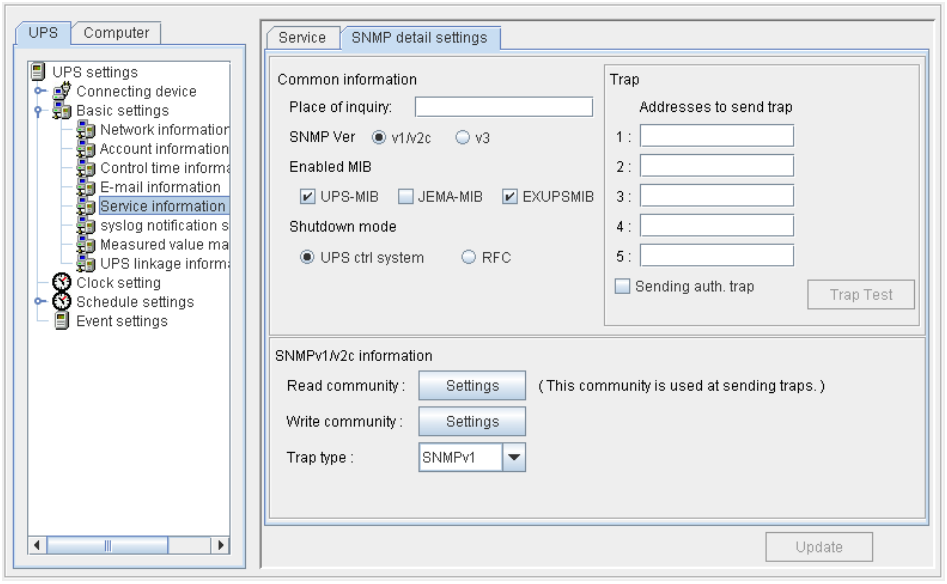
Select [UPS]－[Basic settings]－[Service information]

[Service]tab



設定項目	内容
Web	Turns Web access on and off.
HTTP Port No.	Modifies HTTP service port number.
HTTPS Port No.	Modifies HTTPS service port number.
File transfer	Turns upload/download of settings via FTP(FTPS) on and off.
FTP Port No.	Modifies FTP service port number.
FTPS Port No.	Modifies FTPS service port number.
Telnet	Turns Telnet access on and off.
Port No.(Telnet)	Modifies Telnet service port number.
SNMP	Turns SNMP operation on and off.
Access restrictions	Restricts access by external services. Enter the network address of terminals that will allow access to the network. (Enter up to five addresses.)

[SNMP detail settings]tab (Select SNMP Ver. v1/v2c)

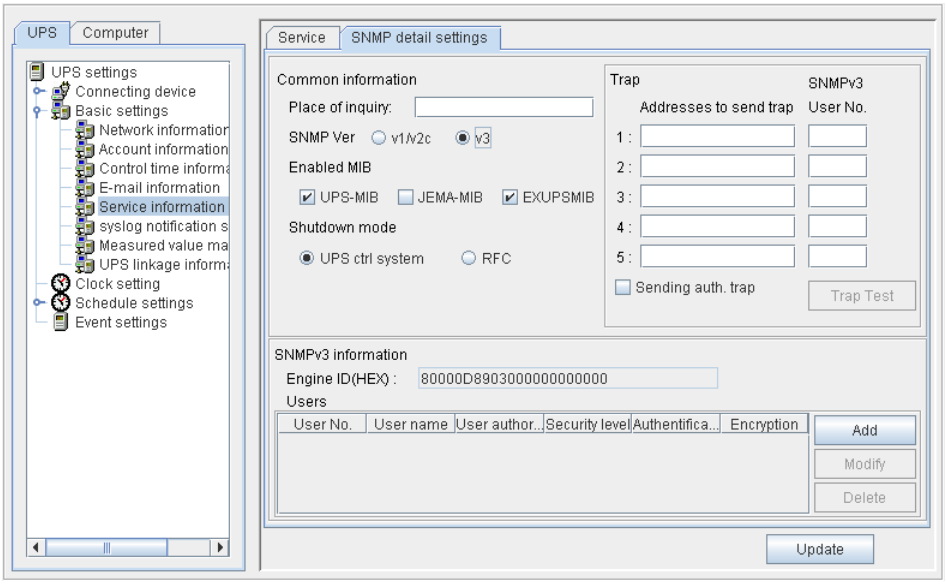


設定項目	内容
Place of inquiry	Enter place of inquiry for SNMP.
SNMP Ver.	Select a SNMP version.
Enable MIB	Select for use MIB. UPS-MIB(RFC1628)、JEMA-MIB、EXUPSMIB(private MIB)
Shutdown mode	The SNMP manager specifies the shutdown method output by UPS stop control output.
Addresses to send trap	Enter the network address for the destination when sending trap.
Sending auth. trap	Turns auth. Trap on and off.
Trap Test	The trap send test is performed.(Send the “Cold start” trap)
Read community	Enter SNMP community name.
Write community	Enter SNMP community name.
Trap type	Select a trap type from SNMPv1 or SNMPv2.

・Shutdown mode

Mode	Description
UPS ctrl system	When PCs and workstations are connected, computers are shutdown and ths UPS is turned off according to the [Shutdown delay time] and [UPS automatic stopping time] settings.
RFC	Turns off the UPS output regardless of whether devices are connected to it. This mode does not shutdown connectes computers.

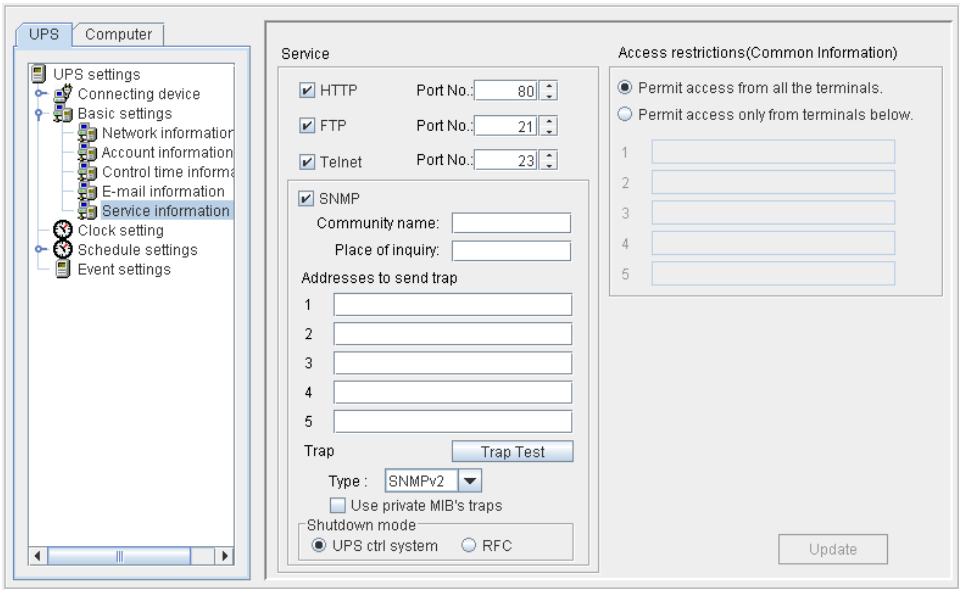
[SNMP detail settings]tab (Select SNMP Ver. v3)



設定項目	内容
Place of inquiry	Enter place of inquiry for SNMP.
SNMP Ver.	Select a SNMP version.
Enable MIB	Select for use MIB. UPS-MIB(RFC1628)、JEMA-MIB、EXUPSMIB(private MIB)
Shutdown mode	The SNMP manager specifies the shutdown method output by UPS stop control output.
Addresses to send trap	Enter the network address for the destination when sending trap.
SNMPv3 User No.	Enter the SNMPv3 user number..
Sending auth. trap	Turns auth. Trap on and off.
Trap Test	The trap send test is performed.(Send the “Cold start” trap)
Engine ID	Display the EngineID.
Users	Display the list of SNMPv3 user information.
Add	Add SNMPv3 user information.
Modify	Modify SNMPv3 user information.
Delete	Delete SNMPv3 user information.

The following screen is the version before performing the corresponding security.
(Selection of trap type, corresponding to the private MIB)

Select [UPS]－[Basic settings]－[Service information]



設定項目	内容
HTTP	Turns Web access on and off.
Port No.	Modifies HTTP service port number.
FTP	Turns FTP access on and off.
Port No.	Modifies FTP service port number.
Telnet	Turns Telnet access on and off.
Port No.	Modifies Telnet service port number.
SNMP	Turns SNMP operation on and off.
Community name	Enter SNMP community name.
Place of inquity	Enter place of inquiry for SNMP.
Addresses to send trap	Enter the network address for the destination when sending trap. (Enter up to five addresses.)
Trap Test	The trap send test is performed.(Send the “Cold start” trap)
Trap type	Select a trap type from SNMPv1 or SNMPv2.
Use private MIB’s trap	Sets enable/disable of SANYO private MIB trap.
Shutdown mode	The SNMP manager specifies the shutdown method output by UPS stop control output.
Access restrictions	Restricts access by external services. Enter the network address of terminals that will allow access to the network. (Enter up to five addresses.)

(Note.1) Depends on the version of LAN interface card, there is unavailable situation to set service disable.

(Note.2) Setting is unavailable for LAN interface card which does not support upload/download function of setting value by FTP.

(Note.3) Depends on the version of LAN interface card, there are Access restrictions for SNMP only.

Note
Set port numbers for HTTP, FTP, and Telnet that are not used or reserved for the operating system or other application.

• Shutdown mode

Mode	Description
UPS control system	When stopping the UPS from SNMP Manager, the connected computer is shutdown in accordance with the control settings and then the UPS is stopped. The default values are set.
RFC compatible	When stopping the UPS from SNMP Manager, the UPS is stopped after the delay time specified upon receiving the stop request has elapsed, regardless of the condition of the computer.

Precautions when using IT Monitor Manager

When using IT Monitor Manager, Select "SNMPv1" or "v1/v2c" from [Trap type].

6.14 About automatic start of connected computer in starting UPS

With UPS control system, you can automatically start a computer that has been stopped by turning on the UPS output. Generally, computer starts by power supply from UPS, but some computers with power control function does not start automatically with only a power supply to the outlet. For such computers, UPS control system will assist its automatic start by ring signal (Note) or Wake On LAN function. (It will be possible if the following requirements are satisfied.)

(Note) It is also called modem signal with some computers.

[Requirements on usage of automatic start operation]

Requirements (on UPS)

Type of UPS	Requirement on UPS	Remark
UPS with serial interface	Must be corresponding to ring signal emission(※1)	Some models do not correspond
UPS with LAN interface	Must be corresponding to Wake On LAN	Some models do not uncorrespond (※3)
	Must be corresponding to ring signal emission(※1)(※2)	

(※１) Corresponding UPS will conduct ring signal emission for certain. In order to restrict the automatic start of computer by ring signal, turn off the reception of ring signal in BIOS setting of the computer.

(※２) This is the case where computer is connected to serial port of LAN interface.

(※３) Some do not correspond to “Wake On LAN” according to the version of LAN interface.
Please contact our company for corresponding models.

Requirements (on computer)

UPS connected computer	Requirements on computer
Serial connection(※1)	Serial port must be corresponding to ring signal(※4)
Client connection(※2)	Motherboard and network interface card must be corresponding to Wake On LAN
Network connection(※3)	Motherboard and network interface card must be corresponding to Wake On LAN
Telnet connection (WS)(※4)	Motherboard and network interface card must be corresponding to Wake On LAN
Login connection (WS)(※3)(※6)	Serial port must be corresponding to ring signal(※5)
Contact connection (PC)(※3)(※6)	Serial port must be corresponding to ring signal(※5)

(※1) When using UPS with serial interface (when directly connected).

(※2) When using UPS with serial interface.

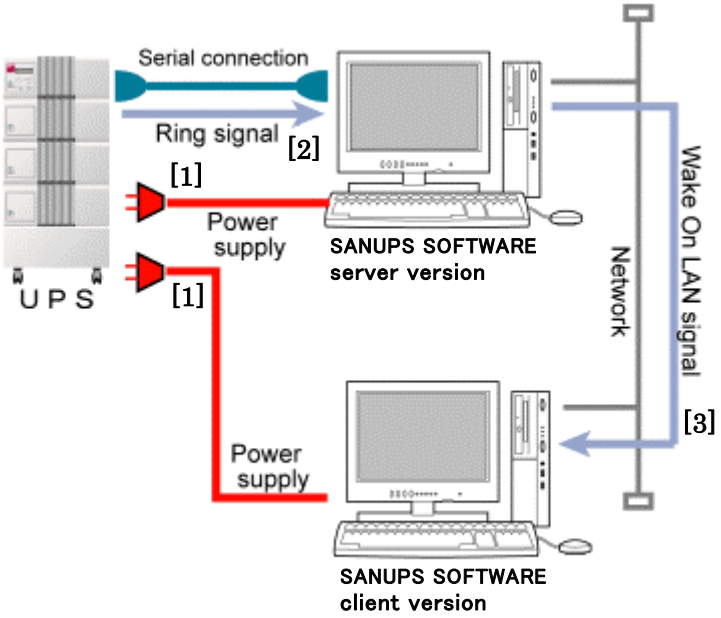
(※3) When using UPS with LAN interface.

(※4) When using UPS with LAN interface, or using **SANUPS SOFTWARE** server.

(※5) Corresponding UPS will conduct ring signal emission for certain. In order to restrict the automatic start of computer by ring signal, turn off the setting of ring signal while setting the motherboard of the computer.

(※6) When connected to serial port of LAN interface card.

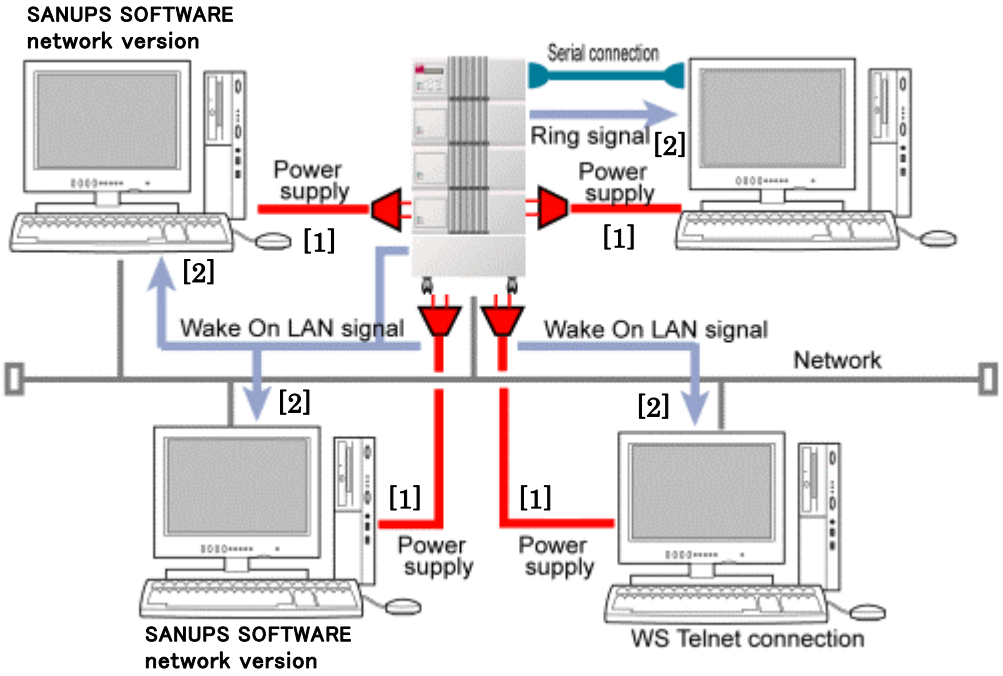
Automatic start of computer when using UPS with serial interface



[1]Turn on UPS output.
[2]Send ring signal to server connected computer. (Server connected computer starts.)
[3]Send Wake On LAN signal to client connected computer. (Client connected computer starts.)

Both computers on the left do not start by power supply to outlet.

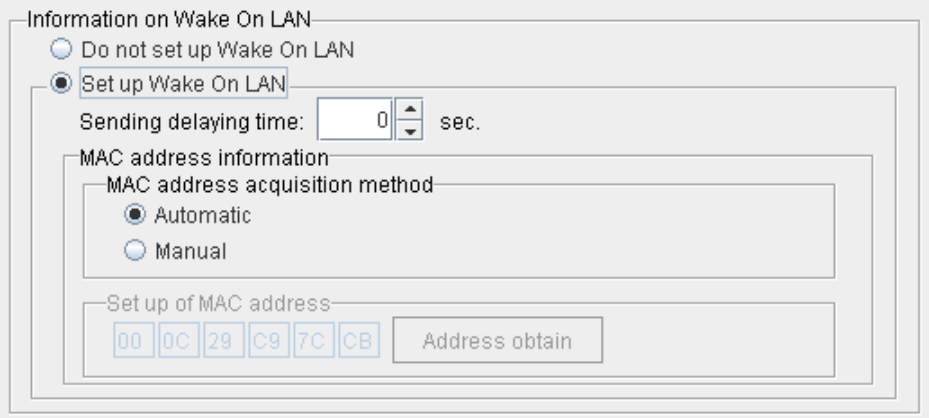
Automatic start of computer when using UPS with LAN interface



[1]Turn on UPS output.
[2]Send “modem signal” and “Wake On LAN signal” simultaneously to all the computers that are connected.

About Wake On LAN setting

When you are using UPS with serial interface and client connected or using UPS with LAN interface, you can set Wake On LAN from [UPS] tab – [Connecting device].



(Above is an excerpt of page on computer information selected from [UPS setting] tab –[Connecting device].)

Items on Wake On LAN setting page	Content
Not set Wake On LAN	Do not start computer by Wake On LAN.
Set Wake On LAN	Start computer by Wake On LAN.
Sending delaying time (sec.)	Sets the delay time of magic packet sending.
Method to acquire MAC address "automatic"	Automatically acquire MAC address.
Method to acquire MAC address "manual"	Manually acquire MAC address.
MAC address setting area (Note2)	Display acquired MAC address. Or edit MAC address.
MAC address acquisition button (Note3)	Tries to acquire MAC address by clicking the button.

(Note 1) There is a LAN interface card that does not correspond to the sending delay time.(If not supported, it will not be displayed.)

(Note 2) In case of controlling WS by Telnet connection, you cannot automatically acquire MAC address of that WS. (Because there is no UPS control software.) In such case, manually set MAC address of that WS.

(Note 3) Generally, MAC address will be automatically acquired on computer that has **SANUPS SOFTWARE** installed. However, if the computer does not start after Wake On LAN has already been set, check MAC address of network card and MAC address acquired by address acquisition.

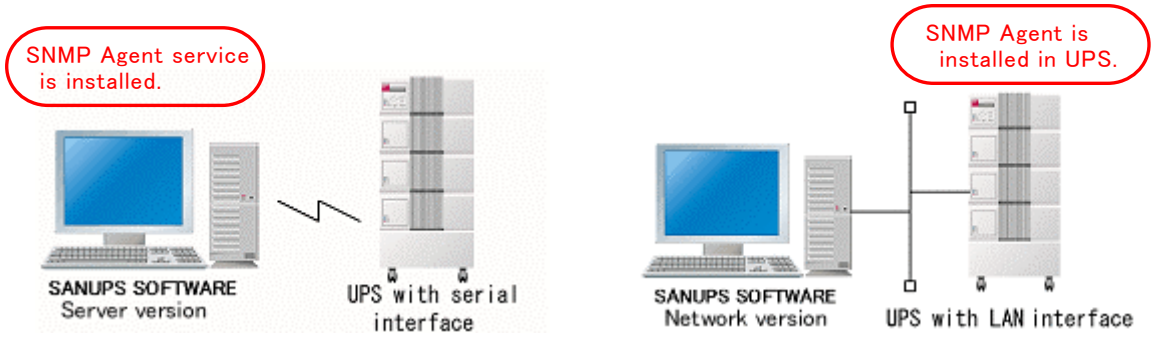
6.15 Using SNMP

6.15.1 About the SNMP Function

The UPS control system includes support for the SNMP agent function (UPS standard MIB RFC1628). (The SNMP agent function is incorporated into a LAN interface card.)

With the default settings for using a LAN interface card, all access from the SNMP manager is accepted. You can monitor conditions and control the UPS without changing the settings. The GUI tool can be used to specify the place to trap and change settings such as the community setting. In addition, you can set the devices for which to permit access so that access restrictions can be applied.

6.15.2 About Using the SNMP Agent Function



When Using a UPS with a Serial Interface

Use the SNMP service included with the operating system. The conditions of use are as follows.

- **SANUPS SOFTWARE** is running as the server version.
- The connection setting for the serial cable is set to [Serial communication]. (*1) (*2)
- The SNMP agent function is set up on the operating system. (*3) (*4)

(*1) There are restrictions on the functions that can be used when [Contact connection] is set.
(*2) Use is possible as is when you are using a combination of an SNMP card and UPS.
(*3) For details on setting up the SNMP agent function, refer to “Appendix B: Setting Up the SNMP Function on a Computer.”
(*4) For details on operating the SNMP agent function, refer to the user’s guide for the operating system.

When using a UPS with a LAN interface

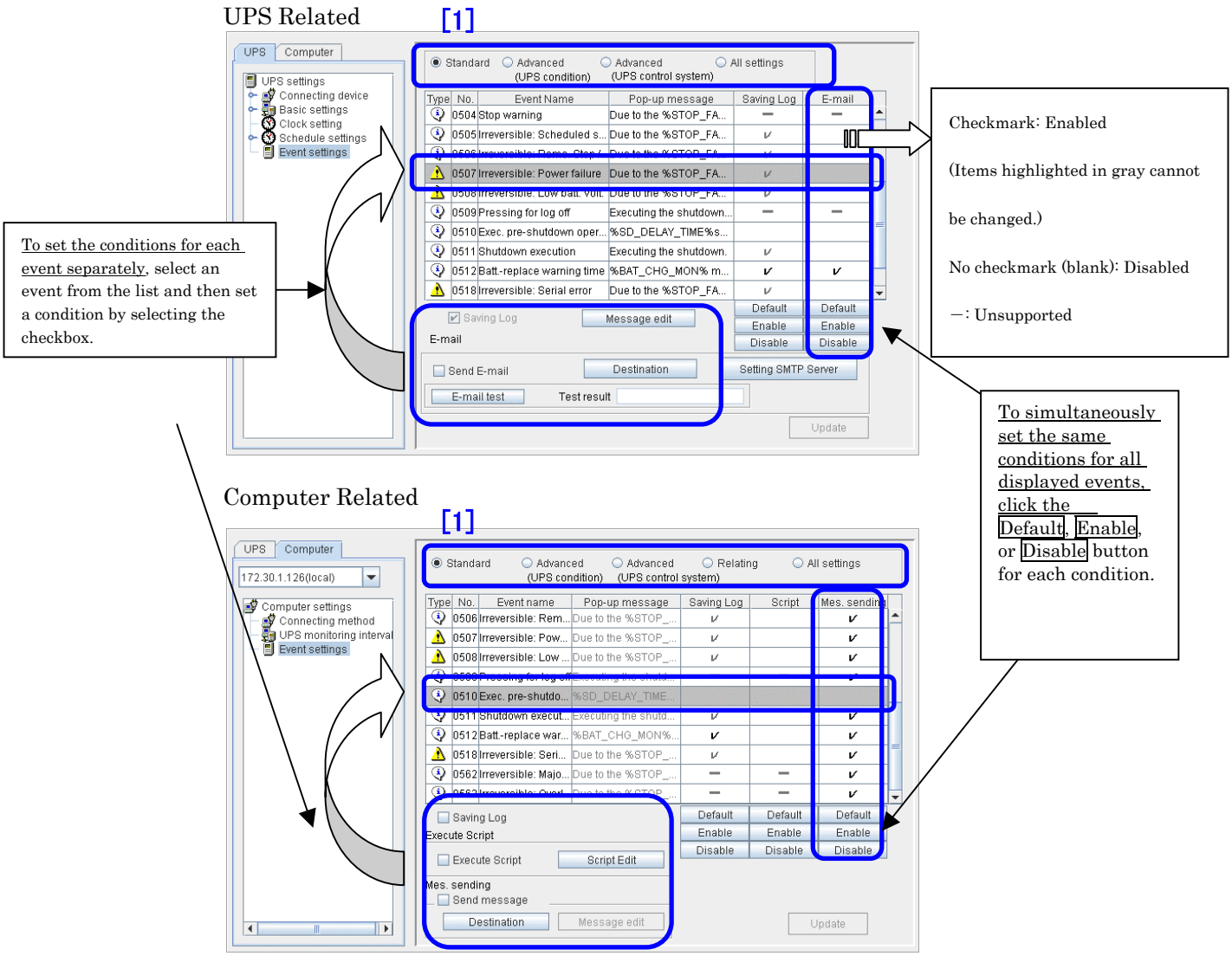
Use is possible as is because the SNMP agent function is incorporated into the LAN interface card. For details on setting SNMP, refer to Section 6.13 , "Using HTTP, FTP, Telnet, and SNMP".

6.16 About Event Settings

In the UPS control system, all phenomena such as a power failure/recovery, major breakdown/recovery, and execution of shutdown are registered as events. It is possible to display a message, send email, and execute a script when an event occurs.

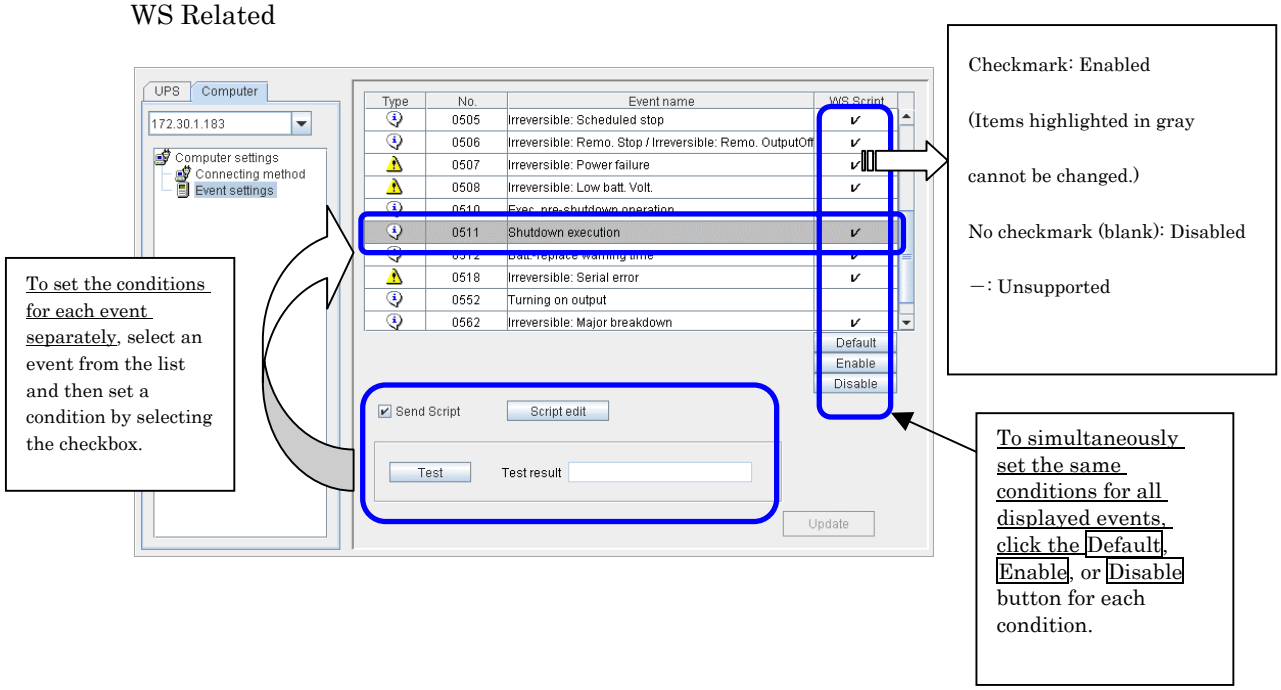
There are three types of event: UPS related events, computer related events, and WS related events (*1)

(*1) "WS" here refers to a WS registered as a WS with a Telnet connection or a WS with a LAN interface card log-in connection. It does not refer to the **UNIX** or **Linux** version of **SANUPS SOFTWARE**.



About Event Settings

WS Related



Function by type	Setting item	Description
UPS Related	E-mail	Allows you to set the send destination address for each event separately.
	Saving Log	Allows you to set the logs the UPS saves.
	Message edit	Allows you to set the message to send to (display on) the computer (UPS related item)
Computer Related	Saving Log	Allows you to store the logs to maintain on the computer.
	Execute Script	Allows you to set the script to execute when each event occurs.
	Send message	Allows you to set the destination to send a message when an event occurs
	Message edit	Allows you to set the message to send to (display on) another computer (computer related item)
WS Related	Send Script	Allows you to set the process to log in to the WS, and the content of the script to execute.

In addition, **events** are differentiated depending on the control level and only the events for the selected level are displayed in the list ([1] in the screenshot). It is usually enough to just set the events of [Standard].

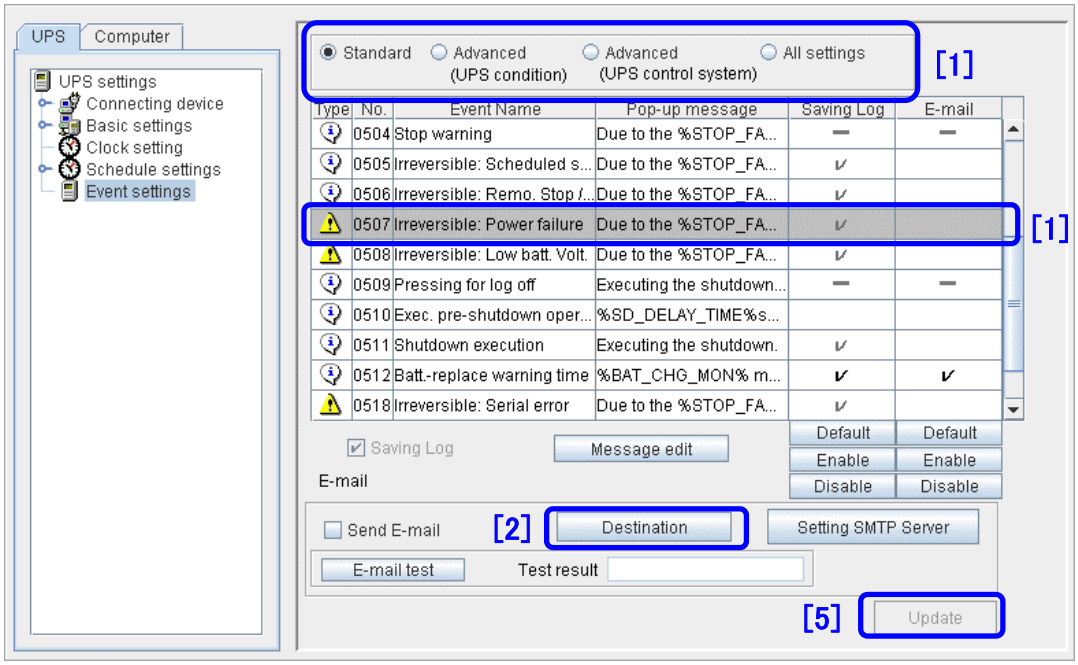
Control level	Description
Standard	Events used by ordinary administrators during normal operation
Advanced (UPS condition)	Events used for tasks such as maintenance of the UPS.
Advanced (UPS control system)	Events used for analyzing security problems and abnormalities of the UPS control system.
Relating	Events that occur on the computer
All settings	All events

6.17 Sending E-mail Notifications to Specified Addresses when Trouble Occurs

Select [Event settings] on the [UPS] tab.

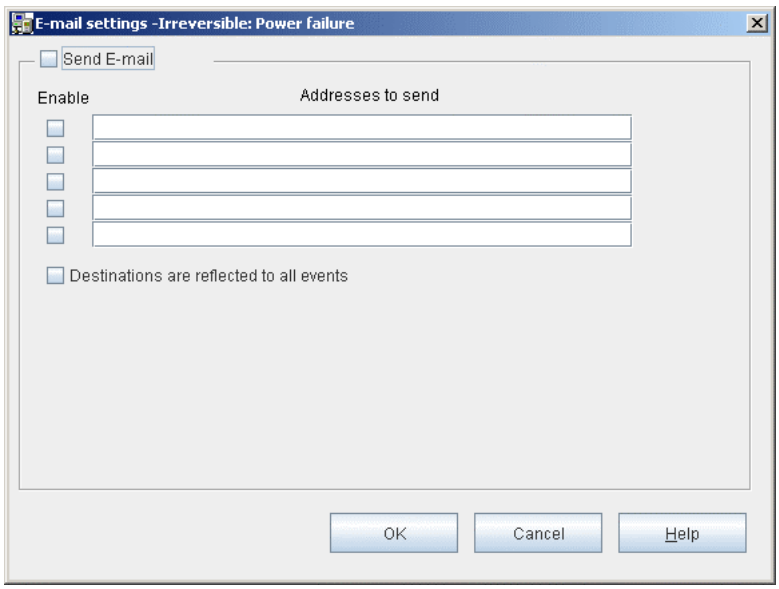
The following explanation uses the example of setting the sending of e-mail when a power failure occurs to explain the setting procedure.

[1] Select the event to set. (In the screenshot below, [Irreversible: Power failure] is selected.) The selected event is highlighted.



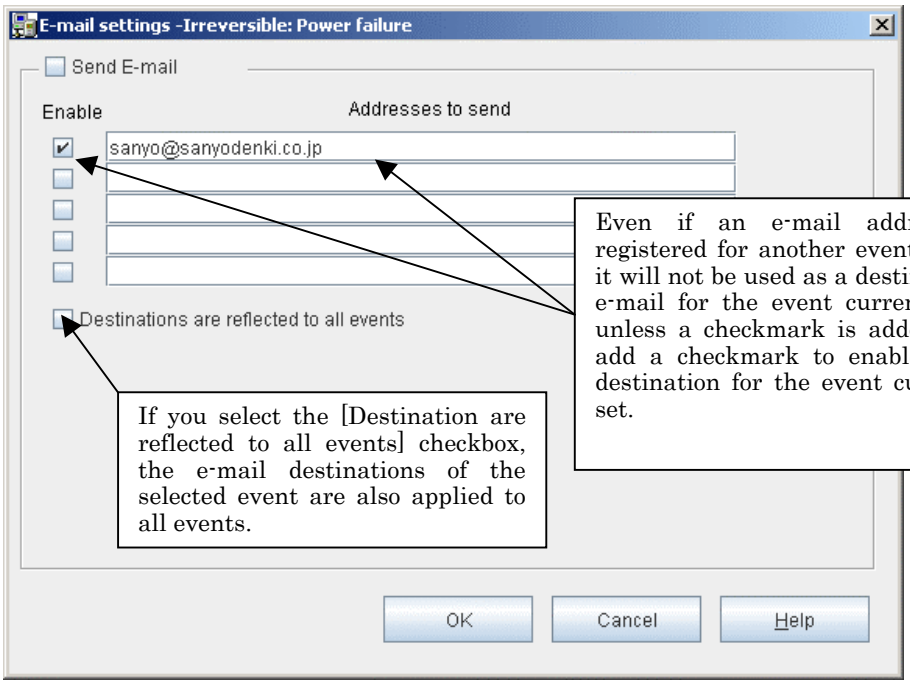
[2] Set the destinations to send e-mail.

Select an event and then click the Destination button to display the settings screen. (The [E-mail settings – Irreversible: Power failure] screen appears.)



[3] Set the e-mail destinations.

This screen displays all of the e-mail addresses specified as the destinations for events. If the e-mail addresses do not include the destination to which you want to send e-mail for this event, select a checkbox and then enter the e-mail address.



[4] Click OK, confirm the changes to the e-mail destinations in the confirmation screen that appears and then click Yes to reflect the setting values.

[5] The event settings screen reappears. Click Update to update the settings.

Restriction

A total of up to five e-mail addresses can be registered for all events.

Information

For details on setting the mail server, refer to Section 6.12 , "Setting Basic Information for E-mail."

Information

If you select any event and then press the E-mail test button, a test e-mail message is sent to the destinations set for the specified event. The e-mail test function does not generate an actual event. It just enables you to confirm whether the mail server and destinations are set correctly.

If there is still information to be updated, click the Update button again and then wait until updating of the information is complete before sending a test e-mail message.

If a destination is set, you can send a test e-mail message even if the [Send E-mail] checkbox is not selected.

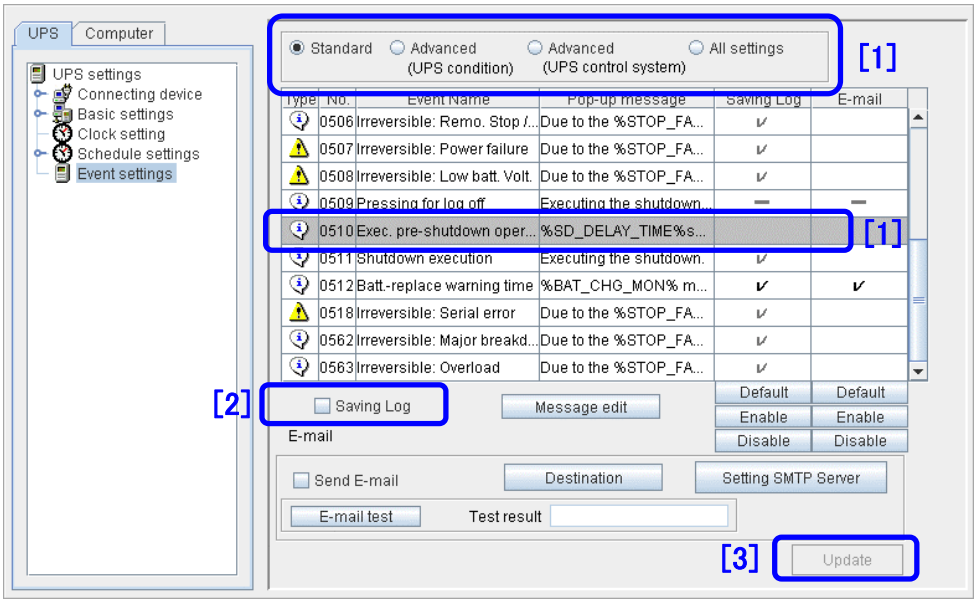
The result of the e-mail test is displayed in [Test result], but make sure that you can actually receive the e-mail message.

6.18 Setting the Event Logs to Save

(A) Setting the event logs to save on the UPS

Select [Event settings] on the [UPS] tab.

The following explanation uses the example of setting the event logs to save during execution of the pre-shutdown operation to explain the setting procedure.



[1] Select an event to set. (In the screenshot above, [Exec. pre-shutdown operation] is selected.)

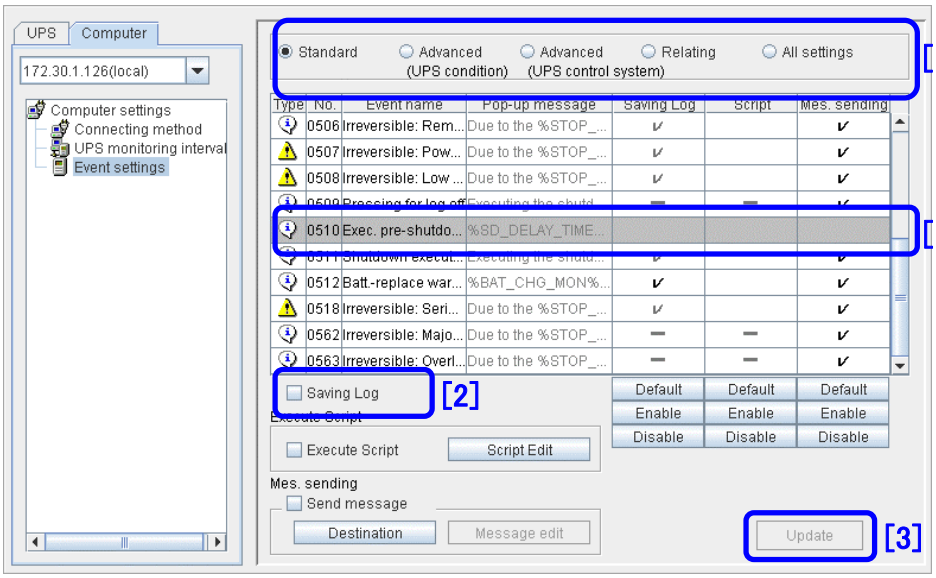
[2] Select the [Saving Log] checkbox.

[3] Click the Update button to reflect the setting values.

(B) Setting the event logs to save on the computer

Select [Event settings] on the [Computer] tab.

The following explanation uses the example of setting the event logs to save during execution of the pre-shutdown operation to explain the setting procedure.



[1] Select an event to set. (In the screenshot above, [Exec. pre-shutdown operation] is selected.)

[2] Select the [Saving Log] checkbox.

[3] Click the Update button to reflect the setting values.

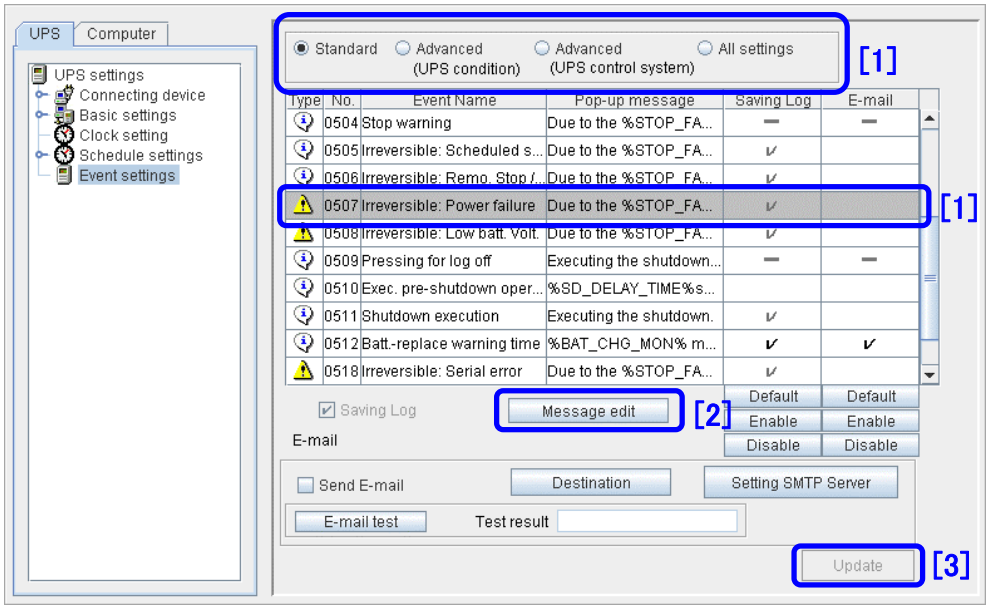
6.19 Changing the Content of the Messages Displayed when Events Occur

A pop-up message is displayed when an event occurs. You can set (change) the content of such messages.

(A) Setting event messages related to UPS operation

Select [Event settings] on the [UPS] tab.

The following explanation uses the example of changing the content of the message displayed when recovery from a power failure is judged to be impossible to explain the setting procedure.



[1] Select an event to set. (In the screenshot above, [Irreversible: Power failure] is selected.) The selected event is highlighted.

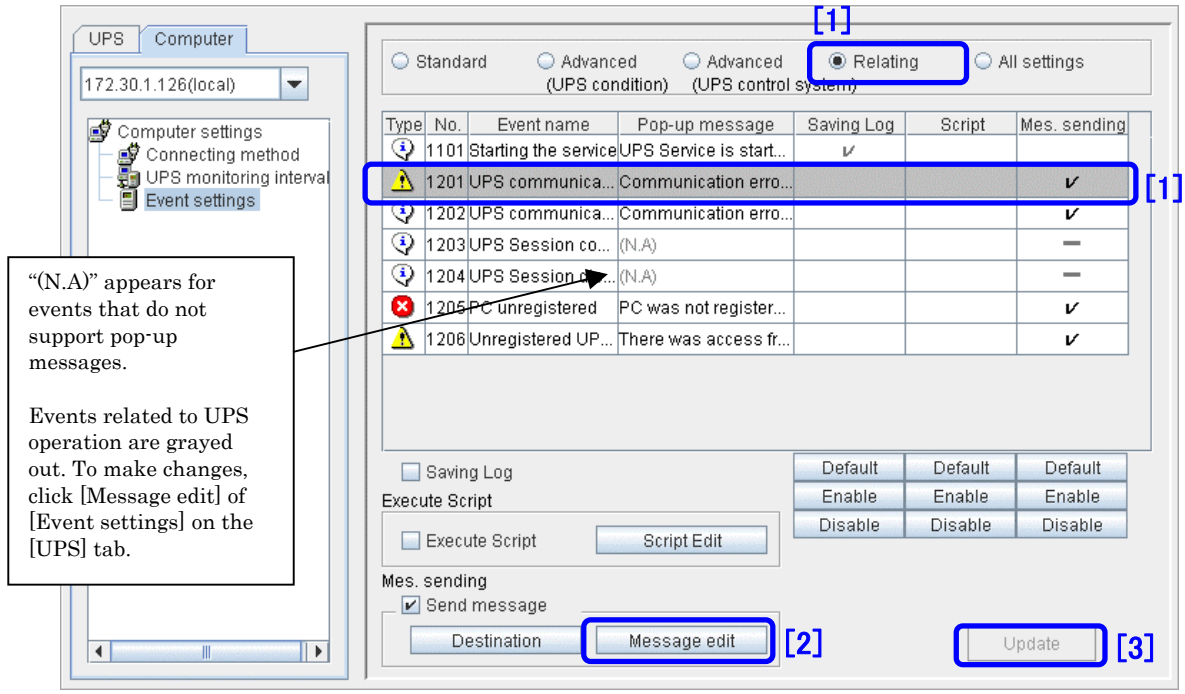
[2] Click [Message edit]. The message content setting screen appears.

[3] Set the message and then click the Update button to reflect the changes to the content.

(B) Setting event messages related to computer operation

Select [Event settings] on the [Computer] tab.

The following explanation uses the example of changing the content of the message displayed when UPS communication trouble occurs to explain the setting procedure.



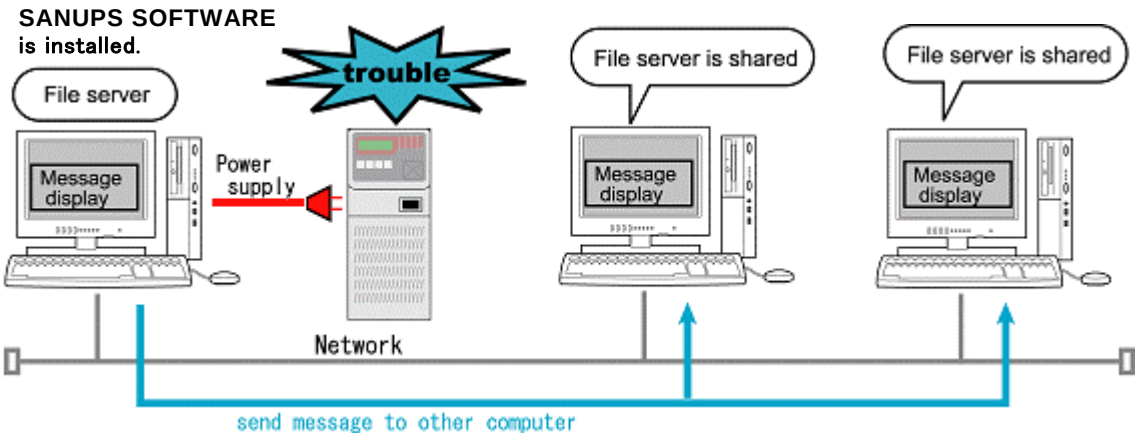
[1] Select an event to set. (In the screenshot above, [UPS communication error] is selected.) The selected event is highlighted.

[2] Click [Message edit]. The message content setting screen appears.

[3] Set the message and then click the Update button to reflect the changes to the content.

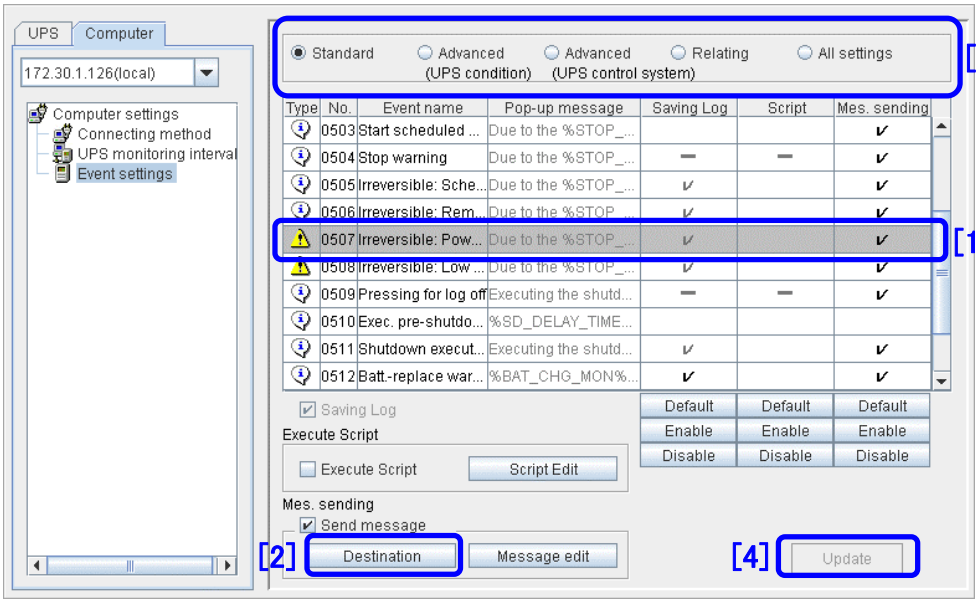
6.20 Specifying the Display Destination for Event Messages

If, for example, the file server is shared by other computers, you can notify the users of the other computers of the occurrence of trouble. (A message can even be sent to a computer that does not have **SANUPS SOFTWARE** installed.)



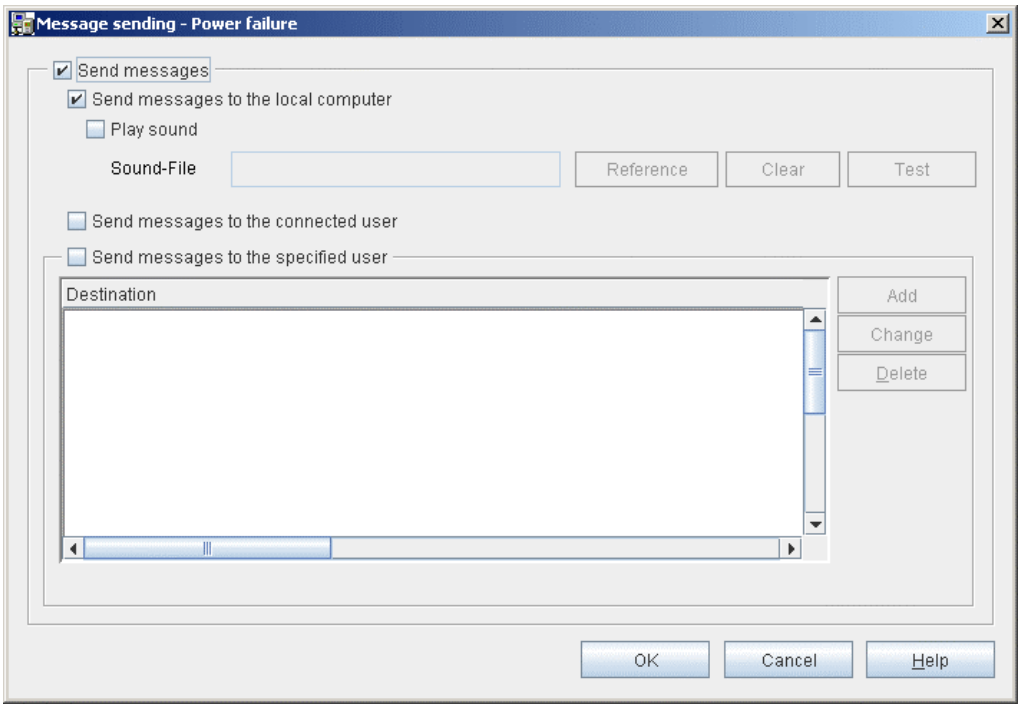
About the Setting Procedure

Select [Event settings] on the [Computer] tab.



[1] Select an event for which to send a message. (In the screenshot above, [Irreversible: Power failure] is selected.) The selected event is highlighted.

[2] Click the Destination button to display the following message destination setting screen.



Message destination	Description
Send messages to the local computer	The message is displayed on the local computer. You can specify a sound file in order to play a sound when the message file is displayed. (This is only supported for **Windows**. The same sound is used for all messages.)
Send messages to the connected user	The message is sent to another computer connected for file sharing, etc.
Send messages to the specified user	The message is sent to a specified computer other than the above. In the [Destination] area, specify the computer to which to send the message.

[3] After you have finished configuring the message destination settings, click the OK button.
[4] Click the Update button to reflect the changes to the content.

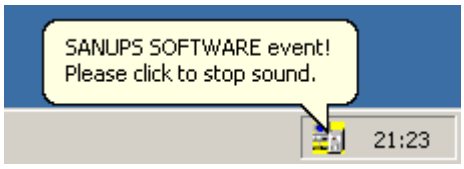
Restrictions

- In an environment where **Linux/UNIX** machines and **Windows** machines exist together, it is not possible to send messages to different platforms. For example, messages cannot be sent from a **Windows** machine to a **Linux/UNIX** machine, and visa versa.

* To send messages between **Linux** and **UNIX** machines, use **rwall**.
For details on **rwall**, refer to "Appendix I: Other Q & A."

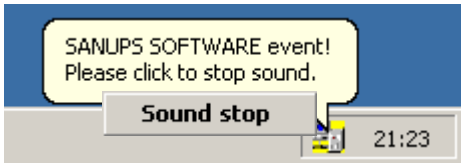
Stopping Sound Playback

When a sound file has been specified in order to play a sound when a message is displayed, the sound plays when an event occurs and the following icon appears in the task tray in **Windows**.



* **[SANUPS SOFTWARE event! Please click to stop sound]** appears after the event occurs and the icon flashes.

Align the mouse pointer over the icon and then right-click or left-click the icon to display the following **[Sound stop]** menu item.



If you align the mouse pointer over the **[Sound stop]** menu item and then right-click or left-click the menu item, the icon disappears and the sound stops playing.

<Note>
Depending on the using OS, there are restrictions on this function.
Read “Appendix J　About constraint by the using OS”, confirm whether there are any corresponding items, then use it.

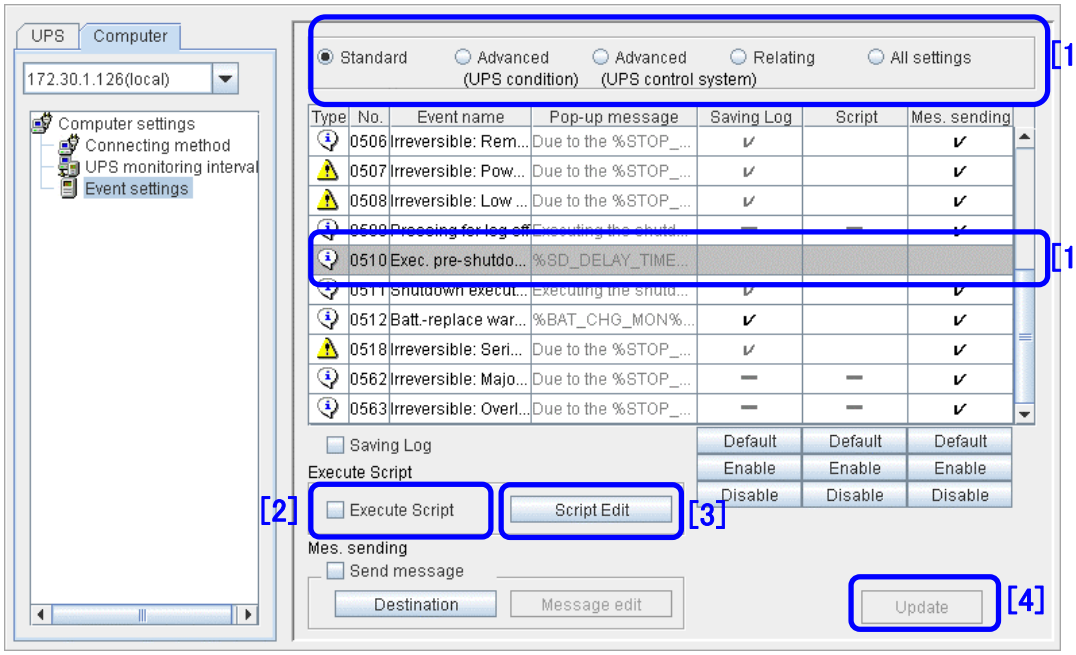
6.21 Performing a Specific Process when an Event Occurs

On a computer on which **SANUPS SOFTWARE** has been set up, setting the process you want to be performed when an event occurs on the [Execute Script] screen enables the process to be executed automatically. (The process only applies to the computer on which it is set.)

For example, if you want to end running applications prior to shutdown, set the application end process for the [Exec. pre-shutdown operation] event to enable the set process to be executed automatically prior to shutdown.

> **Information**
> In the case of the **Windows** version, any file currently being edited in a **Microsoft Office** application can be saved prior to shutdown. For details, refer to "Appendix H About Shutting Down Applications".

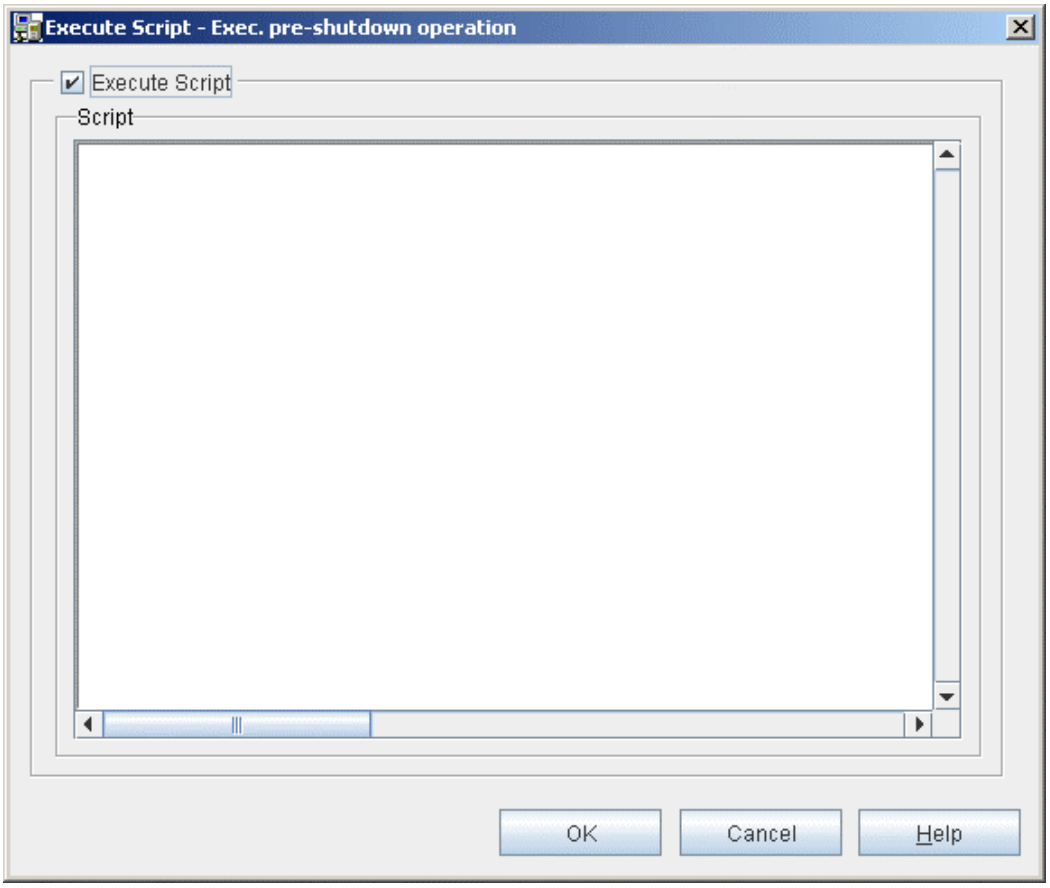
The following explanation uses the example of setting a process to be performed prior to shutdown to explain the setting procedure.



[1] Select an event to set. (In the screenshot above, [Exec. pre-shutdown operation] is selected.) The selected event is highlighted.

[2] Select the [Execute Script] checkbox.

[3] Click the Script Edit button to display the following execute script settings screen.



To set the process to perform (for example, ending of a database or applications) when an event occurs, click the OK button.

[4] After you have finished configuring the script settings, click the Update button to reflect the changes to the content.

6.22 Shutting Down a WS

A WS can be shut down without using **SANUPS SOFTWARE**.

Shutdown method (connection method)	Form of registration on UPS control system
Use the Telnet protocol to log in to the WS and execute a shutdown (command)	Registered as “WS (Telnet connection)"
Use a terminal connection to connect the serial port of the LAN interface card and the serial port of the WS, log in to the WS, and execute a shutdown (command)	Registered as “WS (LAN interface card log-in connection)”

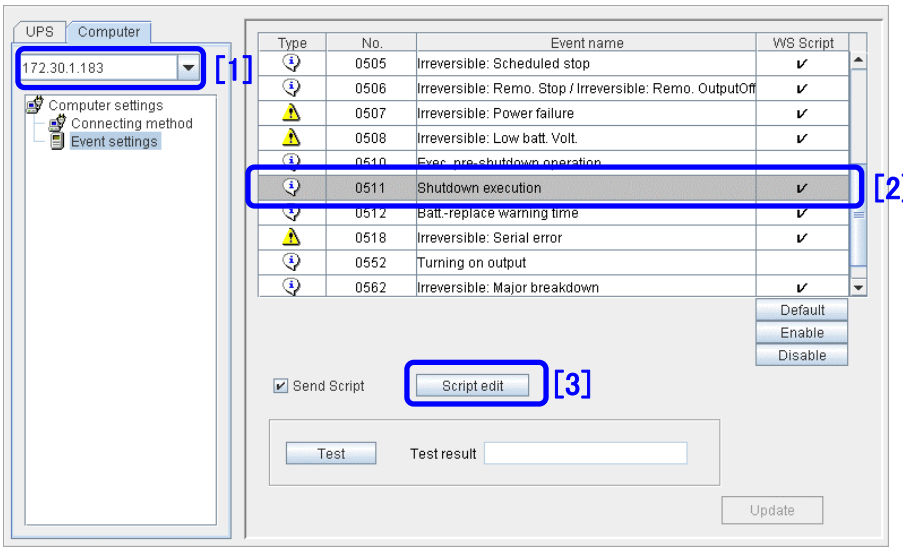
The connection methods used above differ, but the process (operation) performed by the UPS control system is exactly the same.

* This page describes settings for the shutdown operation, but as described in Section 6.21 , "Performing a Specific Process when an Event Occurs". you can set the command to execute for each event.

(A) Explanation of settings

Conditions of Use
In the case of a Telnet connection, the WS must be able to accept a “Telnet log-in” from a remote device. In the case of a “log-in connection,” the serial port of the WS must be able to accept a console log-in from an external device.

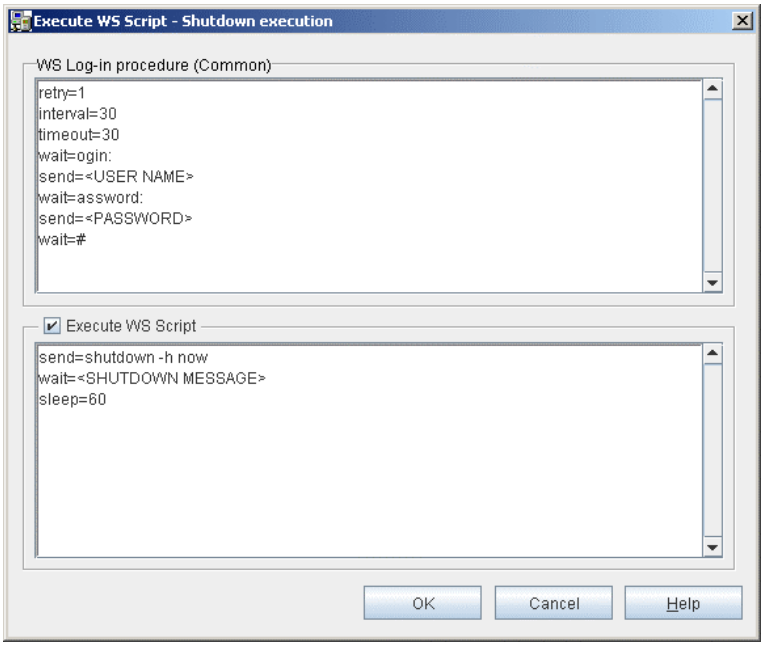
(1) Select [Event settings] on the [Computer] tab.



[1] Select a WS (Telnet connection) or WS (LAN interface card log-in connection) device, and select [Event settings] .

[2] Select the event to set. (In the screenshot above, the [Shutdown execution] event is selected.)

[3] Click the Script edit button to display the following WS script settings screen.



(B) About setting a WS script

- **WS log-in procedure**

  Enter the WS log-in process for when an event script is executed. (Common to all events)

> **Information**
> Since the WS log-in procedure is a common procedure, it is not possible to register multiple log-in procedures on one WS.
> If there is an event that you want to execute with another user account, include an instruction to change the user account in the WS script for that event.

Line	Log-in script		Description
1	retry=1	←	Specify the number of retries for when execution of the script fails.
2	interval=30	←	Specify the interval (in seconds) for starting retries.
3	timeout=30	←	Maximum number of seconds to wait for reception of specified character data for “wait=” part.
4	wait=ogin:	←	Wait for log-in input prompt.
5	send=<USER NAME>	←	Send log-in name.
6	wait=assword:	←	Wait for password input prompt.
7	send=<PASSWORD>	←	Send password.
8	wait=#	←	Wait for log-in complete prompt from the WS. (Wait for display of prompt.)

In lines 1 to 3, the log-in script operation is set.
In lines 4 to 5, the log-in name is set.
In lines 6 to 7, the password is entered.
In line 8, the script waits for the log-in to complete (in order to display the # prompt if the log-in is a success).

List of Commands to Use for the WS Log-in Procedure

Command name	Description	Example of use
send	Set the character string to be sent to the WS.	send=shutdown
wait	Set the character string (prompt) to be received by the LAN interface card or the **SANUPS SOFTWARE** server.	wait=login
sleep	Set the time to stand by without performing any process. The unit is seconds (s).	sleep=90
timeout	Set the time to wait for a process that has been executed to end. The unit is seconds (s). The default value is 30 seconds.	timeout=60
retry	Set the number of retries when a script fails. The unit is times. (The valid range is 0 to 10 times.) The default value is 1 time.	retry=2
interval	Set the interval for retries when a script fails. The unit is seconds. (The valid range is 1 to 60 times.) The default value is 30 seconds.	interval=10
poet	Specify the Telnet port number on the WS side. The valid range is 0 to 65,535. If this is omitted, port 23 is used.	Ex: port=10023
cr_only	Set <CR> for the line break code. The setting value is “yes” or “no.” If “yes" is set, the line break code for data sent after that is <CR>. If this is omitted, operation is performed as if "no" was set. (The line break codes are <CR> and <CF>.)	cr_only=yes cr_only=no
binsend	Set the 8 bit code to be sent to the WS side. Valid range Hexadecimal display: x00 to xff Octal display: 000 to 377	Hexadecimal display binsend=x07 Octal display binsend=004

* The existence of spaces before and after "=" will have no effect on processing.

Set a script within 510 single-byte characters (255 double-byte characters).

- **WS Script**

Enter the script process to be performed by the WS for each event.

> The term “script” mentioned here differs from the shell scripts used in UNIX, etc. It is used here to refer to a description of a series of operations to, for example, send a command to a computer.

Ex: send=shutdown -h now ← Send the shutdown command
sleep=60 ← Wait for 60 seconds.
(Waiting for log-out to be performed.)

List of Commands to Use for WS Scripts

Command name	Description	Example of use
send	Set the character string to be sent to the WS.	send=shutdown
wait	Set the character string (prompt) to be received by the LAN interface card or the **SANUPS SOFTWARE** server.	wait=login
sleep	Set the time to stand by without performing any process. The unit is seconds (s).	sleep=90
timeout	Set the time to wait for a process that has been executed to end. The unit is seconds (s). The default value is 30 seconds.	timeout=60
retry	Set the number of retries when a script fails. The unit is times. (The valid range is 0 to 10 times.) The default value is 1 time.	retry=2
interval	Set the interval for retries when a script fails. The unit is seconds. (The valid range is 1 to 60 times.) The default value is 30 seconds.	interval=10
cr_only	Set <CR> for the line break code. The setting value is “yes” or “no.” If “yes" is set, the line break code for data sent after that is <CR>. If this is omitted, operation is performed as if "no" was set. (The line break codes are <CR> and <CF>.)	cr_only=yes cr_only=no
binsend	Set the 8 bit code to be sent to the WS side. Valid range Hexadecimal display: x00 to xff Octal display: 000 to 377	Hexadecimal display binsend=x07 Octal display binsend=004
delay (Note)	Delay the execution of the script by a specified amount of time. If there is a “delay” description within an event script, the log-in script is executed after the specified time has elapsed, and then the script is executed. The unit is seconds (s).	delay=60

* The existence of spaces before and after "=" will have no effect on processing.

Set a script within 598 single-byte characters (299 double-byte characters).

Note: When you are using a UPS with a LAN interface, you can specify a type that allows up to 50 devices to be registered. For details, refer to the user's guide for the LAN interface card.

Macro character strings that can be used in scripts

You can use macros in the character strings to be sent. If the macro character strings in the following list are specified, they will be replaced by the corresponding character strings.

Macro character string	Definition
%STOP_TIME_M%	Remaining time until recovery is impossible (minutes digit)
%STOP_TIME_S%	Remaining time until recovery is impossible (seconds digit)
%SD_DELAY_TIME%	Shutdown delay time set on the UPS (seconds)
%BAT_CHG_MON%	Remaining months until battery replacement

About the Descriptions of the Log-in Script

Depending on the environment used, you may not be able to directly log in as a user with super user (root) privileges.

In such a case, use the "su" command to change to the root user to execute commands. The following is an example of a log-in script description for when the "su" command is used.

Log-in example for ordinary user (user name: guest, password: guest) or root (password: root)

Line	Log-in Script	Description
1	retry=1	Set the operation of the log-in script.
2	interval=30	
3	timeout=30	
4	wait=ogin:	Ordinary user: Log in as guest
5	send=guest	Here, enter guest for the log-in name.
6	wait=assword:	Ordinary user: Enter the password for guest.
7	send=guest	Password: guest.
8	wait=$	Wait for $ prompt display after log-in.
9	send=su	Send the "su" command and then execute the command."
10	wait=assword:	Enter the password for root.
11	send=root	Password: root.
12	wait=#	Wait for $ prompt display after log-in as root.

Information

If you select any event and then press the Test button, the WS script set for the specified event is tested. The test does not generate an actual event. It just enables you to confirm whether the WS script is set correctly.

If there is still information to be updated, click the Update button again and then wait until updating of the information is complete before beginning the test.

If a WS script is set, you can perform the test even if the [Send Script] checkbox is not selected.

The result of the test is displayed in [Test result], but make sure that the script is actually executed correctly on the specified WS. Furthermore, if the script fails to send, check the details in the event log in [Failed to send Script] of [Event-Log (UPS)viewer]. For details, refer to the following description.

Details: E=XXXX, X=YZ

E=XXXX: Indicates the event number
X=YZ X: Script type, Y: Occurrence line, Z: Cause

Script Type
L: Log-in procedure
S: WS script

Cause
T: Timeout occurred
F: Format error (wrong script description format)

6.23 Using a UPS with a LAN Interface or Network Power Manager to Shutdown a PC

If you use a dedicated cable to connect a UPS with a LAN interface card or the serial port of Network Power Manager to a PC or WS, it is possible to shutdown the PC or WS by sending a contact signal. In such a case, use **SANUPS SOFTWARE** or the UPS service (*1) of the operating system to shutdown the PC or WS.

(*1) This is limited to **Windows**.

The following explanation describes the setting procedure.

(A) Settings on the UPS with LAN interface or Network Power Manager side

Register the PC/WS as a **PC (LAN interface card contact connection)/PC (contact connection)** device from a tool such as a Web tool or terminator tool. (For details on registering devices, refer the user's guide for the LAN interface or Network Power Manager.)

(B) Settings on the PC/WS side

[1] Settings when using **SANUPS SOFTWARE**

Register the PC/WS as a standalone PC (contact connection) device from the GUI tool.

Information

When you want to use **SANUPS SOFTWARE** to perform the shutdown, configure settings such as the following in the UPS settings tool.

- Serial cable connection settings

  Contact connection

Selection of UPS model:	Other
Power failure signal:	Negative (*1)
Low battery signal:	Positive (*21
Remote UPS shutdown:	(Disable)

  (*1) If the settings have been changed on the LAN interface card or Network Power Manager side, configure the settings to match those settings.

- Control time information settings

[After the confirmation time passes, shutdown Exec.]:	Unselect outlet 1
[Shutdown delaying]:	0: sec.

[2] Settings when using the UPS service of the operating system

Refer to the user's guide for the LAN interface card or Network Power Manager when you configure the settings.

6.24 About scheduled operation

You can start or stop a computer by setting a schedule, such as:

●Start or stop the computer everyday at specified time.

●Start or stop the computer on a specified day at specified time.

There are following two types in schedule setting for flexible scheduled operation:

- **Setting weekly schedule**
- **Setting specified day's schedule**

(A) Setting weekly schedule
When setting the weekly schedule, consider Sunday to Saturday as a common schedule, and set the starting time and stopping time for each day of the week. This set value will be the base and it will operate everyday according to the decided (set) schedule.

(B) Setting specified day's schedule
When setting the specified day's schedule, you can set starting or stopping schedule of a specified day and change the weekly schedule of the specified day.

When the weekly schedule and specified day's schedule is set on a same day, specified day's schedule will be carried out with priority.

About stop scheduled operation

When carrying out scheduled stop, it will turn off the output of UPS after confirming the stop (shutdown) of computer.

About start scheduled operation

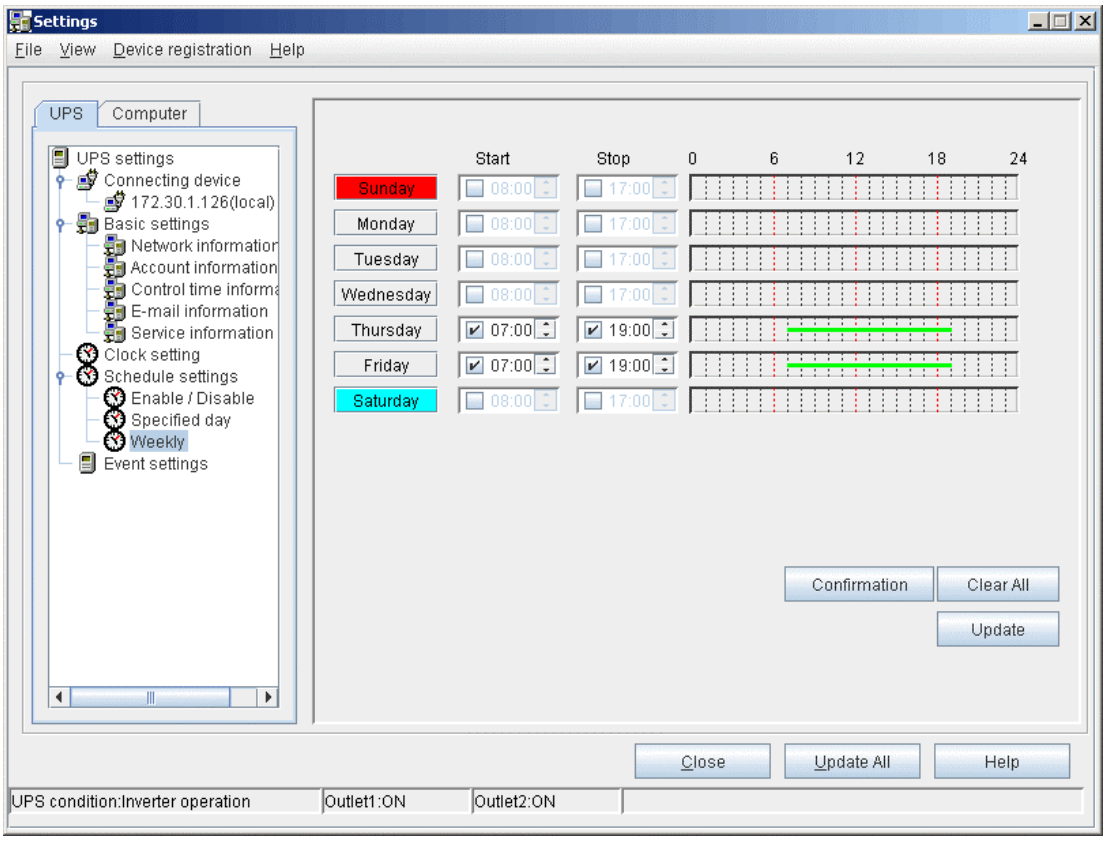
After scheduled start time has elapsed, output of UPS will be turned on (power supply to computer is started) and the computer will start.
However, some computers will not turn on its main power by just turning on the outlet power.
If your computer is "Ring signal corresponding" or "Wake On LAN corresponding," UPS control system will support turning on the main power of the computer. (Please refer to Section 6.5 , "Changing the Settings of Devices Connected to the UPS" for setting of "Wake On LAN corresponding.")

Type of UPS connection	Requirement of computer
UPS with serial interface	
Server connection	Corresponding to ring signal
Client connection	Corresponding to Wake On LAN
UPS with LAN interface	
Network connected PC/WS, Telnet connected WS	Corresponding to Wake On LAN
Contact connected PC, Login connected WS	Corresponding to ring signal

6.25 Setting weekly schedule

It will set weekly operation schedule.
The schedule will operate according to this setting.

Select [UPS] tab – [Schedule settings] – [Weekly], and the following page will be displayed.



(In above illustration, weekly schedule for Thursday and Friday is being set.)

By putting check in the check box for starting / stopping time, you can set the time. Place with a check indicates that it will be controlled as the setting.

The above illustration shows that weekly schedule for start and stop has been set for Thursday and Friday from 7:00 to 19:00. Thus it will operate as the schedule every week at the specified time.

> **<Information>**
> When specified day's schedule is set, **specified day's schedule will be executed with priority.**

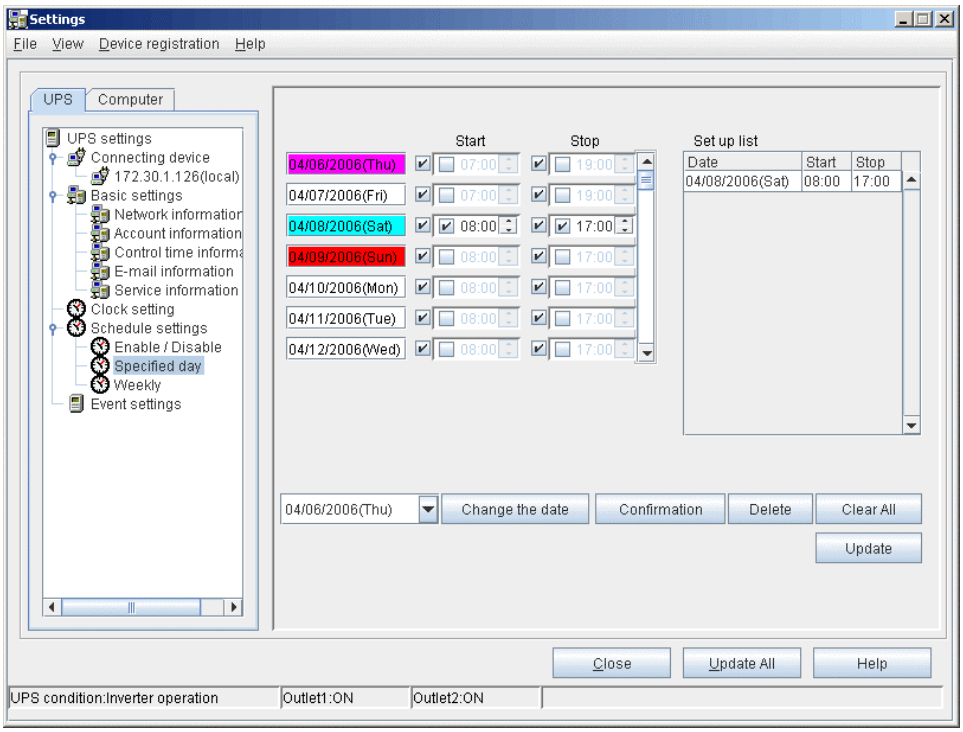
6.26 Setting schedule of the specified day

You can do the following settings:

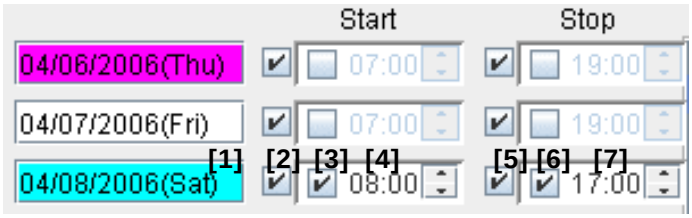
・Setting of operating schedule for specified day.

・Changing weekly scheduled operation of specified day.

Select [UPS] tab – [Schedule settings] – [Specified day], and the following page will be displayed.



Setting scheduled operation time



[1] Display the day to set a schedule.

[2] Scheduled start validation check box

Set whether or not to carry out scheduled start on specified day (Nov. 2, 2002 in above example). (Scheduled start include weekly and specified day's schedule.)

[3] Specified day's scheduled start validation check box

If you put a check mark, it becomes possible to set scheduled start on specified day (scheduled start will be controllable).

[4] Scheduled start setting area

Set the scheduled start time of specified day.

Time indicated at default is the time set for weekly schedule.

[5] Scheduled stop validation check box
Set whether or not to carry out scheduled stop on specified day (Nov. 2, 2002 in above example). (Scheduled stop include weekly and specified day's schedule.)

[6] Specified day's scheduled stop validation check box
If you put a check mark, it becomes possible to set scheduled stop on specified day (scheduled start will be controllable).

[7] Scheduled stop setting area
Set the scheduled stop time of specified day.
Time indicated at default is the time set for weekly schedule.

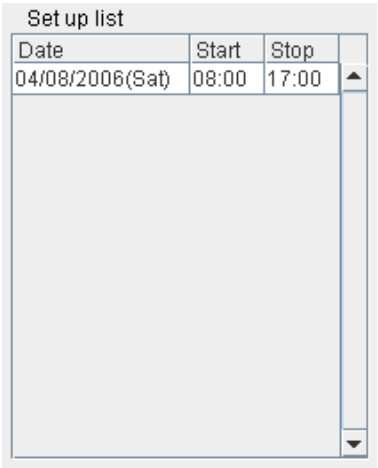
About scheduled start / stop validation check box ([2] and [5] in above)

This check box specifies whether or not to carry out scheduled start or stop on that day.
If there is a check, schedule will be carried out according to the requirements below.

	Weekly schedule	Specified day's scheduled	Operation schedule
1	Setting	Setting	Specified day's schedule will be executed.
2	No setting	Setting	Specified day's schedule will be executed.
3	Setting	No setting	Weekly schedule will be executed.
4	No setting	No setting	Scheduled operation will not be executed.

If there is no check, scheduled operation will not be carried out regardless of the condition listed above.
For example, when only weekly scheduled operation is carried out and you want to set so that scheduled operation will not be carried out on a specified day, remove the check mark from this check box and after the specified day has passed, it will go back to normal operation.

Confirmation of set condition of specified day's schedule



The left illustration is a list of specified day's schedule that has been set.

If you click Delete button after selecting an item, you can delete the set scheduled item.

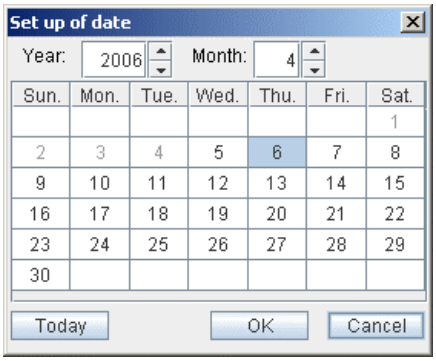
Clear All button will delete the entire content on the list collectively.

Moving the date



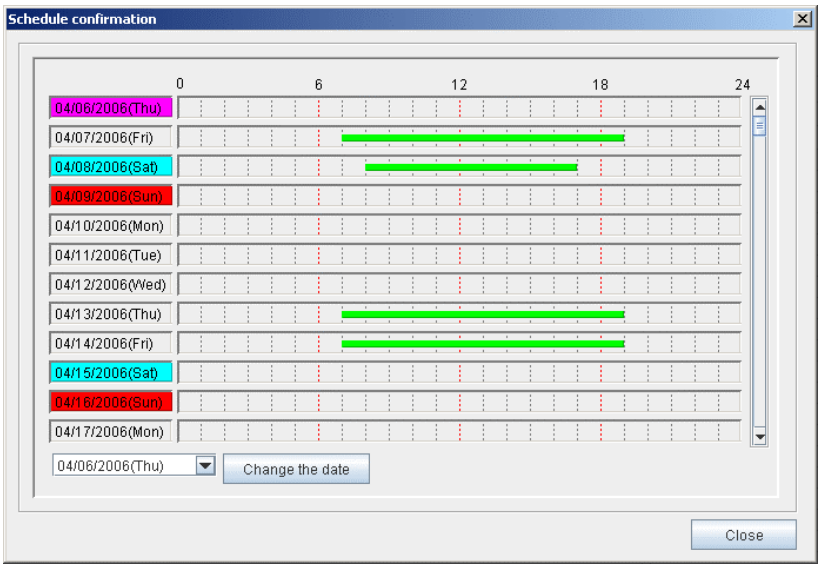
If you click “Change the date” after changing the date, display will move to the specified day.

If you click ▼ button, calendar page will be displayed.



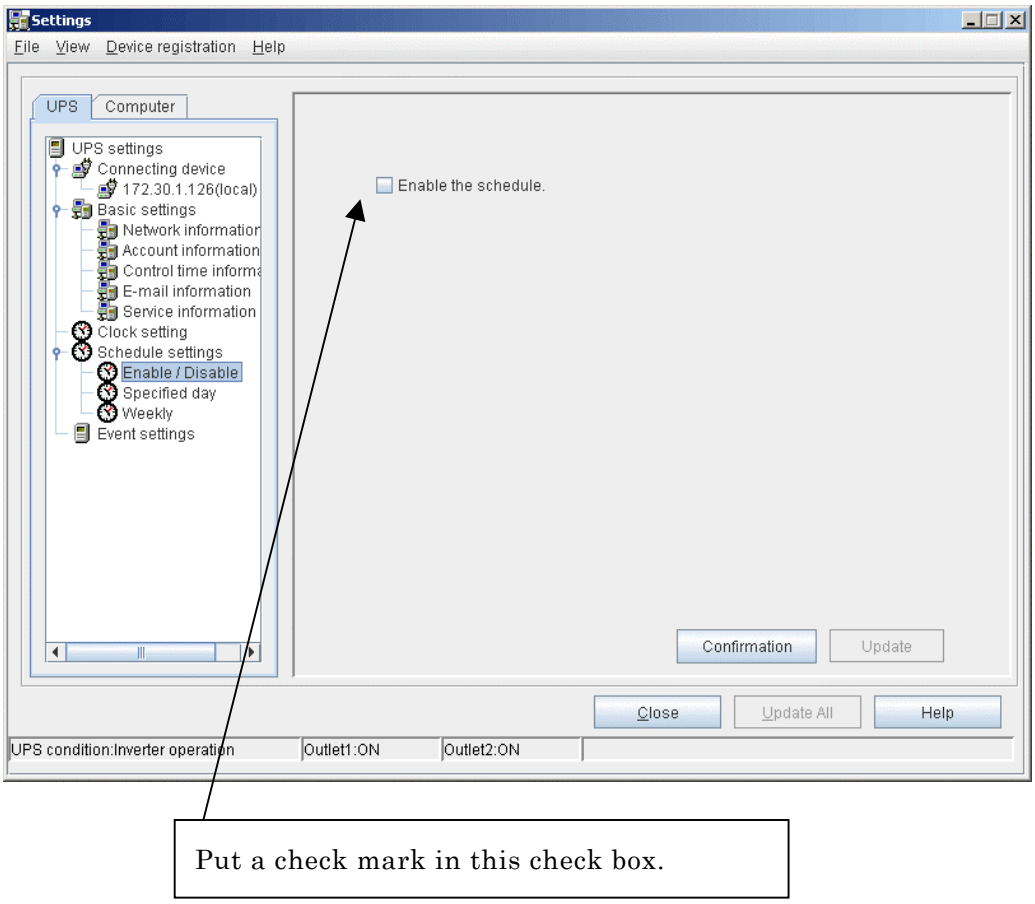
6.27 Confirmation of schedule

If you click Confirmation button in Weekly schedule setting page or Specified day's schedule setting page, currently set operation schedule will come out in a list.
You can check if there is any mistake in the set content.



6.28 Validation of scheduled operation

When there is no problem with the set schedule, “enable” the schedule function.

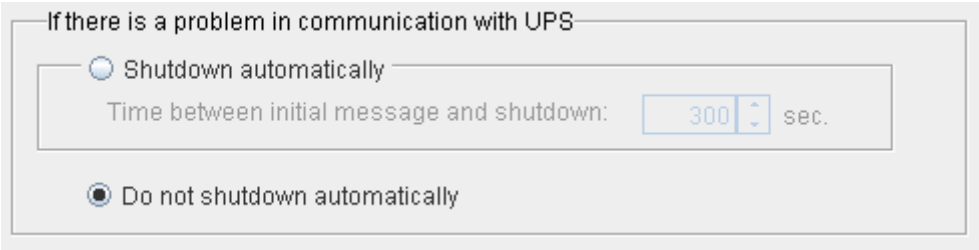


When there is no check in this check box, scheduled operation will not be carried out.

6.29 Whether or not to shutdown in case of communication trouble with UPS

When there is a communication trouble with UPS, it becomes impossible to understand the power condition.

From [Computer] tab – [UPS monitoring interval], you can select whether or not to shutdown the computer automatically when there is communication trouble with UPS. (Default: Do not shutdown automatically.)



(Above is an excerpt from [Computer setting] tab – [UPS monitoring interval] page.)

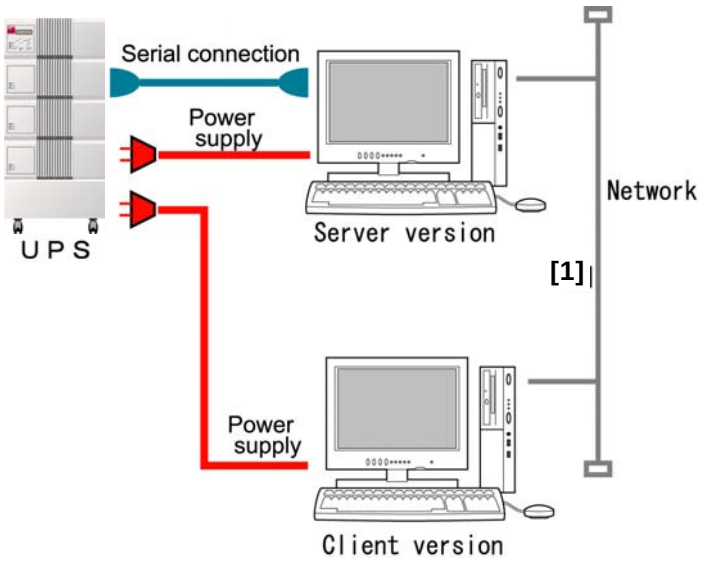
＜Information＞

In case of client connected computer, the sentence “When there is communication trouble with UPS” will be indicated as “When there is communication trouble with server.”

Operation during communication trouble	Content
Shutdown automatically.	When there is communication trouble, it will shutdown the computer automatically as a security measure.
Time between initial message and shutdown.	Set the delaying time until starting the shutdown procedure. (Default value: 300 seconds.)
Do not shutdown automatically.	When there is communication trouble, it will not shutdown the computer automatically.

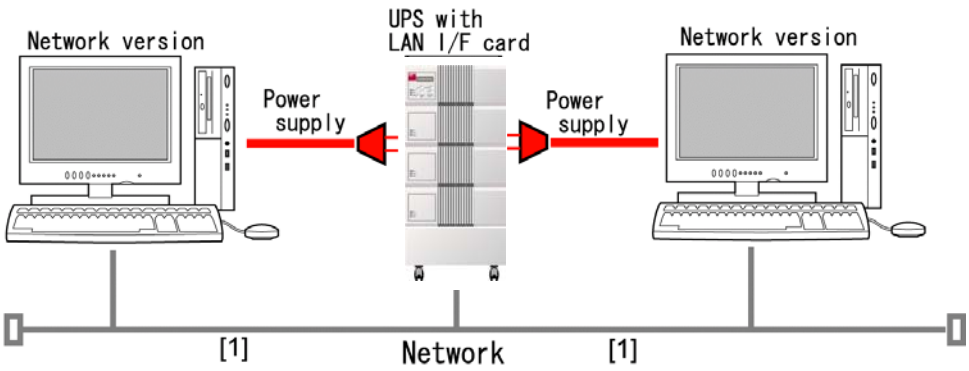
Whether or not to shutdown in case of communication trouble with UPS

Positioning of communication trouble when using UPS with serial interface



[1] Set the operation to conduct when communication trouble occur between server and client.

Positioning of communication trouble when using UPS with LAN interface



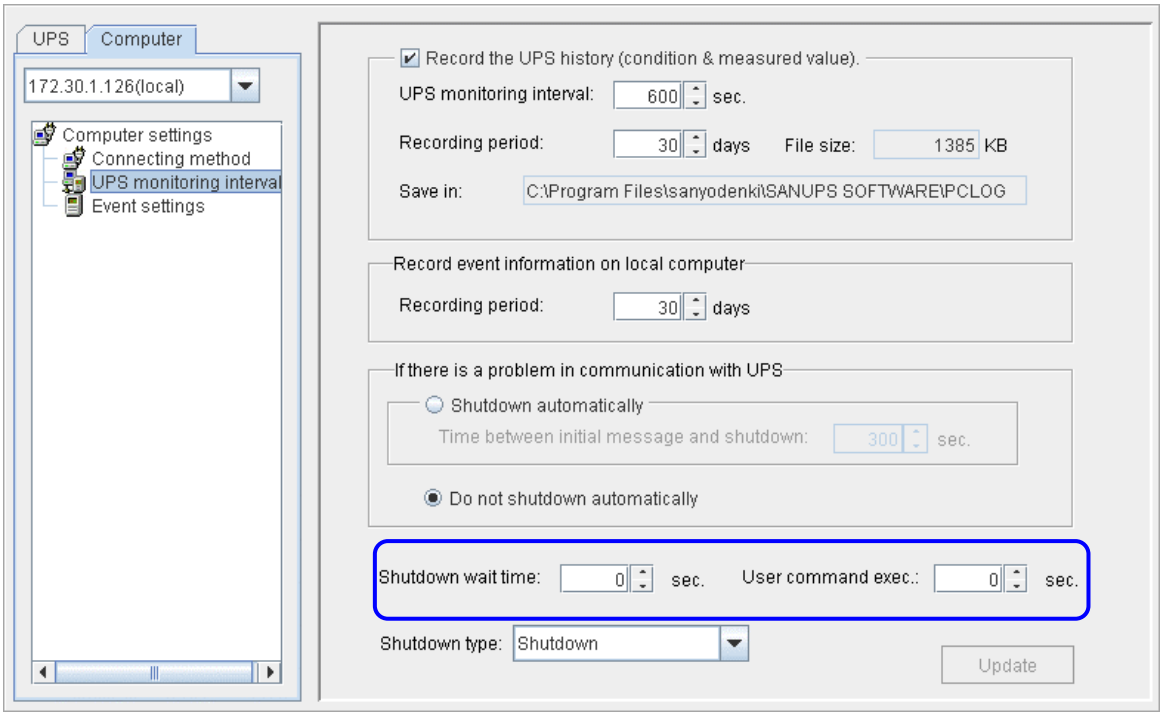
[1] Set the operation to conduct when communication trouble occur between the computers that are connected to UPS.

6.30 Shutting Down Connecting Devices in Order

> These settings can only be set on a computer with **SANUPS SOFTWARE** installed.

Setting the shutdown delay time for each computer separately enables shutdown of the computers to be staggered in the order of the computer shutdown timing.

Select [UPS monitoring interval] on the [Computer] tab.

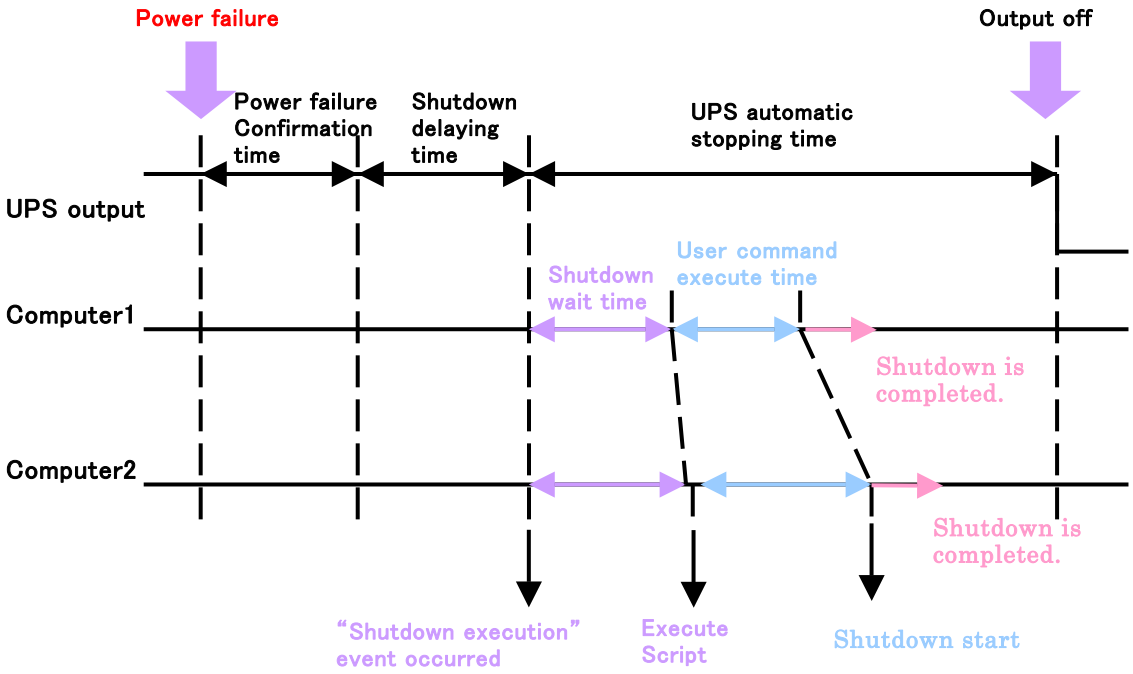


You can set [Shutdown wait time] and [User command exec.] for each computer on the screen above. (The default settings are all 0 sec.)

[Shutdown wait time]: This is the wait time from the issuing of the [Shutdown execution] event after the shutdown delay time elapses until the executing of the script registered for [Shutdown execution].

[User command exec.]: This is the delay time until the shutdown process actually begins after the [Shutdown execution] event is issued. This time enables the script registered for the [Shutdown execution] event to be executed.

The operation sequence is shown below.



Note

The computer begins shutdown after the shutdown delay time (shutdown wait time + user command execution time) has elapsed.

Furthermore, the timing for stopping the output of the UPS is after both the shutdown delay time and UPS automatic stop time have elapsed.

With regards to the UPS automatic stop time, consideration is not given to a shutdown start delay to compensate for when you set (shutdown wait time + user command execution time). Be sure to set a sufficient amount of time for UPS automatic stop time as shown below in order to ensure that the computers can be shutdown properly before the output of the UPS is stopped.

UPS automatic stop time > (shutdown wait time + user command execution time) + time required to shutdown the computers

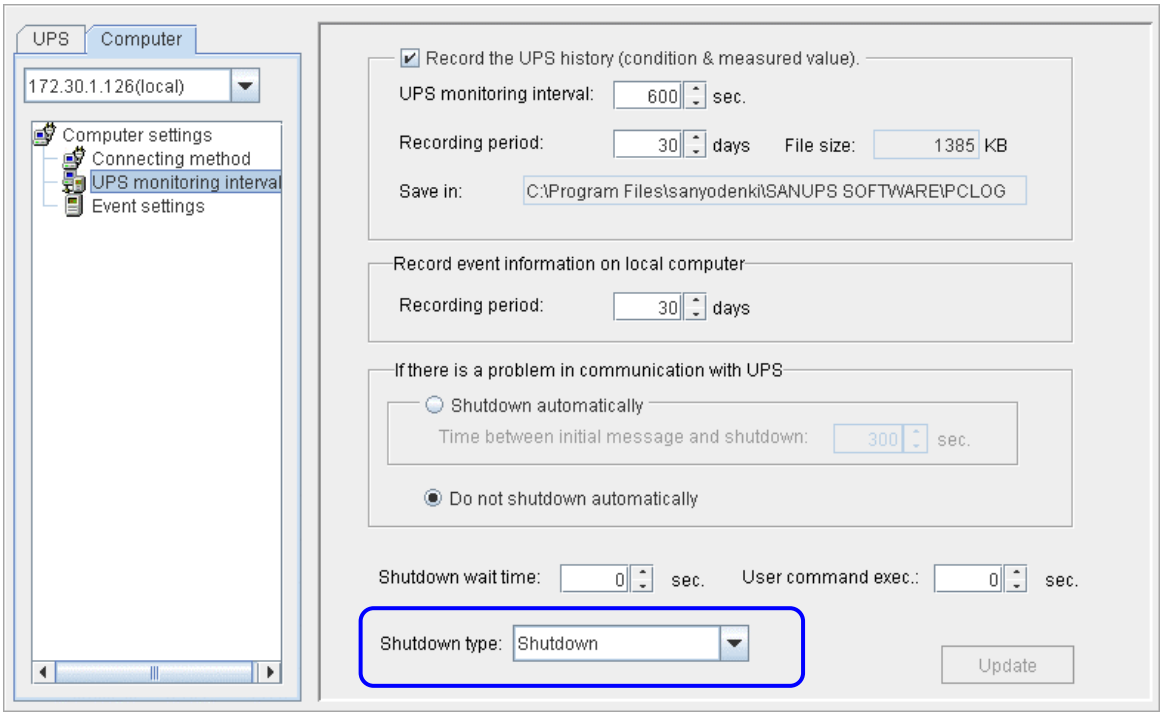
<Information>

Confirm shutdown sequence starting order, set shutdown wait time and user command execution time from "6.43 Confirm shutdown sequence of connected device." function.

6.31 Selecting the Computer Shutdown Method

You can select the shutdown method (shutdown type) for each computer separately.

Select [UPS monitoring interval] on the [Computer] tab.



On each computer, select the [Shutdown type] pull-down list on the screen above to display a list of the available shutdown types and then select a shutdown type.

You can select one of the following shutdown types.

- **Shutdown** (Note 1)
- **Shutdown and Power OFF** (only available for the **Windows** version)
- **Hibernate** (only available for the **Windows** version)

However, only [Shutdown] may be able to be selected for [Shutdown type] in some operating systems.

Note 1: Refer to the following section "About starting computers automatically."

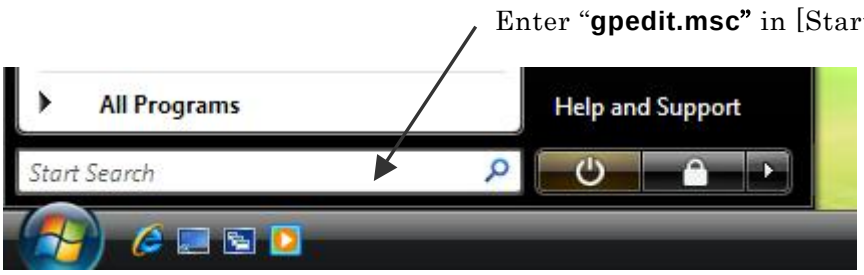
About starting computers automatically

In the case of the OS since **Microsoft Windows XP**, if the power of the computer is turned off automatically (without the "It is now safe to turn off your computer." message being displayed) after a shutdown is performed by the UPS control software, the computer may not start automatically even if power is supplied from the UPS.

To solve this problem, follow the procedure below to set the computer to not turn the power off automatically when a shutdown is performed from the UPS control software.

Procedure

[1] Click [Run] from the [Start] menu, and then execute **"gpedit.msc"**. Otherwise, on the standard [Start] menu of OS since **Windows Vista**, enter **"gpedit.msc"** in [Start Search] to execute command.



* The above figure shows Windows Vista.

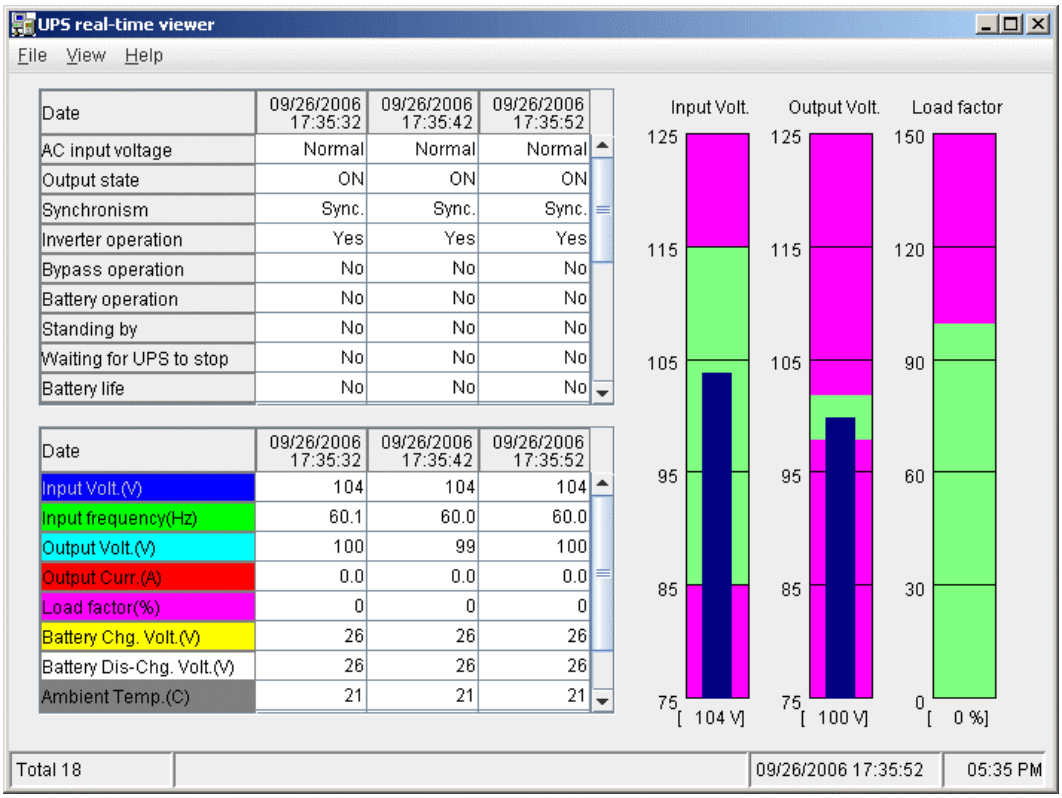
[2] Open [Local Computer Policy] – [Computer Configuration] – [Administrative Templates] – [System].

[3] Double-click [Do not turn off system power after a Windows system shutdown has occurred].

[4] Select [Enabled] on the [Settings] tab and then click the [OK] button.

6.32 Viewing UPS Conditions and Measurement Values in Real Time

If you select [UPS Real-time Viewer] from the [View] menu of the main screen (System state screen), you can view (monitor) the condition and measurement value information of the connected UPS in real time.



Date	09/26/2006 17:35:32	09/26/2006 17:35:42	09/26/2006 17:35:52
AC input voltage	Normal	Normal	Normal
Output state	ON	ON	ON
Synchronism	Sync.	Sync.	Sync.
Inverter operation	Yes	Yes	Yes
Bypass operation	No	No	No
Battery operation	No	No	No
Standing by	No	No	No
Waiting for UPS to stop	No	No	No
Battery life	No	No	No

Date	09/26/2006 17:35:32	09/26/2006 17:35:42	09/26/2006 17:35:52
Input Volt.(V)	104	104	104
Input frequency(Hz)	60.1	60.0	60.0
Output Volt.(V)	100	99	100
Output Curr.(A)	0.0	0.0	0.0
Load factor(%)	0	0	0
Battery Chg. Volt.(V)	26	26	26
Battery Dis-Chg. Volt.(V)	26	26	26
Ambient Temp.(C)	21	21	21

It will display the current value of **"Input voltage," "Output voltage"** and **"Load factor"** of each item in bar graphs.
It will display information on condition and measured value at every interval set.
※If UPS does not have measurement information transfer function, measurement information will not be displayed.

the contents of menu

"View" menu item	Content
Option	Displays Option page. The graph display is set up.
Type of graph	Switches between bar graph and line graph.
Interval of renewal	Switches display update interval.
Refresh	Displays the latest information compulsory.

About the normal ranges for the input voltage and output voltage

The normal ranges for the input voltage and output voltage are indicated in lime green in the bar graph view. The initial values for the normal ranges are as follows.

- Normal range for input voltage: Within ±15% of rated input voltage
- Normal range for output voltage: Within ±2% of rated input voltage

Example:

For a rated input voltage of 100 V, the normal range for input voltage is 85 to 115 V.

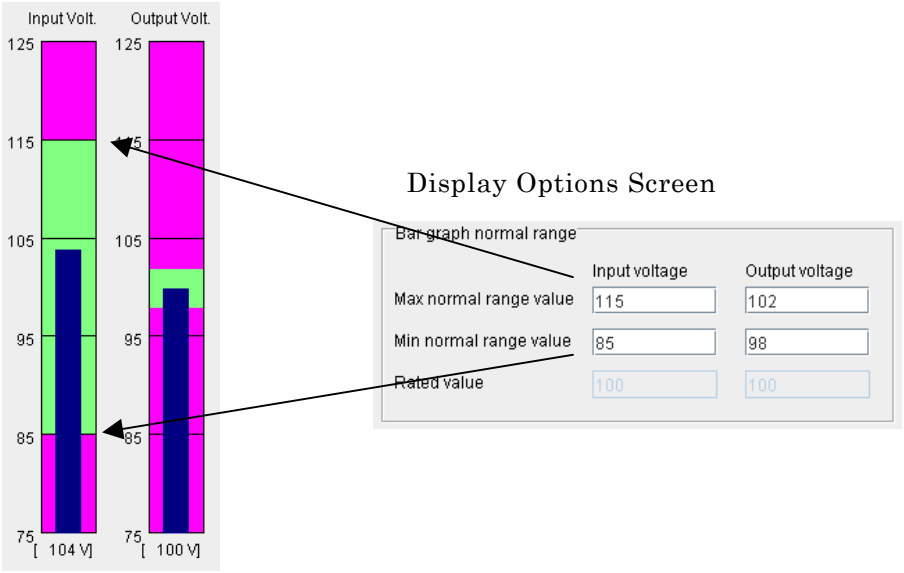
For a rated input voltage of 200 V, the normal range for input voltage is 170 to 230 V.

For a rated output voltage of 100 V, the normal range for output voltage is 98 to 102 V.

For a rated output voltage of 200 V, the normal range for output voltage is 196 to 204 V.

Since the normal ranges for input voltage and output voltage differ depending on the type of UPS, be sure to refer to the Instruction Manual of the UPS and change the normal ranges if the initial values differ from the normal ranges

To change the normal ranges, select [Option] from the [View] and then change the values in the View option screen that appears.



Confirmation of UPS real time viewer information from CUI command.

SANUPS SOFTWARE UNIX/Linux uses the following commands and is able to retrieve present status of UPS.

Command name : **ssrealcmd**
Overview : Output present UPS status to standard output.
Format : ssrealcmd -a { IP address | host name| LOCAL } [-h]

Option description

Arguments	Function	Note
-a Point to acquire information.	Point to acquire information should be specified from the followings. (1) IP address or host name Specifies LAN interface card or IP address of the device connected to SANUPS SOFTWARE server under using from network connected client device side. (2) LOCAL Specifies "LOCAL", under disusing network on the device connected to SANUPS SOFTWARE.	Required
-h	Display help message. If - h is specified, all other arguments will be disable then display help message.	Optional

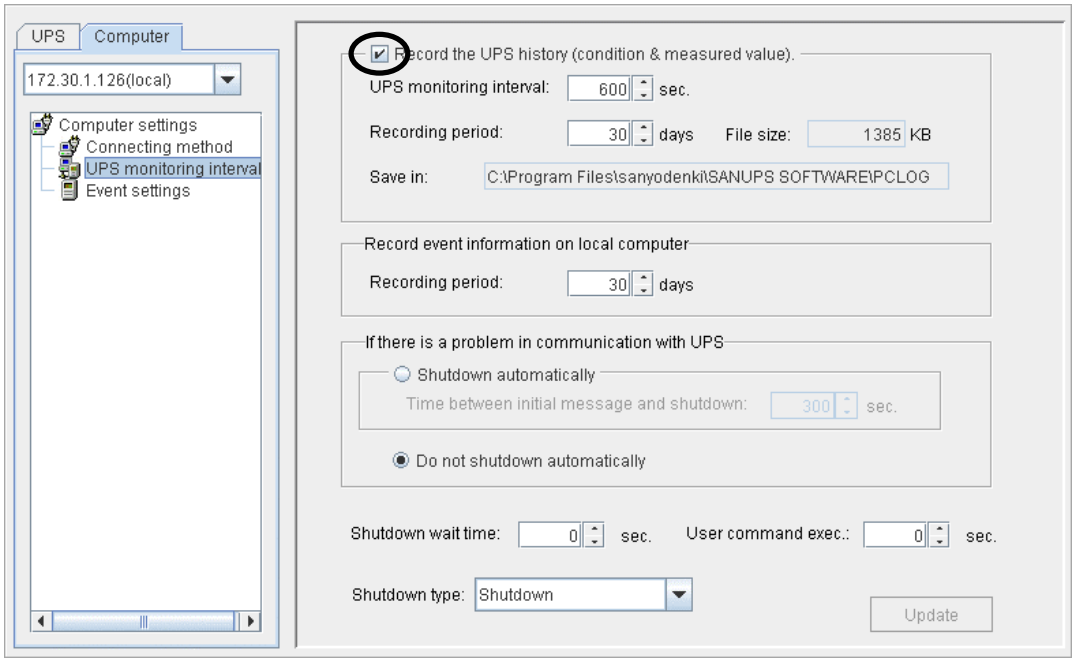
Usage example:

```
# ./ssrealcmd -a 192.168.1.1
```

6.33 Viewing History for Past UPS Conditions and Measurement Values

If [Record the UPS history (condition & measured value).] on the [UPS Information] setting screen of the UPS connection wizard is set or [Record the UPS history (condition & measured value)] of [UPS monitoring interval] on the [Computer] tab is set, you can acquire history information.

(History is set to be recorded at 600-second intervals for a period of 30 days by default.)



* The screenshot above is when registered to the LAN interface card.

If you select the [Record the UPS history (condition & measured value)] checkbox, the history information is saved to the computer.

You can change the settings for **[UPS monitoring interval]** and **[Recording period]**, and specify the file size for saved data. (The size for saved data in [File size] is a rough guide.)

Note

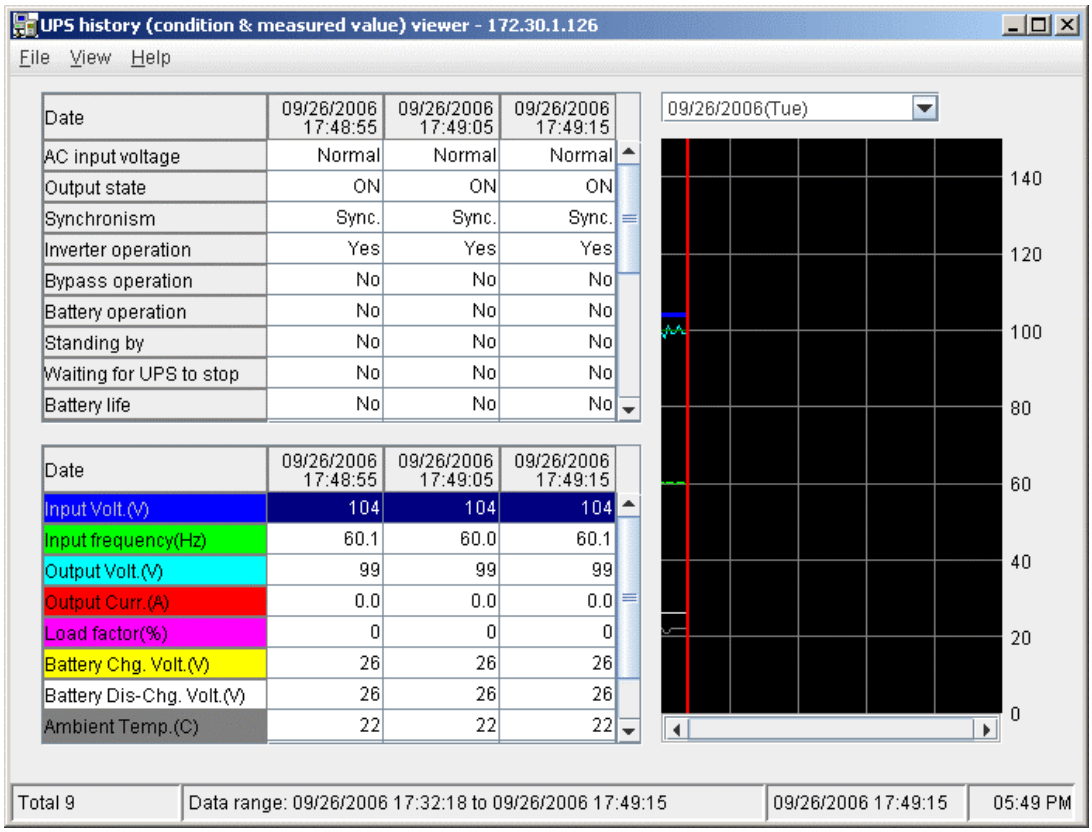
The storage destination for the history files is fixed.

Be sure to consider the amount of available disk space when setting the file size.

Information

Regardless of the UPS monitoring interval, a notification is received from the UPS and stored as history if the state of the UPS changes.

If you select [UPS history viewer] from the [View] menu of the main screen (System state screen), "UPS history (condition & measured value) viewer" Tool will be displayed.



Date	09/26/2006 17:48:55	09/26/2006 17:49:05	09/26/2006 17:49:15
AC input voltage	Normal	Normal	Normal
Output state	ON	ON	ON
Synchronism	Sync.	Sync.	Sync.
Inverter operation	Yes	Yes	Yes
Bypass operation	No	No	No
Battery operation	No	No	No
Standing by	No	No	No
Waiting for UPS to stop	No	No	No
Battery life	No	No	No

Date	09/26/2006 17:48:55	09/26/2006 17:49:05	09/26/2006 17:49:15
Input Volt.(V)	104	104	104
Input frequency(Hz)	60.1	60.0	60.1
Output Volt.(V)	99	99	99
Output Curr.(A)	0.0	0.0	0.0
Load factor(%)	0	0	0
Battery Chg. Volt.(V)	26	26	26
Battery Dis-Chg. Volt.(V)	26	26	26
Ambient Temp.(C)	22	22	22

※If UPS does not have measurement information transfer function, measurement information will not be displayed.

the contents of menu

"File" menu item	Content
Delete records	Deletes the history file.
Save As	Outputs history file in CSV format. (File output page will be displayed. Specify where to output.)
Open	Reads the file saved and displays the content of the file.

"View" menu item	Content
Option	Displays Option page. The graph display is set up.
Select computer	Select remote computer and it will display history of that computer.
Refresh	Displays the latest history information.

Confirmation of history information of UPS status measured value from CUI command.

SANUPS SOFTWARE UNIX/Linux uses the following commands and is able to retrieve history information data of UPS status measurement value which is recorded in computer.

Command name:**sshistcmd**

Overview : Retrieving history data of UPS status measurement value which is recorded in computer under operating SANUPS SOFTWARE and output standard output or file.

```
Format: sshistcmd  -a { IP address | host name | LOCAL }
                     -t target data of output
                     [-o point to output]
                     [-i output item]
                     [-u UPS name]
                     [-f CSV file name]
                     [-c Confirmation of overwriting]
                     [-h]
```

Option description(1／2)

Arguments	Function	Note
-a Point to acquire information	Point to acquire information should be specified from the followings. ① (1) IP address or host name Specifies IP address of point to acquire information under retrieving information through network for computer which is operated SANUPS SOFTWARE. (2) LOCAL Specifies “LOCAL”, under disusing network by computer under operating SANUPS SOFTWARE.	Required
-t Target data of output	Specifies data YYYYMMDD format. ex) 「-t 20090715」 (Retrieving history of 2009/7/15)	Required
-o point to output	Specifies point to output. Specifies as “s” (standard output device) or “f” (CSV file) Regarded as “-o s” under optional.	Optional
-i output item	Specifies output item. Specifies “g” (normal display item) or “s” (SANUPS SOFTWARE compatible item). Regarded as “-i g” under optional. “s” specification is able to use under specifying CSV file as a point to output then create CSV file which is readable by SANUPS SOFTWARE or SANUPS SOFTWARE COMBINATION.	Optional
-u UPS name	Able to specify only under SANUPS SOFTWARE client which is connected to multi UPS. Specifies connected UPS name (IP address or network name). Regarded as UPS in name ascending order.	Optional

Option description(2／2)

Arguments	Function	Note
-f CSV file name	Specifies CSV file name. (If point to output is standard output device, ignore this point.) Under optional, regarded as the following format file name. Format : [output target data]＋"_"＋[point to acquire information]＋"_"＋[UPS name]＋".csv" (ex : 20090715_172.30.1.1_172.30.1.2.csv)	Optional
-c Confirmation of overwriting	Specifies confirmation of overwriting under CSV file output. (If point to output is standard output device, ignore this point.) Specifies as “y” (confirmed) or “n” (unconfirmed). Under confirmation of overwriting is “n”, if the same name file is already exist, overwrite without user authentication. Regarded as “-c y” under optional.	Optional
-h	Display help message. If “-h” is specified, other arguments will be all disable then display help message.	Optional

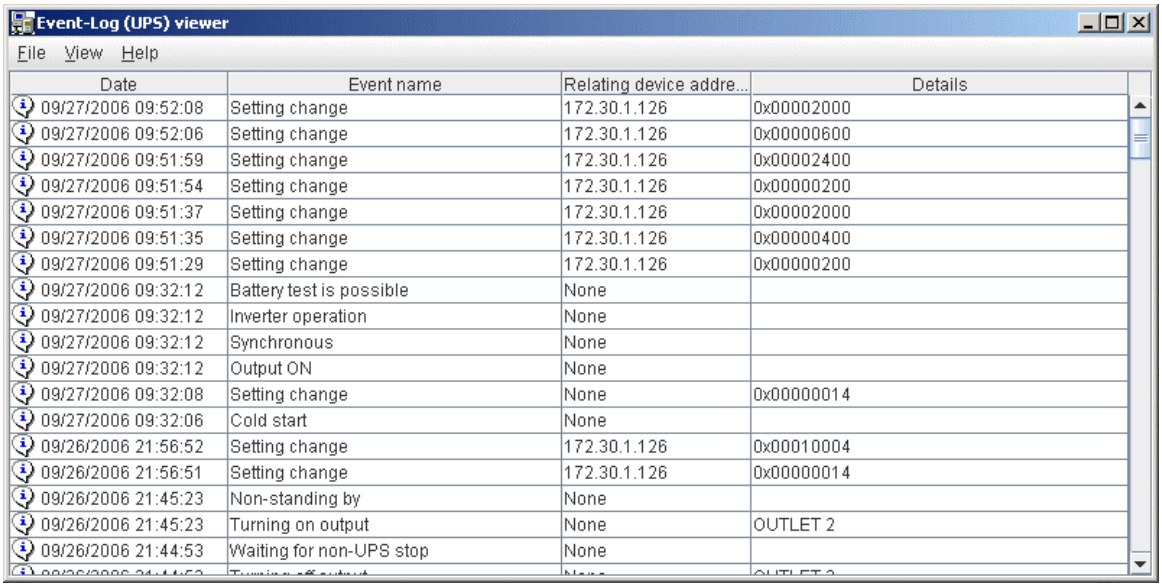
Usage example:

```
# ./sshistcmd -a 192.168.1.1 -t 20120801 -o f -f 20120801_ups01.csv -c y
```

6.34 Displaying event-log (Information maintained by UPS)

From Event setting ([UPS] – [Event settings] – [Event-log]), the content that has been set as "Enable" will be saved and you can check the event content from View Tool.

※Event-log maintained by UPS will be up to 320.



the contents of menu

"File" menu item	Content
Save As	Outputs event-log file in CSV format. (File output page will be displayed. Specify where to output.)
Open	Reads the event-log file that has been output. (File reading page will be displayed. Specify the file to read.)

"View" menu item	Content
Sort	Sets sorting order of displayed content.
Refresh	Displays latest event-log.

<About Detailed Content of Setting Modification Event>

"0x????????" (hexadecimal display) of detailed content of the setting modification event indicates for which items the settings have been modified. An item for which the setting can be modified is assigned to each of the 32 bits and 1 is set for the bit of an item that has been modified. The assignment for each bit is as follows. For details on each item, contact Sanyo Denki.

Upper 16 bit	31－28				27－24				23－20				19－16			
	8	4	2	1	8	4	2	1	8	4	2	1	8	4	2	1
Setup change item	(Unused)	(Unused)	(Unused)	(Unused)	(Unused)	(Unused)	(Unused)	Auto. Batt. Check Information	(Unused)	(Unused)	(Unused)	(Unused)	(Unused)	Service information	Contact polarity information	E-mail information

Lower 16 bit	15－12				11－8				7－4				3－0			
	8	4	2	1	8	4	2	1	8	4	2	1	8	4	2	1
Setup change item	(Unused)	SNMP information	E-mail notice information	WS event script information	WS login script information	Event message information	event-log information	(Unused)	NTP information	Schedule operation information	Schedule operation condition	Connection device information	System manage information	System control information	Clock information	Account information

(Example 1) When the clock information was changed

Details：0x0000000**2**

(Example 2) When the scheduled operation condition (enable/disable) and the scheduled operation information (weekly/specific day schedule) were changed.

Details：0x0000006**0**

Displaying event-log (Information maintained by UPS)

Confirmation of event log (UPS) information from CUI command.

SANUPS SOFTWARE UNIX/Linux uses the following commands and is able to retrieve event log of LAN interface card or UPS log which is recorded in device connected to SANUPS SOFTWARE server.

Usage command name：**ssupslogcmd**

Overview：Standard output event log of LAN interface card or UPS information of device connected to SANUPS SOFTWARE server, or output to the file.

Format: ssupslogcmd -a { IP address | host name | LOCAL }
[-o Point to output]
[-f CSV file name]
[-c Confirmation of overwriting]
[-h]

Option description

Arguments	Function	Note
-a Point to retrieve information	Specifies the following point to retrieve information. (1) IP address or host name Specifies LAN interface card or IP address of device connected to SANUPS SOFTWARE server. (2) (2) LOCAL Specifies “LOCAL”, under disusing network by computer under operating SANUPS SOFTWARE.	Required
-o Point to output	Specifies point to output. Specifies “s” (standard output device) or “f” (CSV file). Regarded as “-o s” under optional.	Optional
-f CSV file name	Specifies CSV file. (If point to output is standard output device, ignore this point.) Regarded as the following format file name under optional. Format：[upslog]＋″_″＋[point to retrieve information]＋″.csv″ (ex：upslog_172.30.1.10.csv)	Optional
-c Confirmation of overwriting	Specifies confirmation of overwriting under CSV file output. (If point to output is standard output device, ignore this point.) Specifies as “y” (confirmed) or “n” (unconfirmed). Under confirmation of overwriting is “n”, if the same name file is already exist, overwrite without user authentication. Regarded as “-c y” under optional.	Optional
-h	Display help message. If “-h” is specified, other arguments will be all disable then display help message.	Optional

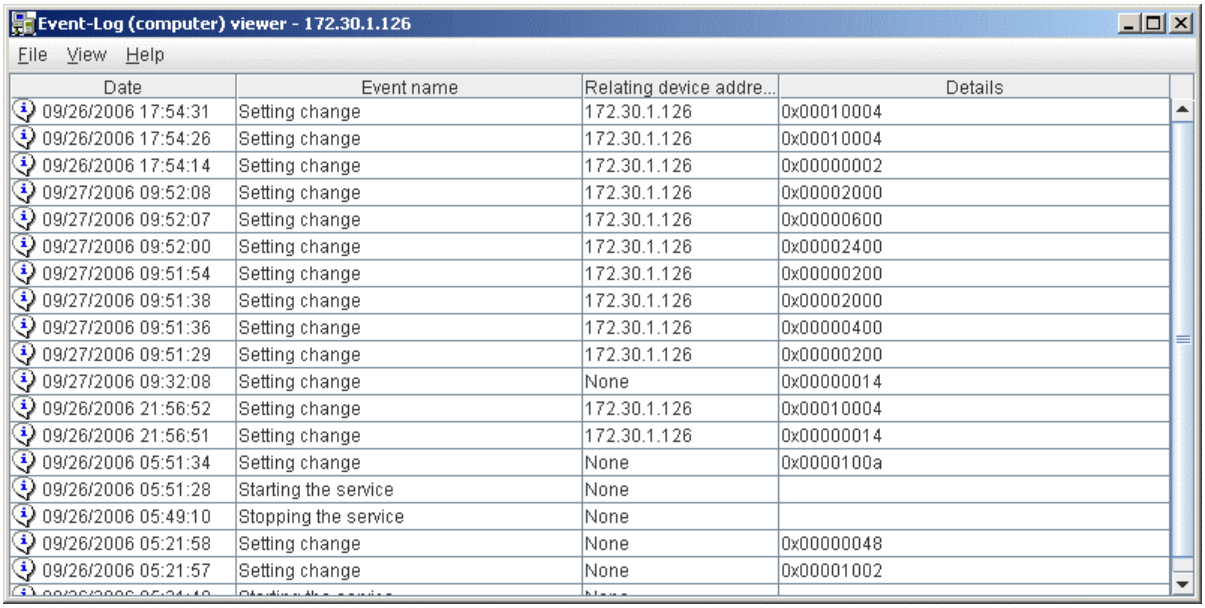
Usage example：

```
# ssupslogcmd -a 192.168.1.1 -o f -f upslog_192.168.1.1.csv -c y
```

6.35 Displaying event-log (Information maintained by computer)

From Event setting ([Computer setting] – [Event settings] – [Event-log]), the content that has been set as "Enable" will be saved and you can check the event content from View Tool.

※Number (range) of events that can be maintained can be specified from "Record event information on the local computer" in [Computer] – [UPS monitoring interval] .



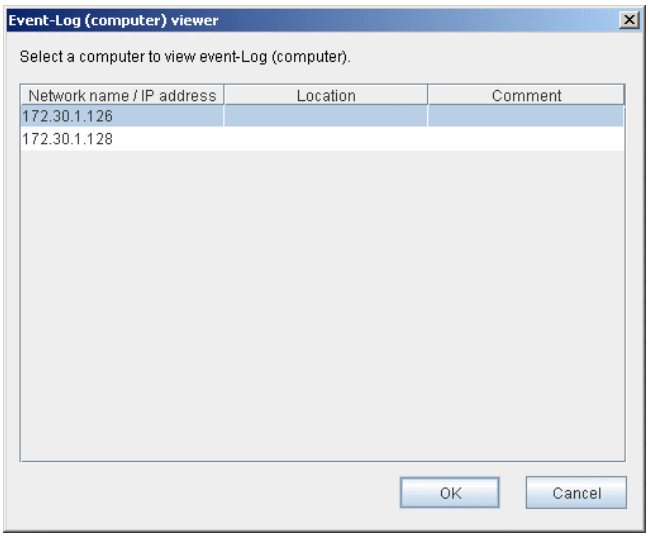
the contents of menu

"File" menu item	Content
Delete event-Log	Deletes event-log.
Save As	Outputs event-log file in CSV format. (File output page will be displayed. Specify where to output.)
Open	Reads the event-log file that has been output. (File reading page will be displayed. Specify the file to read.)

"View" menu item	Content
Sort	Sets sorting order of displayed content.
Selection of computer	Select remote computer and it will display event-log on that computer.
Refresh	Displays the latest event-log.

Selection of computer

If you select “Selection of computer” menu, page shown on right will be displayed. It will display event-log of the computer that was selected from the list of remote computers.



Confirmation of event log (computer) information from CUI command.

SANUPS SOFTWARE UNIX/Linux uses the following commands and is able to retrieve log which is recorded in computer operating SANUPS SOFTWARE.

Usage command name:**sspclogcmd**

Overview:Standard output operation log information which is recorded in computer operating SANUPS SOFTWARE or output to file.

Usage name: sspclogcmd -a { IP address | host name | LOCAL }
[-o point to output]
[-f CSV file name]
[-c confirmation f overwriting]
[-h]

Option description

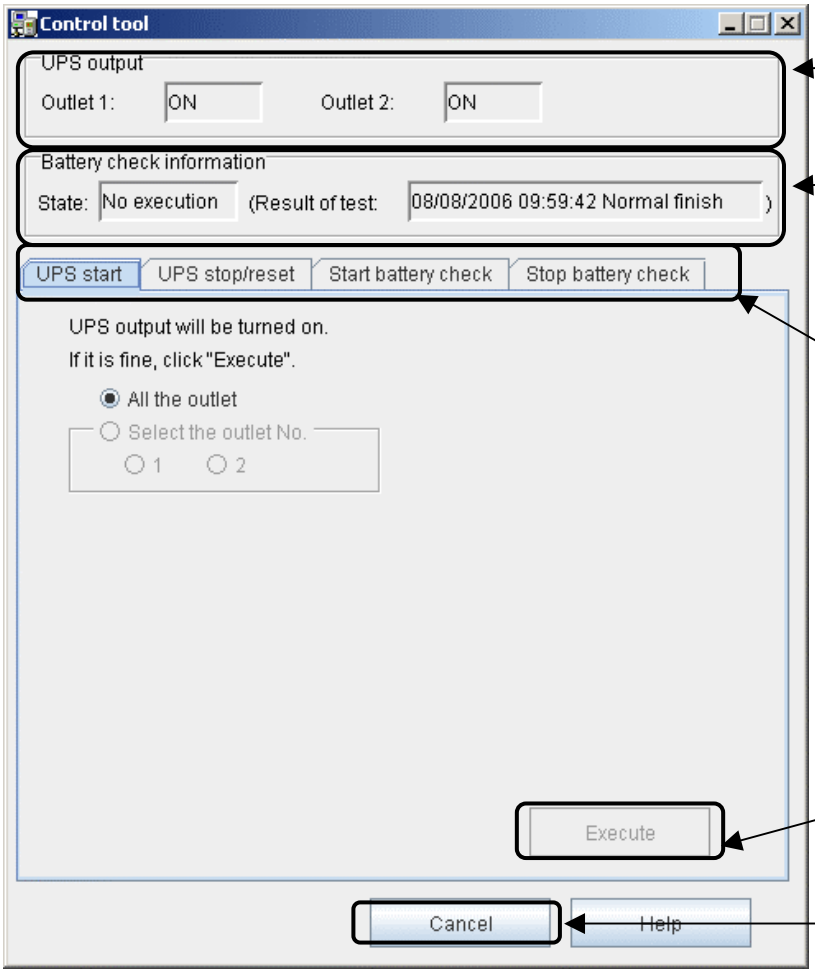
Arguments	Function	Note
-a Point to retrieve information	Specifies point to acquire information from the followings. (1) IP address or host name Under using computer which is connected to network, specifies IP address of point to acquire information which retrieves information through network. (2) LOCAL Specifies "LOCAL", under disusing network by computer under operating SANUPS SOFTWARE.	Required
-o Point to output	Specifies point to output. Specifies as "s" (Standard output device) or "f" (CSV file). Regarded as "-o s" under optional.	Optional
-f CSV file name	Specifies CSV file name. (If point to output is standard output device, ignore this point) Regarded the following format file name under optional. Format : [pclog]＋"_"＋[Point to acquire information]＋".csv" (ex : pclog_172.30.1.10.csv)	Optional
-c Confirmation of overwriting	Specifies confirmation of overwriting under CSV file output. (If point to output is standard output device, ignore this point.) Specifies as "y" (confirmed) or "n" (unconfirmed). Under confirmation of overwriting is "n", if the same name file is already exist, overwrites without user authentication. Regarded as "-c y" under optional.	Optional
-h	Display help message. If "-h" is specified, other arguments will be all disable then display help message.	Optional

Usage example:

```
# sspclogcmd -a 192.168.1.1 -o f -f pclog_192.168.1.1.csv -c y
```

6.36 About UPS control

If you start Control Tool, the page below will be displayed.
You can control the UPS that is connected.



Displays power supply condition of UPS output outlet. (Note1)

Displays result of battery check. (Note2)

Switches types of control.
- **Starting UPS**
- **Stopping UPS**
- **Starting battery check**
- **Stopping battery check**

(Note3)

Executes control (Note4)

Quits control procedure.

Page image when using UPS with multiple power distribution output.

(Note1) In case of using UPS without multiple power distribution output, it will display output condition of “entire outlet.

(Note2) In case of using UPS without battery check function, there will be no display of ”Battery check condition.”

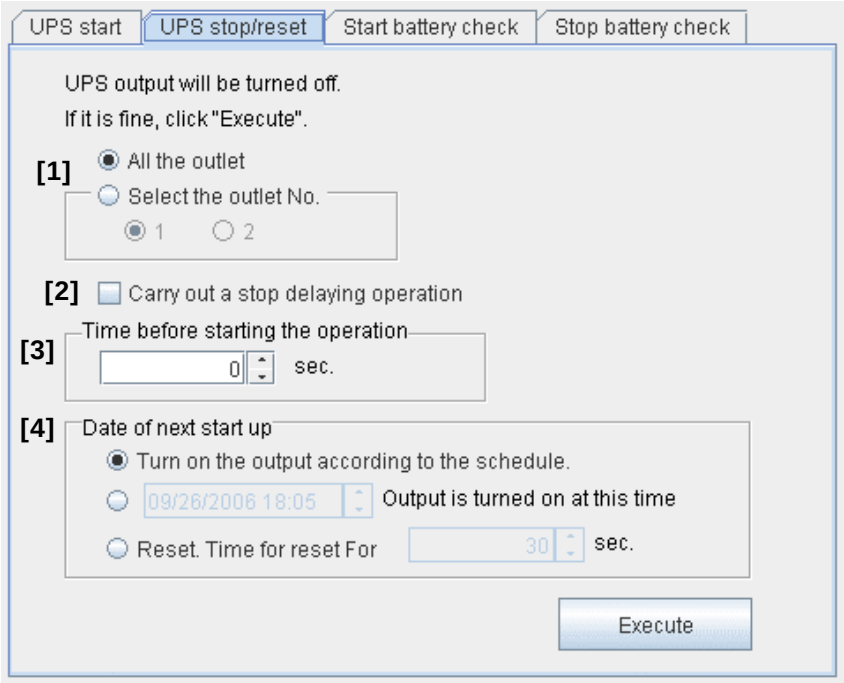
(Note3) In case of using UPS without battery check function, both tabs of “Starting battery check” and “Stopping battery check” will not be displayed.

(Note4) In case it is unnecessary to do that control because of such cases as all the outlets are turned on or battery check has been started, [Execute] button will become unusable.

6.37 Turning on / off the output of UPS

(A) Turning off the output of UPS

You can control the output of the connected UPS from the computer.
(Computer that is connected to that output outlet will shutdown automatically.)



[1] Selection of outlet to control

Select the outlet to conduct stop control.

There is difference in items that can be set according to types of UPS.

Types of UPS	Outlet No.1	Outlet No.2	All the outlets
Multiple power distribution output UPS	Setting possible	Setting possible	Setting possible
UPS other than above	—	—	Setting possible (Fixed)

(Caution) Stop control cannot be conducted on constant output outlet.

[2] Stop delay execution requirement (Default condition: Invalid)

It will conduct delay according to the content set in “Scheduled stop timing information” from [UPS setting] tab – [Standard setting] – [Control time information].

Please refer to Section 2.2.1 (3), ”Remote control sequence” for the operation of stop delay.

[3] Setting time until start of procedure (Default value: 0 second)

It will set delay time before starting the stop control.

In case of immediate stop, stop procedure will start after this set time has elapsed.

Please refer to Section 2.2.1 (3), "Remote control sequence" for stop operation.

[4] Setting next start date

It will set when to turn on the UPS output outlet that has been turned off.

Next start control items	Content
Turn on the output according to the schedule.	When weekly or specified day's schedule is set, start at that set time. When schedule is not set (including invalid execution of the schedule), output of UPS will remain turned off.
Turn on the output on (specified day and time).	Turn on the output of UPS on specified day and time.
Reset.	Turn on the output of UPS after set "Reset time" has elapsed.

(B) Turning on the output of UPS.

It will turn on the output of an outlet that is turned off.

It can be used only when multiple power distribution output UPS is used.

(In case of UPS without multiple power distribution, turning off of output means turning off of computer. Thus, it is prohibited to turn on the UPS output outlet.)

6.38 Performing a UPS Battery Check

If you select [Battery check] from the [UPS Control] menu on the main screen (System state screen), you can perform a battery check for the connected UPS from **SANUPS SOFTWARE**. (Note 1)

Note 1: Some models of UPS do not include support for a battery check from a remote device.

Following is the result of the battery check.

Battery test result	Explanation
Unknown	It will be set when battery check is requested.
Normal finish	Battery is normal.
Error finish	If battery check is conducted when battery capacity is small, such as after battery operation during power failure, it may become an error finish. In such case, you will need to charge the battery. If the result of the test comes out as error finish even after charging the battery, battery life (defectiveness) can be considered as the cause.
Error	Battery test cannot be conducted for some reason.
Test suspended	It will be displayed when battery check is suspended.
Testing	It will be displayed during the battery test.

(※1) When you are using UPS without battery check function, there will be no indication of “Battery check condition.”

(※2) “Execute” button will become unusable during the battery check.

(※3) When you are using UPS without battery check function, there will be no indication of both “Starting battery check” and “Suspending battery check” tabs.

(※4) When the computer is contact connected to UPS, battery check cannot be conducted

If you want the battery check to be performed automatically at a fixed interval, refer to Section 6.9.4 , “[Battery] Tab”.

6.39 Adjusting the Clock of the UPS

Since a UPS or LAN interface card operates according to its own clock (Note 1), log recording may be affected if the time of the clock differs from the current time. Also, a scheduled operation may take place at a time different to that set (Note 2). Therefore, setting the clock regularly is recommended (Note3).

Note 1: Some types of UPS do not have an internal clock. The clock setting is ignored for a UPS that does not have an internal clock.

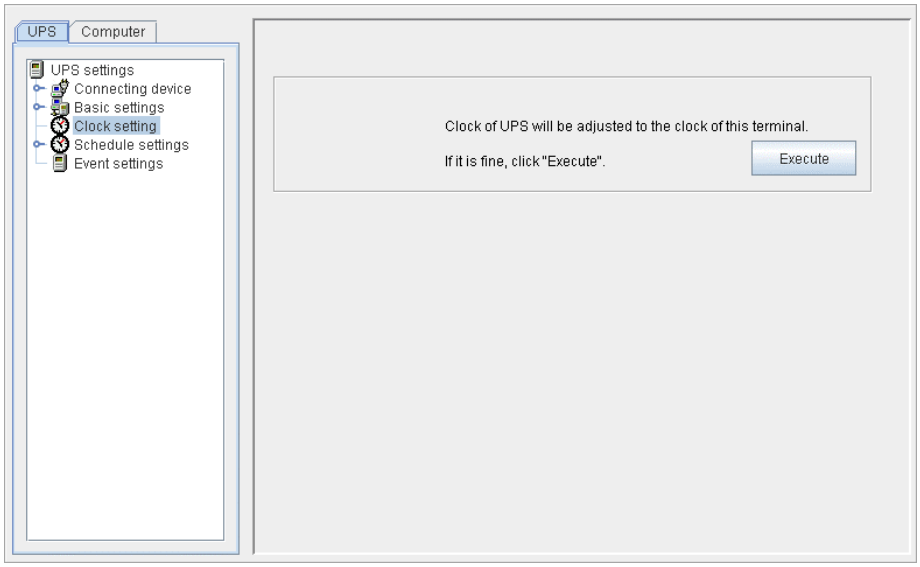
Note 2: When a computer with **SANUPS SOFTWARE** installed and a UPS are connected with a serial cable in a server-client configuration, a scheduled operation takes place according to the time of the server computer. Also, if a UPS is equipped with a LAN interface card, a scheduled operation takes place according to the time of the LAN interface card.

Note 3: When a computer with **SANUPS SOFTWARE** installed and a UPS are connected with a contact connection, the clock time cannot be set.

Adjusting the clock of the UPS or LAN interface card to match the time of the clock of the local computer

[1] Adjust the clock of the computer regularly.

[2] Select [Clock setting] from the [Settings] menu on the main screen (System state screen).

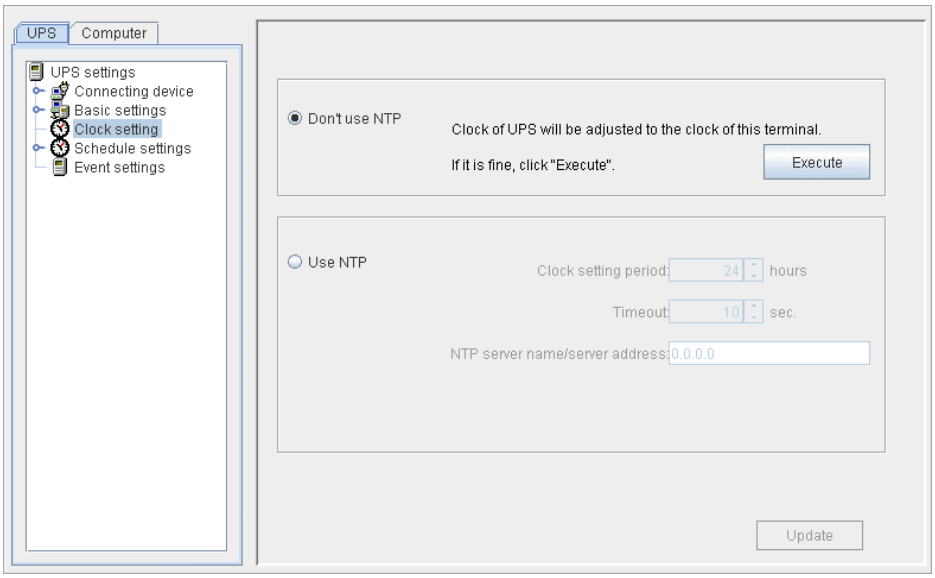


[3] Click the Execute button.

The clock information of the computer is reflected on the UPS.

Using an NTP server to synchronize the time (only supported for a UPS with LAN interface card)

[1] Select [Clock setting] from the [Settings] menu on the main screen (System state screen).
[2] Select [Use NTP].



[3] Correctly set [Clock setting period], [Timeout], and [NTP server name/server address] and then click the [Update] button.
The LAN interface card synchronizes the time with the NTP server.

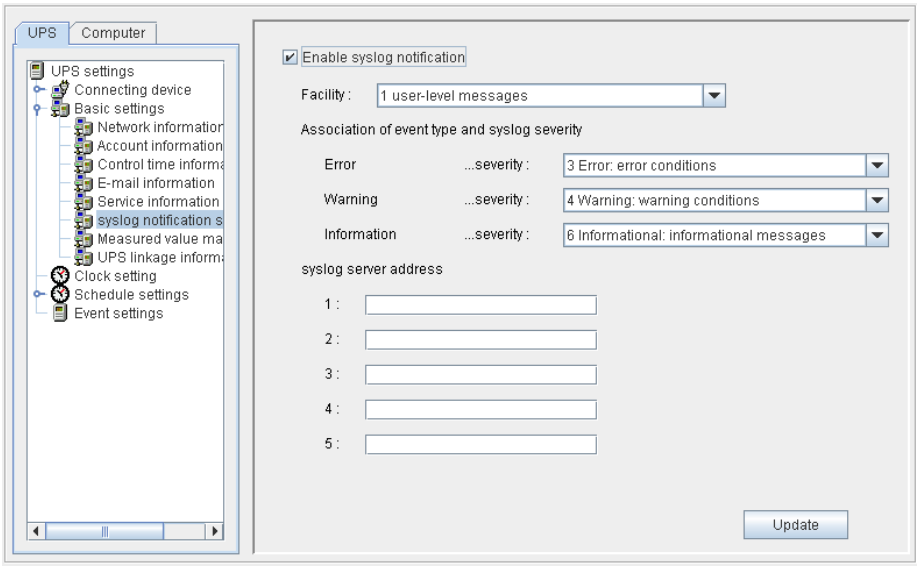
6.40 Setting for Syslog notification

LAN interface card which has Syslog notification function, can notify log to the syslog server. This section is that setting.
Log notification to the Syslog server is from LAN interface card.

[Operation order]

①Select “Settings” – “Detail” from the menu of System state screen.

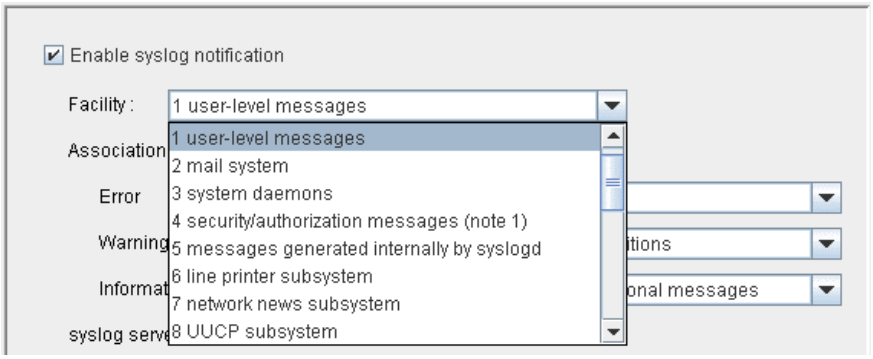
②Select “Basic settings” – “syslog notification settings” from “UPS” of setting screen, to display setting screen.



(Default uncheck “Enable syslog notification”)

[Facility]

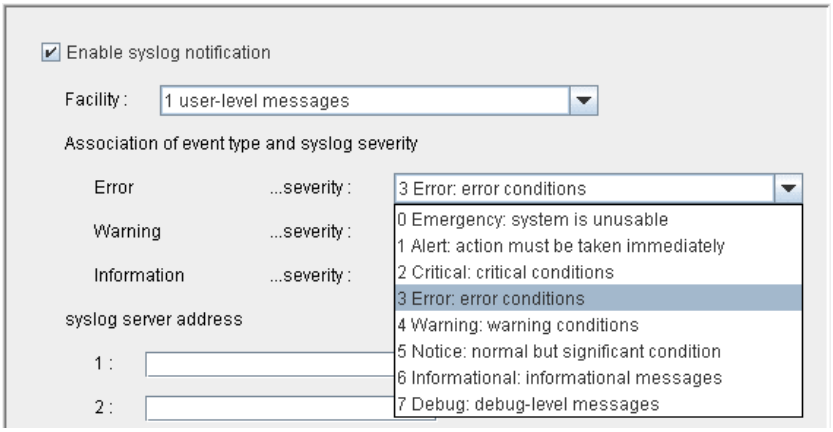
Select the level of sending message from LAN interface card to the Syslog server.
It is based on “RFC3164”. Select this by following the specification.



[Association of event type ans syslog severity]

Select the event type to notify Syslog server from LAN interface card.

It is based on “RFC3164”. Select this by following the specification.



[syslog server address]

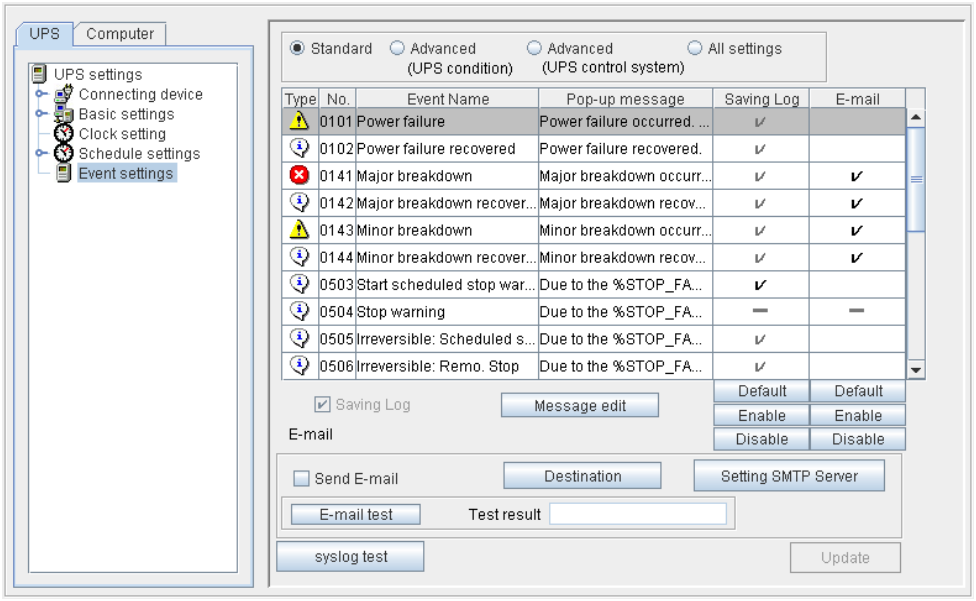
Set the Syslog server address to notify the event when the event occurred.

Maximum 5 addresses can be set.

＜Testing the notification syslog＞

Select [UPS]tab — [Event settings].

If you select any event and then press the [syslog test] button, a test syslog message is sent to syslog servers.



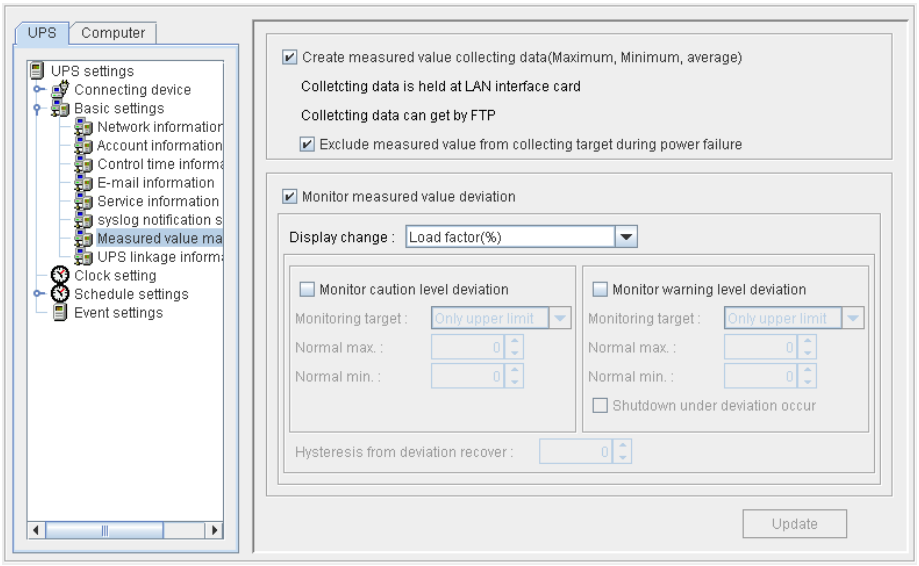
6.41 Setting for measured value management

This function is available to set under using LAN interface card which supports measured value management function.
LAN interface card which has measured value management function collects measured value data and hold the data. Collection data can confirm by using Web browser.
Measured value deviation monitoring can set for the measured value for “Load factor”, “Ambient Temp.” and “Input Volt.” If measured value deviates from normal range, recording log or sending mail. Shutdown setting is also available for measured value deviation.

［Operation order］

①Select “Settings”-“Detail setting” from the menu of System state screen to display setting screen.

②Select “Basic settings”-“Measured value management” from “UPS” of setting screen.



（Default is uncheck “Create measured value collection data (Maximum, Minimum, avarage)” and “Monitor measured value deviation”.）

<u>If check to the [Create measured value collection data (Maximum,Minimum,avarage)]</u> Use Web browser to confirm collection data. (**SANUPS SOFTWARE** can not confirm collecting data.) Please refer to the users guide of LAN interface card about this function.

6.42 Shutdown test for registered device

Shutdown tests for client device which connect to server version of **SANUPS SOFTWARE** and client device which connect to LAN interface card are available. (If using server/client composition, server version is not covered for the test because shutdown test will be done by receiving pseudo signal from server version.)
The following three sequences shutdown test can be executed by the simulation test without an actual power failure. However, shutdown test does not run E-mail notification, SNMP trap notification, or output control.

Executing sequence	Sequence starting point	Sequence ending point
Power failure	Power failure	UPS automatic stop time pass (UPS output status is not actually controlled.)
Battery voltage low	Battery voltage low	
Shutdown	Run shutdown	

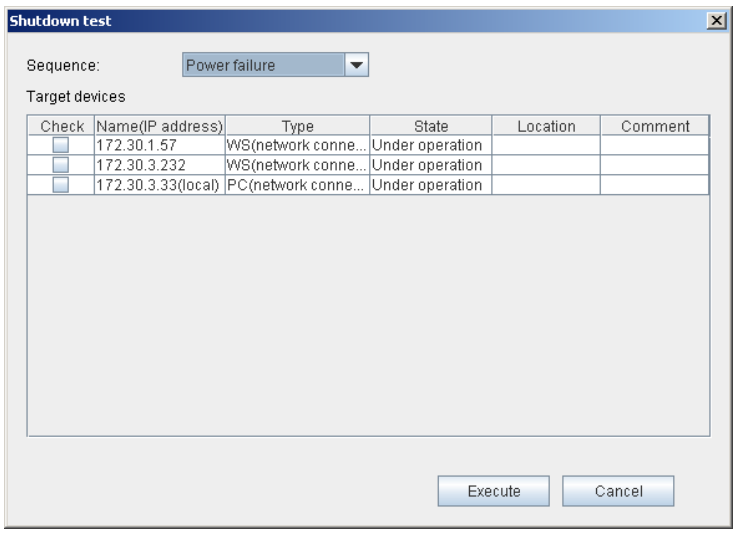
Shutdown test can be executed below registered devices individually or all at one.(However, don't change any setting information of the UPS or control execution during shutdown test.)

Device Type	Remakes
PC(network connection)	UPS management software
PC(LAN I/F card contact connection)	LAN Interface card
WS(network connection)	UPS Management software
WS(LAN I/F card Login connection)	LAN Interface card
WS(Telnet connection)	
WS(SSH connection)	LAN Interface card

［操作手順］

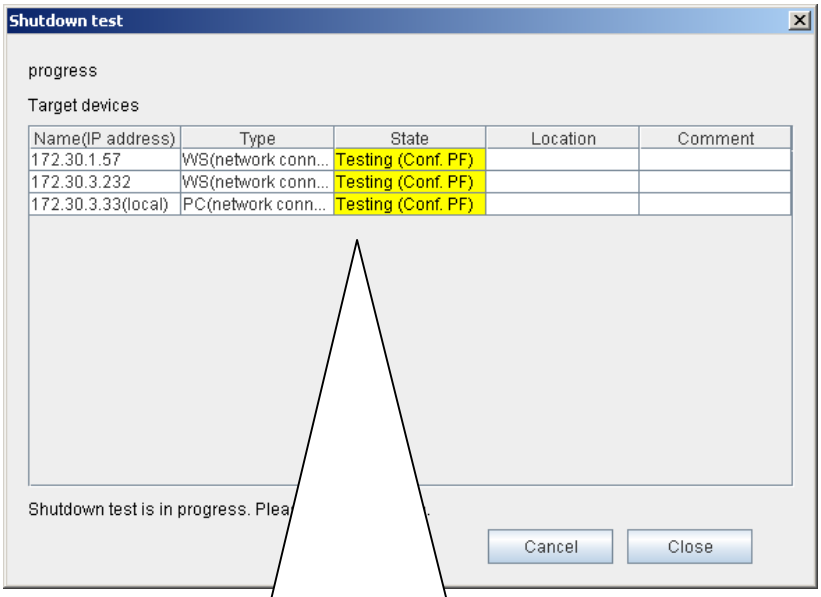
① Select "Settings"－ "Detail setting" from the menu of System state screen.

② Select "Tool" － "Shutdown test" from the menu of Settings screen, to display Shutdown test screen.



③ Click [Execute] button after the target devices.

④ When running Shutdown test, it is a following screen. When click the "Cancel" button, it will be able to stop.



Device conditions in shutdown test are as follows.

Display	Description
Testing(Conf. PF)	Checking power failure
Testing(Wait. SD)	Shutdown delaying
Testing(Exec. SD)	Shutdown executing
Testing(Conf. SD)	Shutdown testing
Result(Success)	Shutdown test successed
Result(Failure)	Shutdown test failed
Result(Cancel)	Shutdown test canceled

About the results of shutdown test.
"Result(Success)" and "Result(Failure)" after shutdown test execution is judged by monitoring whether there is Network connection with the target device of a definite period of time.
If immediately start device after shutdown, test resuts may be "Result (Failure)" .

<Shutdown test restrction>

(1) Shutdown test can not be started depending on the UPS condition. When it happens, [Shutdown test can not be started. (Error code: NN)] Message will be displayed. NN parts are actual error codes.

No.	Error code	Element
①	20	Shutdown test, mail sending test or WS script test are in execution.
②	21	Shutdown sequence is in execution due to occurrence of an unrecoverable damaged event such as a schedule abort.
③	22	Inside serial communication error.
④	23	Power failure.
⑤	25	Serious failure.
⑥	26	Overload.
⑦	27	All of devices selected in shutdown test are correspond as any follow articles and there is no available device for test. ・ Output from the outlet on the UPS that the devices are connected is off. ・ The device stops. ・ When "Power failure" is selected as the executing-sequence in shutdown test, the load devices are not connected to the outlet that is specified as shutdown trigger at the power failure. (Refer to 6.9 "Configuring Time Settings Related to Shutdown Operations")

(2) Shutdown test will be canceled forcibly, if any of (1)② to ⑥ condition occurs during shutdown test executing.

(3) E-mail notification, SNMP trap notification or UPS output control are not executed on the shutdown test.

(4) When the device type is "PC(LAN I/F card contact connection)", shutdown can not be executed. Therefore, after sending the shutdown signal, "Result(Success)" is displayed regardless of startup status of the devices. Verify whether shutdown was executed by checking the actual devices.

(5) When the device type is "WS(LAN I/F card Login connection)", shutdown can not be executed. Therefore, when the script process is finished normally, "Result(Success)" is displayed regardless of startup status of the devices. Verify whether shutdown was executed by checking the actual devices.

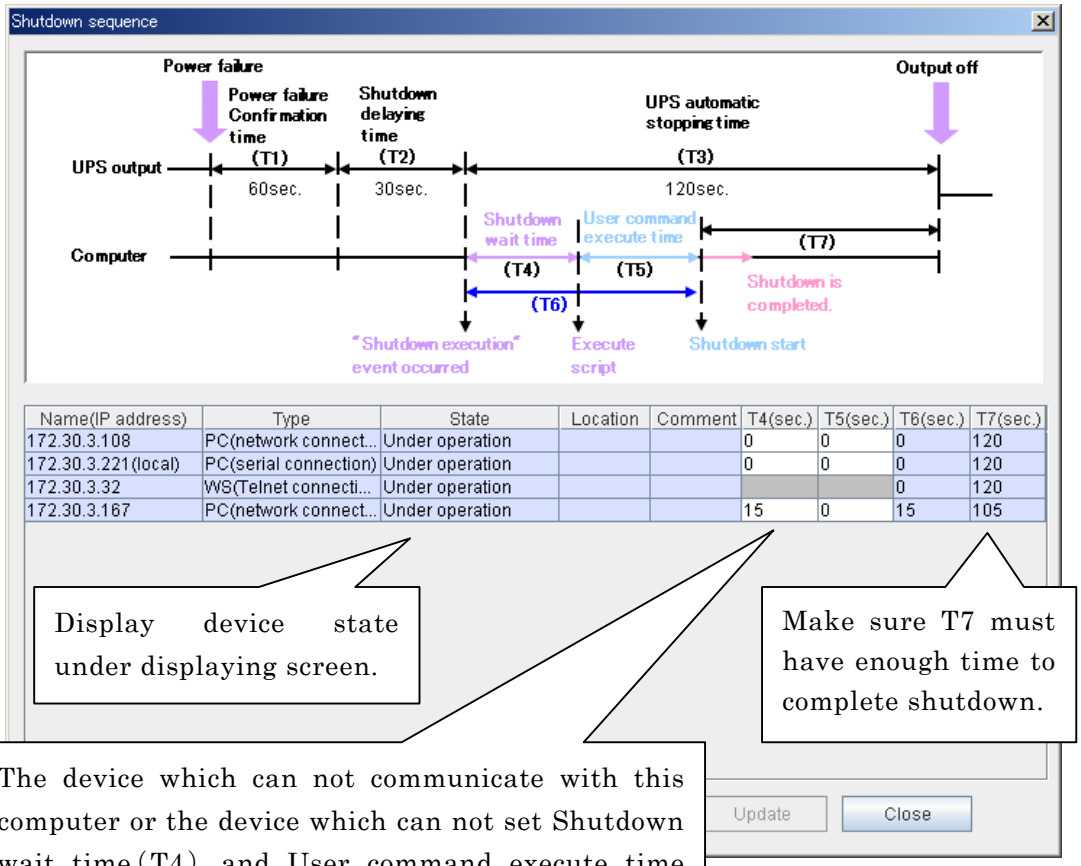
6.43 Confirm shutdown sequence of connected device.

This section can confirm shutdown starting order for SANUPS SOFTWARE of server/client composition or LAN interface card composition, and also can set shutdown wait time and user command execute time of each devices.

[Operation order]

① Select "Settings"-"Detail setting" from the menu of Syatem state screen to display Settings screen.

② Select "Tool"-"Shutdown sequence" from the menu of Settings screen to display Shutdown sequence screen.



Display device state under displaying screen.

Make sure T7 must have enough time to complete shutdown.

The device which can not communicate with this computer or the device which can not set Shutdown wait time (T4) and User command execute time (T5) (which is Telnet connected device) display grayish to show entering is not available.

③ Click T4 or T5 cell of the target device to change setting at shutdown sequence screen, enter numerical value directly and push the ENTER key. (If entered numerical value is wrong, put back to original value automatically.)
After changed T4 and T5 of each device, click update button.
Conclude the operation.

6.44 Shutdown setting of a system made power redundancy

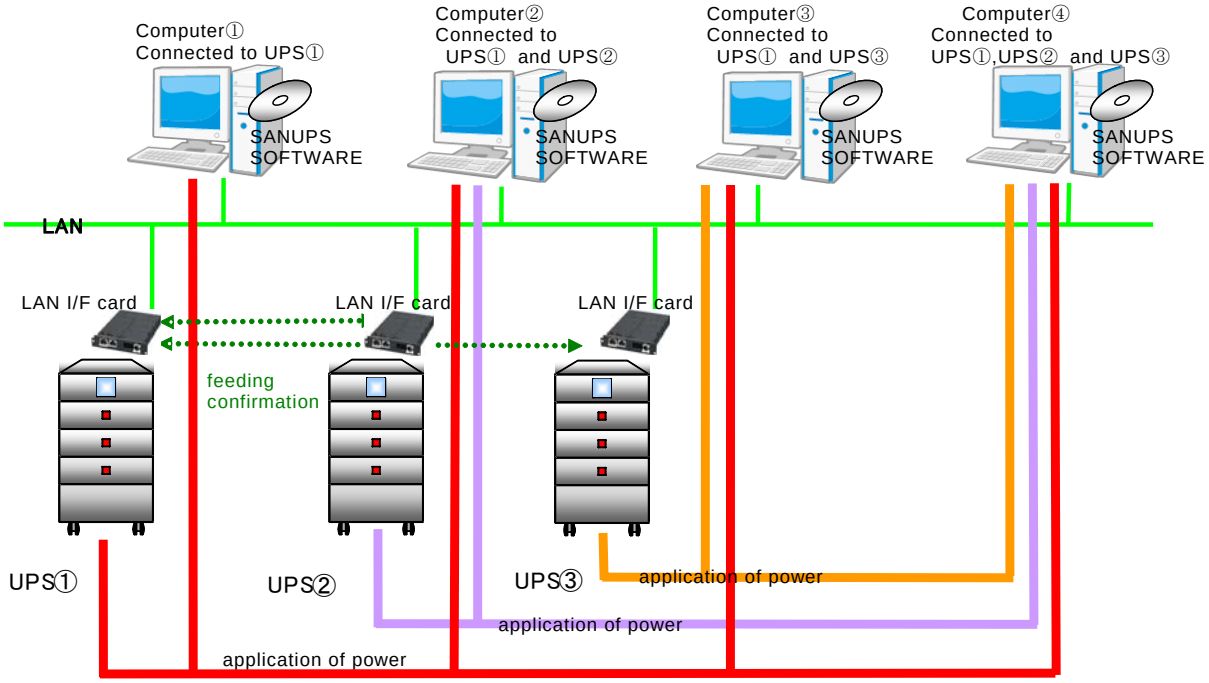
Make multiple UPS group and support power supply for power redundant system. Computer is power managed by “UPS counts” which is necessary to supply powers, and cover power failure by shutdown when UPS counts get not to be enough by power failure.

Using LAN interface card which support “UPS linkage function” is required to use this function.

(1) Description of UPS linkage function

Explain an example of power redundant system composition which linkages multiple UPS.

＜Configuration example＞

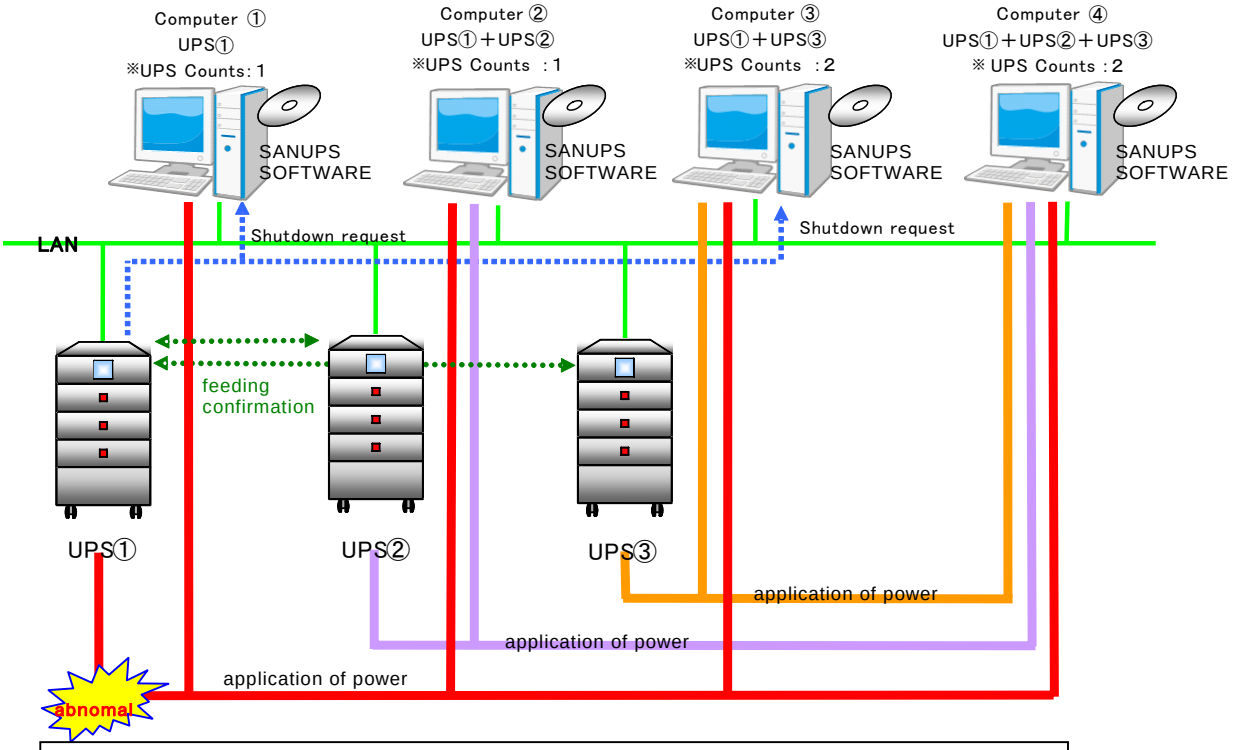


Explanation of above image

*UPS①~③ are installed LAN interface card and connected to the Network.
*Computer①~④ are connected to the same network as UPS①~③.
*Computer①~④ are installed SANUPS SOFTWARE.
*Computer① is power supplied from UPS①.
*Computer② is power supplied from UPS① and UPS②.
*Computer③ is power supplied from UPS① and UPS③.
*Computer① is power supplied from UPS①～③.

Shutdown setting of a system made power redundancy

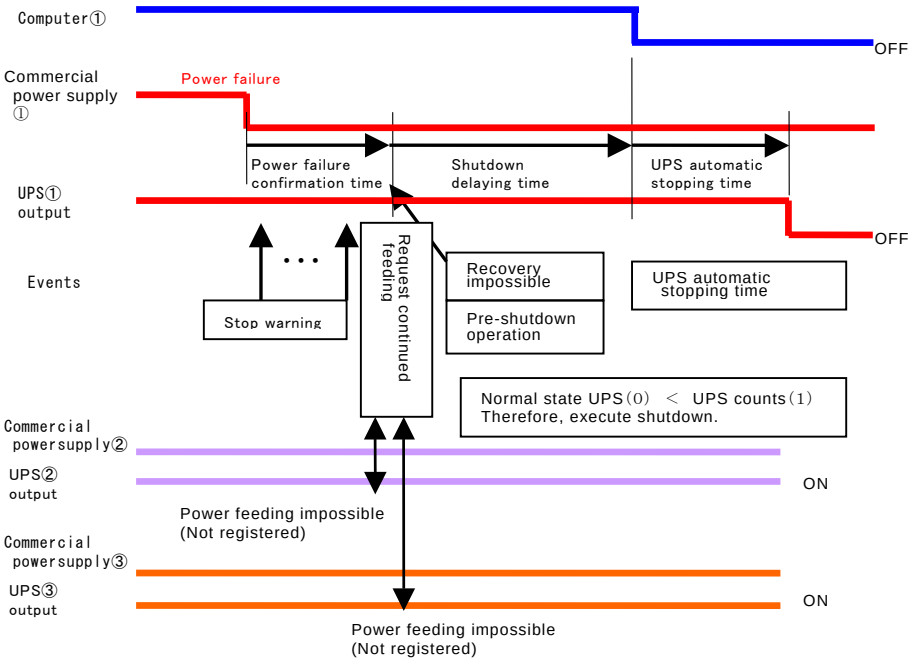
＜Sequence of event of a power failure＞



[UPS count]
The "number of UPS necessary" is the number of UPS that when the power failure, such as a power failure occurs, the power supply is normally required for the computer to continue to operate. Computer is shut down is less than that of a normal-powered UPS has set.

①Operation sequence of the computer

[UPS counts：1]
Computer① will be shutdown by UPS①, but is not connected to UPS② and UPS③.

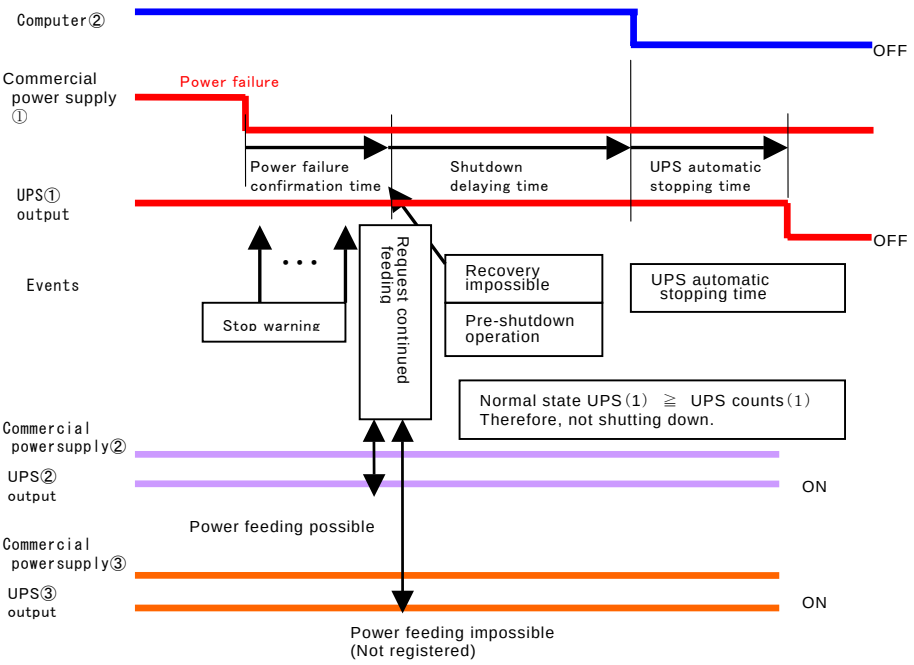


Shutdown setting of a system made power redundancy

②Operation sequence of the computer

[UPS counts:1]

Computer② will keep operating by back up of UPS②.

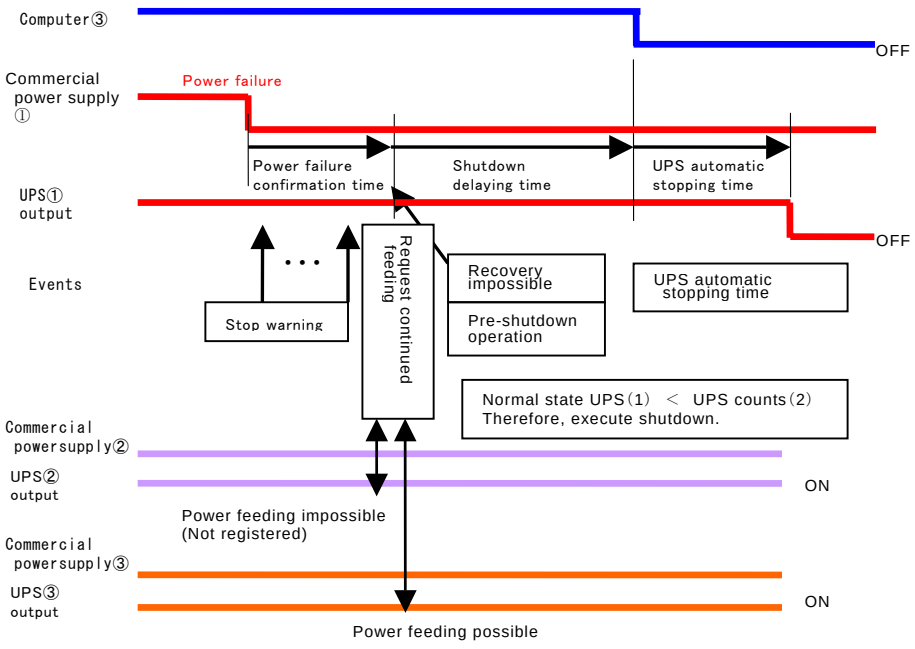


※If UPS① is connected to shutdown target device which besides computer②, shutdown execution of those devices will be done

③Operation sequence of the computer

[UPS counts:2]

UPS③ is normally operated so it is available to backup computer③, but computer③ will be shutdown because UPS counts which can be power supplied becomes less than setting value by setting of "UPS counts" is as "2".

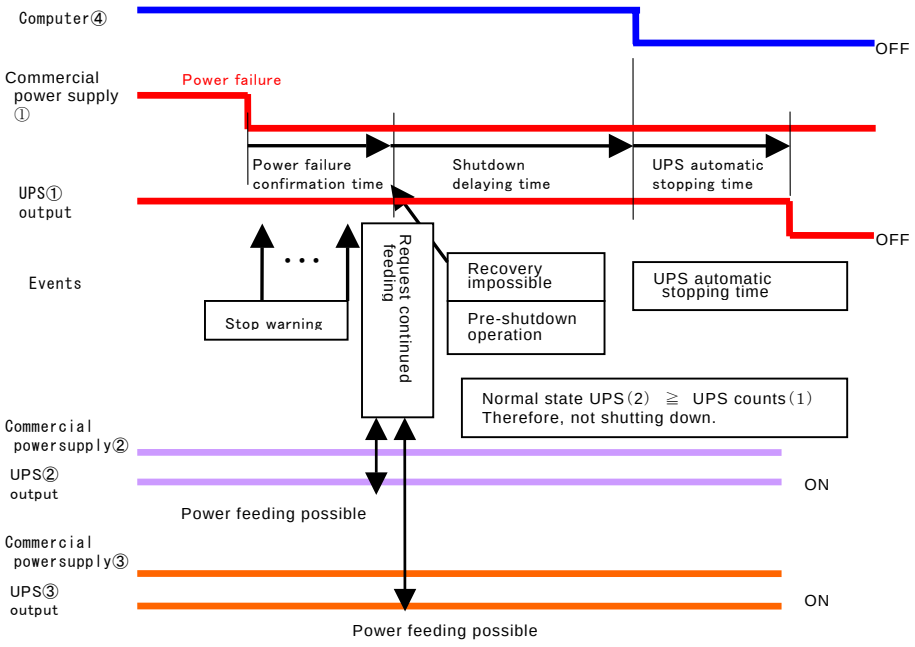


If UPS① is connected to shutdown target device which besides computer③, shutdown execution of those device will also be done.

④Operation sequence of the computer

[UPS counts:2]

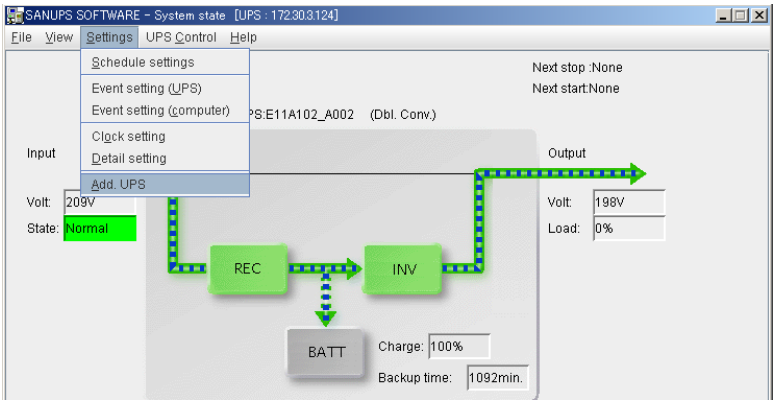
UPS① will stop, but computer④ will keep operating by backup of UPS ② and UPS③. Computer④ will not be shutdown because there are two UPS which can be power supplied, against "UPS counts" setting is as "2".



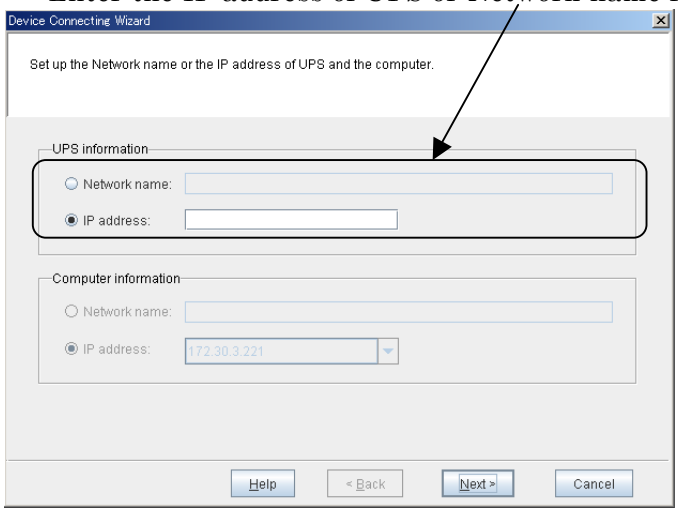
※If UPS① is connected to shutdown target device besides computer②, that device will be shutdown.

(2) Additional registration of UPS that will be power redundant.
Additional registration UPS which supplies computer power.

[Operation order]
①Select “Settings”-“Add. UPS” from the menu of system state screen.



②Device connecting Wizard screen will be shown.
Enter the IP address of UPS or Network name from this screen.



By selecting “Next” button, UPS Administrator Account screen will be shown.
After entering account, setting wizard screen to register this computer to UPS will be shown. By following wizard screen, this computer will be registered to this UPS.

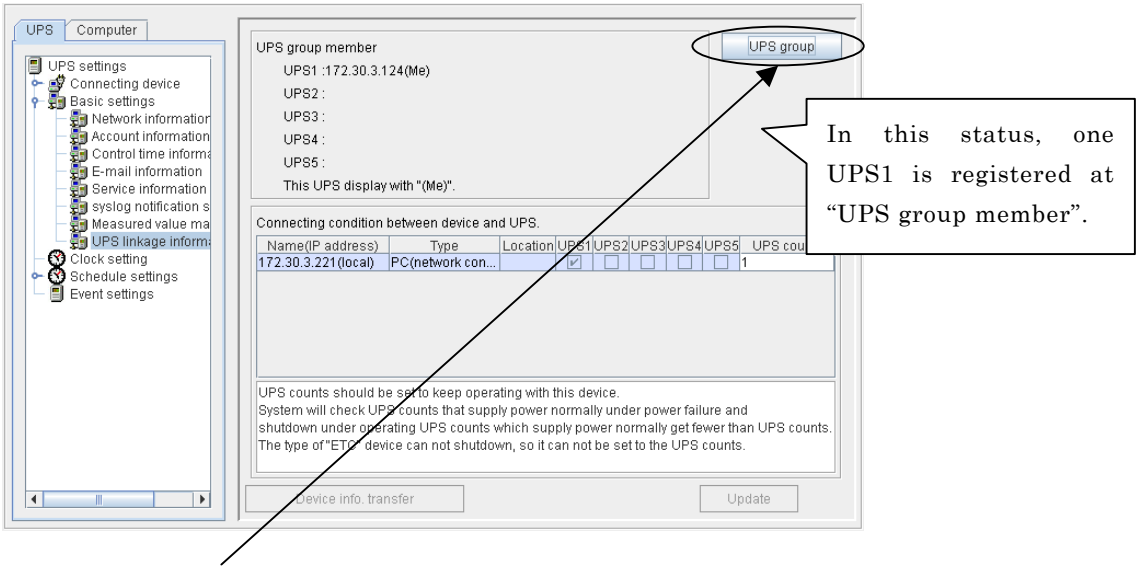
"Add. UPS" operation is able to device register this **SANUPS SOFTWARE** to multiple UPS (LAN interface card).
(UPS linkage function is available to device register to maximum 5 UPS.

"UPS group" registration of UPS to be power redundant.

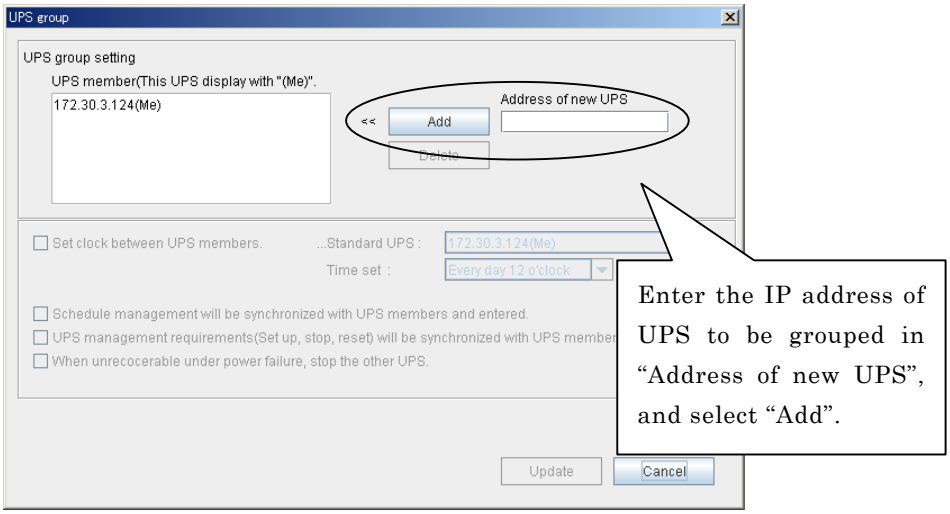
(3) UPS group

①Add UPS to be grouped.

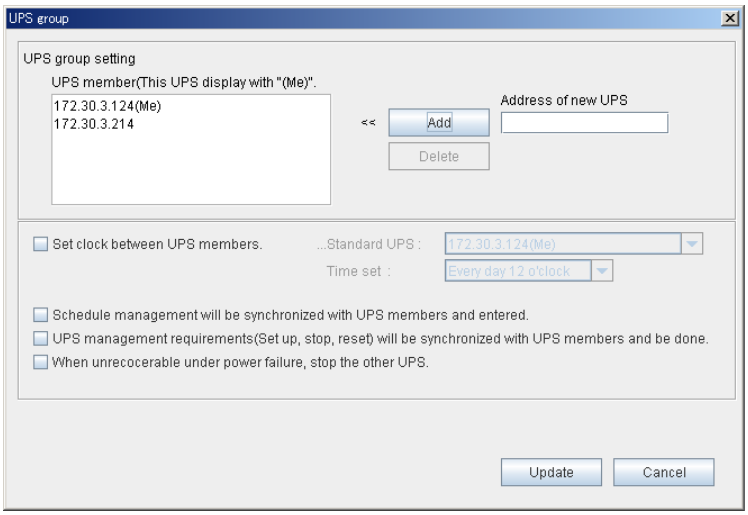
Select "Basic settings"-"UPS linkage information" from settings screen.



Select "UPS group" button.

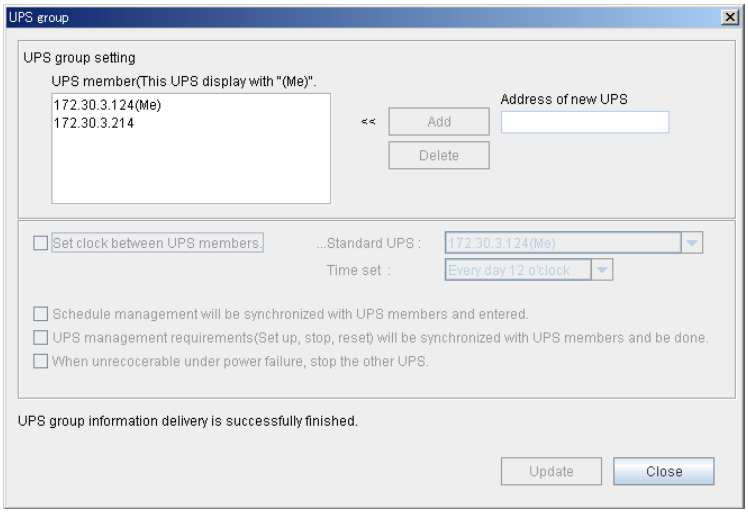


Shutdown setting of a system made power redundancy



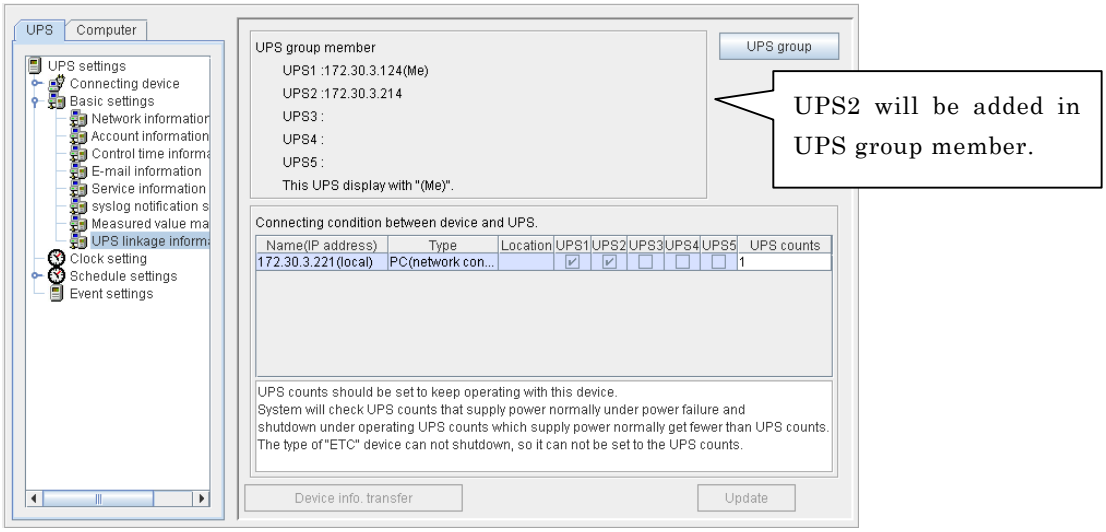
Set operation condition when to be grouped, and select “Update” button.

Screen name	Description
Set clock between UPS members.	Check to match the time between UPS members.
Standard UPS	Select UPS to be reference, to match the time.
Time set	Select when match the time.
Schedule management will be synchronized with UPS members and entered.	Check to synchronize schedule operation between UPS group members when schedule is set in the UPS. If different schedule are set from UPS members, each schedule which is set in UPS will be executed.
UPS management requirements (Set up, stop, reset) will be synchronized with UPS members and be done.	Check to operate every UPS of UPS group member, under executing UPS management (set up, stop, reset).
When unrecocerable under power failure, stop the other UPS.	Check to stop every UPS of UPS group members, under power failure.

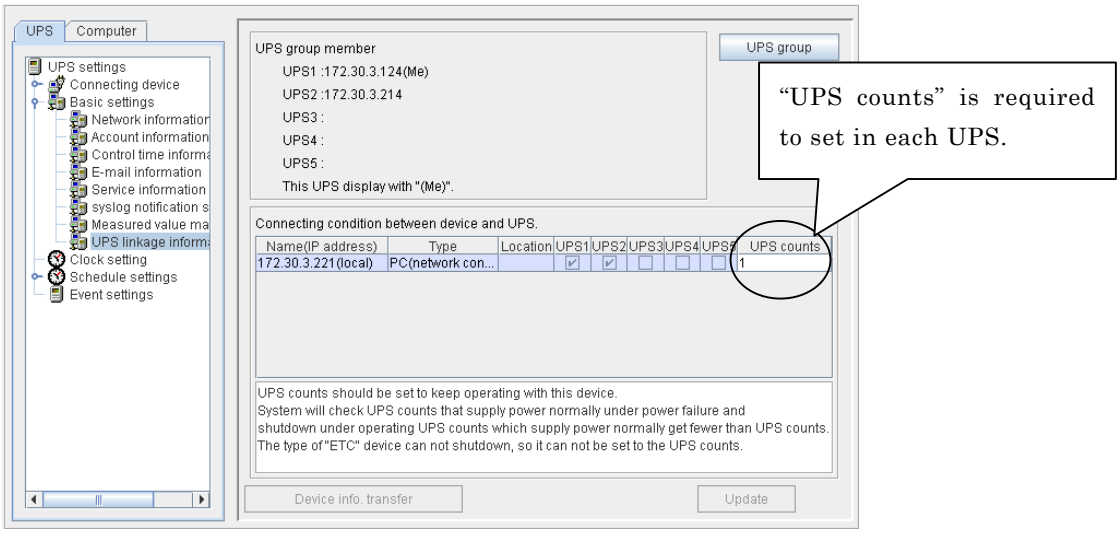


If added UPS group setting is normally done, “UPS group information delivery is successfully finished.” message will be shown.

Select “Close” button.

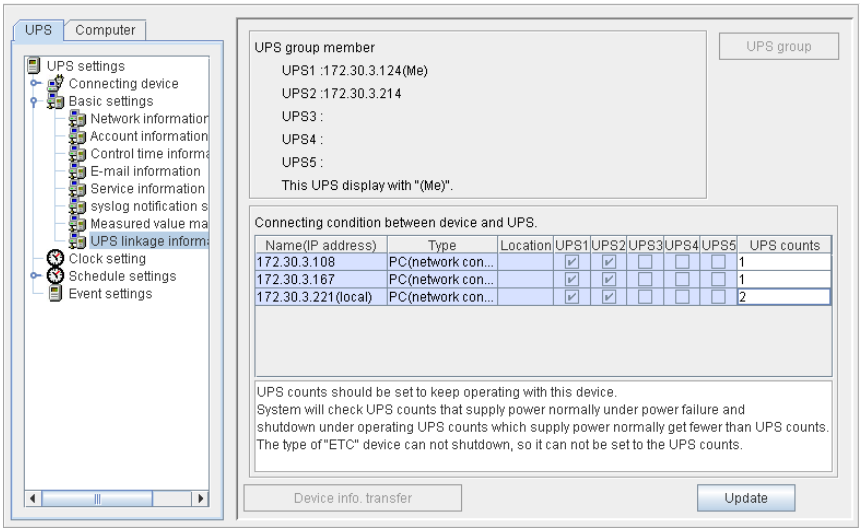


② Set “UPS counts”



In the above screen, "UPS counts" is “1” to the UPS group member counts “2”.
Under "UPS counts" is as “1”, if one of two UPS supplies power, shutdown execution will not be done by this setting.
Under "UPS counts" is as “2”, if power error occurs in one of two UPS, shutdown execution will be done by this setting.
"UPS counts" are available to set the value of 1 to UPS member group counts.

By the following screen, "UPS counts" is set as “2” in the “172.30.3.221” computer. Under this setting, if power error occurs in one of two UPS, shutdown execution will be done for “172.30.3.221” computer only.



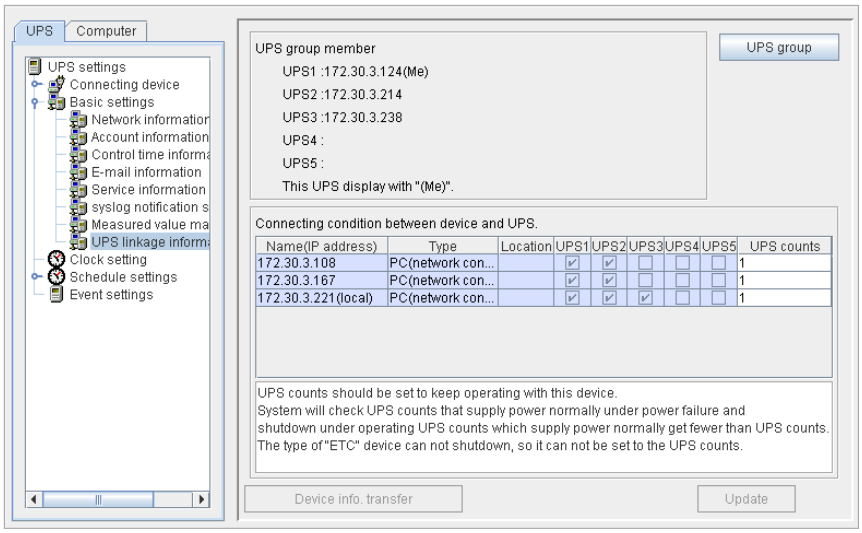
“UPS counts” is available to set as each UPS, so setting is available to follow each system composition.

By set “UPS counts” to be synchronized with other UPS, if power error occurs either UPS, same operation (shutdown execution by UPS counts) will be executed.

Shutdown setting of a system made power redundancy

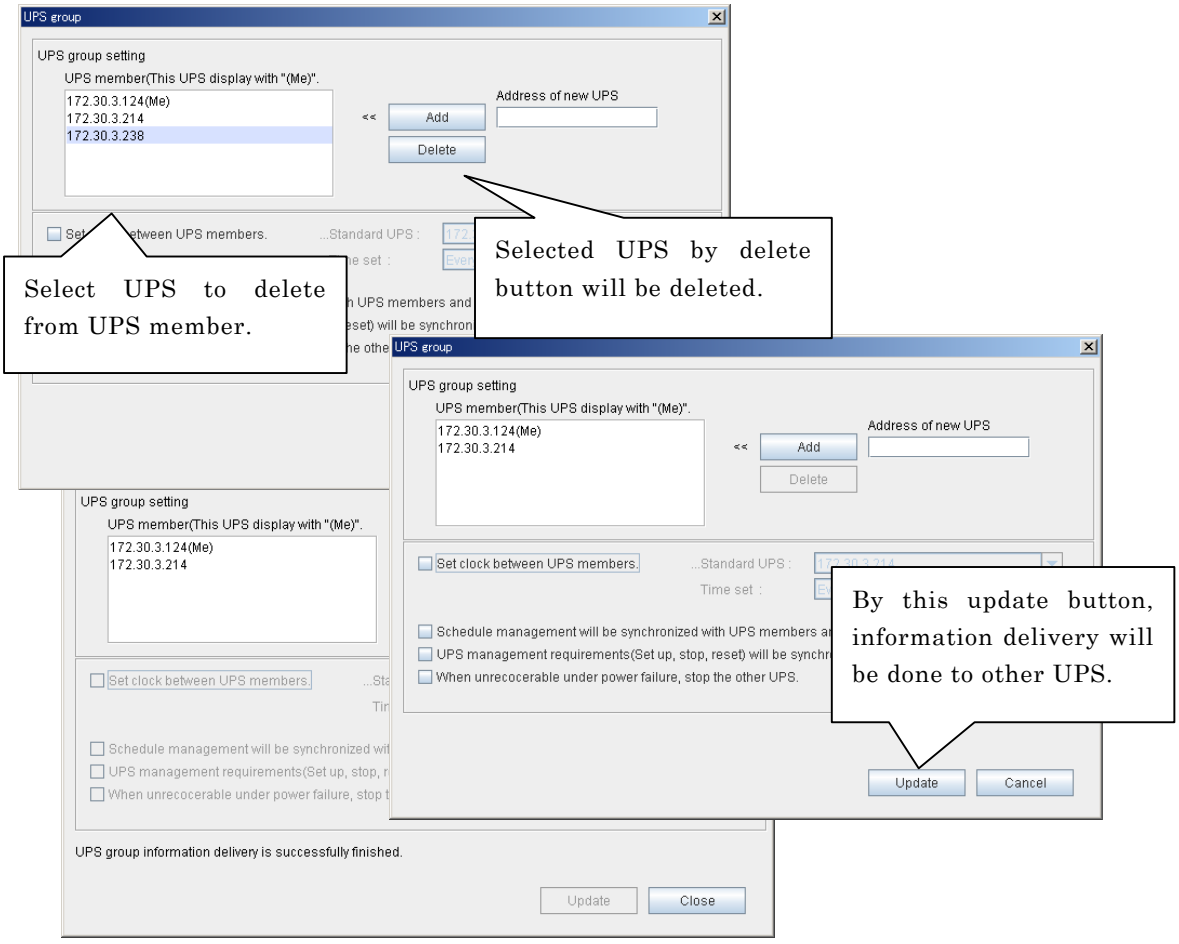
［Releasing of UPS group］

Releasing UPS group is available when multiple UPS are grouped and be used.

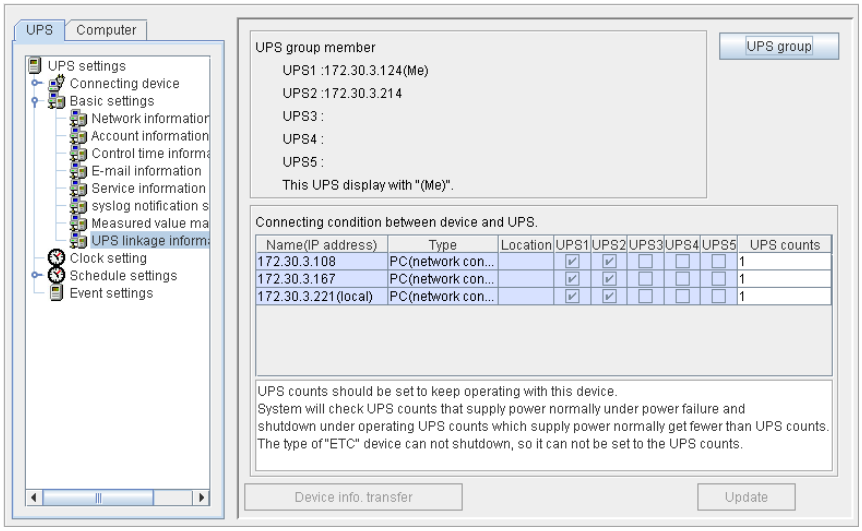


The above screen is grouped three UPS which are “172.30.3.124”, “172.30.3.214” and “172.30.3.238”. Then release grouping of UPS3 “172.30.3.238” in this screen.

Select “UPS group” button.　“UPS group” screen will be shown.



Shutdown setting of a system made power redundancy



After information deliver to other UPS is done, UPS3 will be released from grouping.

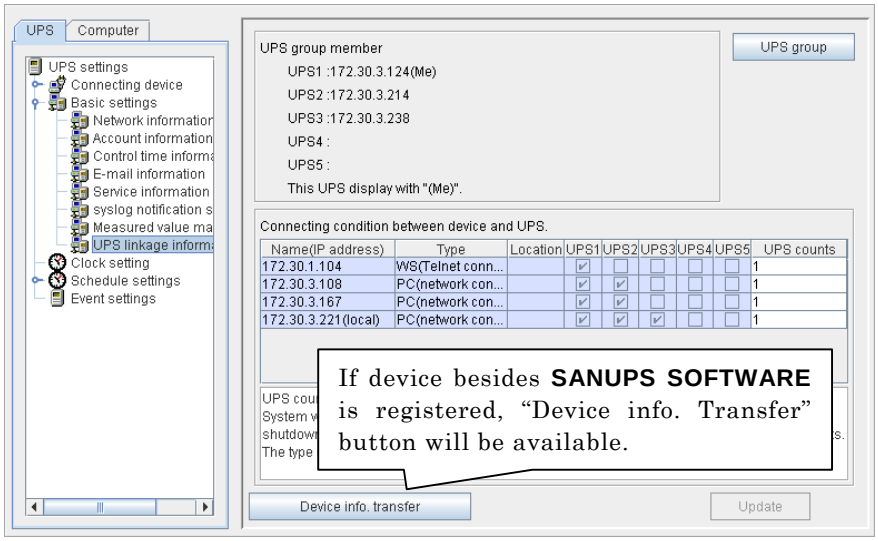
Shutdown setting of a system made power redundancy

[Register operation of device besides **SANUPS SOFTWARE**]

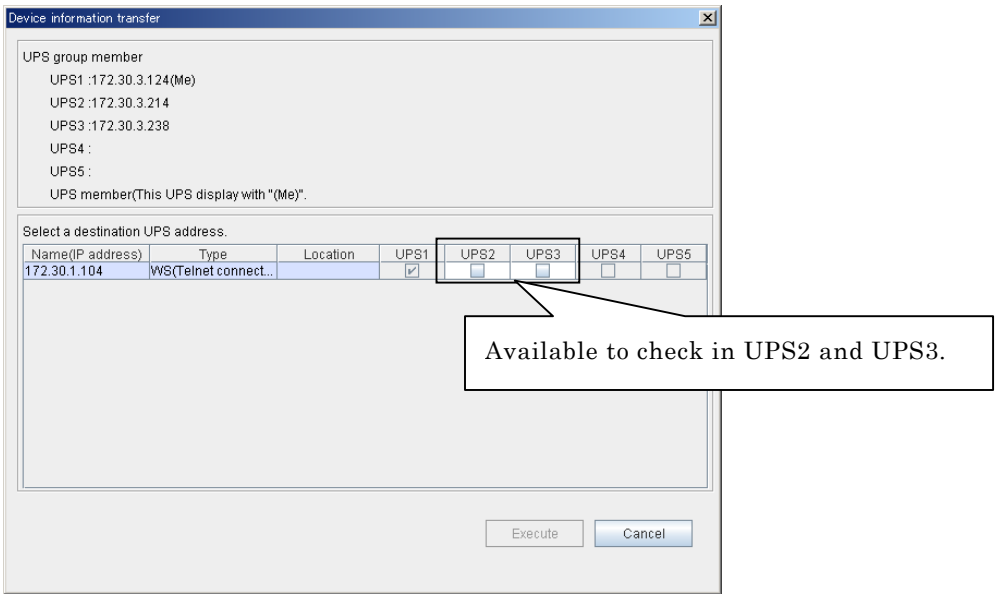
When additional registration of device which is not using SANUPS SOFTWARE (like WS "Telnet" connection), transfer registered information to other UPS (LAN interface card) is available by using "Device info. transfer" function.
By transfer information, Login Script information and Event Script information will transfer to other UPS, UPS which is forwarding address (LAN interface card) is not required to reset Login Script information or Event Script information for relevant device.

Setting method

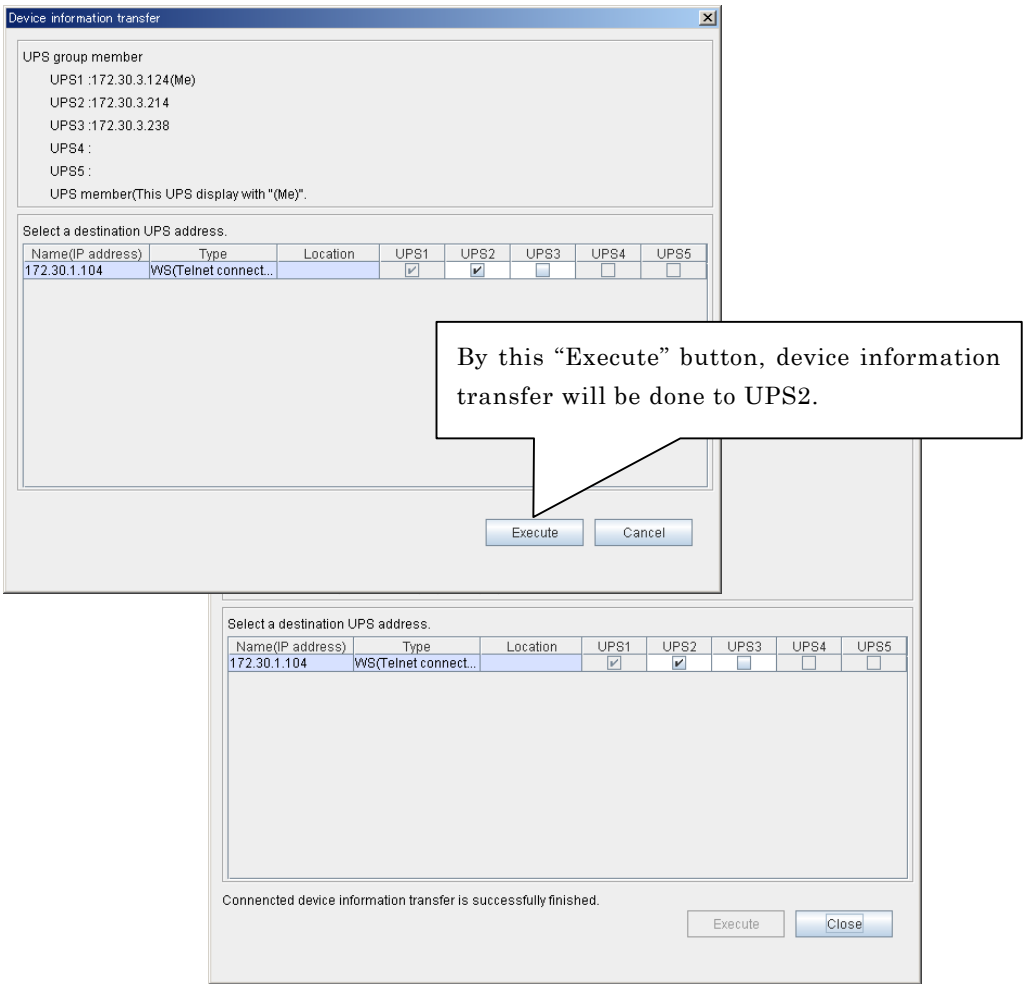
①Register "WS (Telnet connection)" device from **SANUPS SOFTWARE** which connects to UPS1 "172.30.3.124" and open "UPS linkage information" screen. (The following screen is "UPS linkage information" screen of UPS1 "172.30.3.124".)

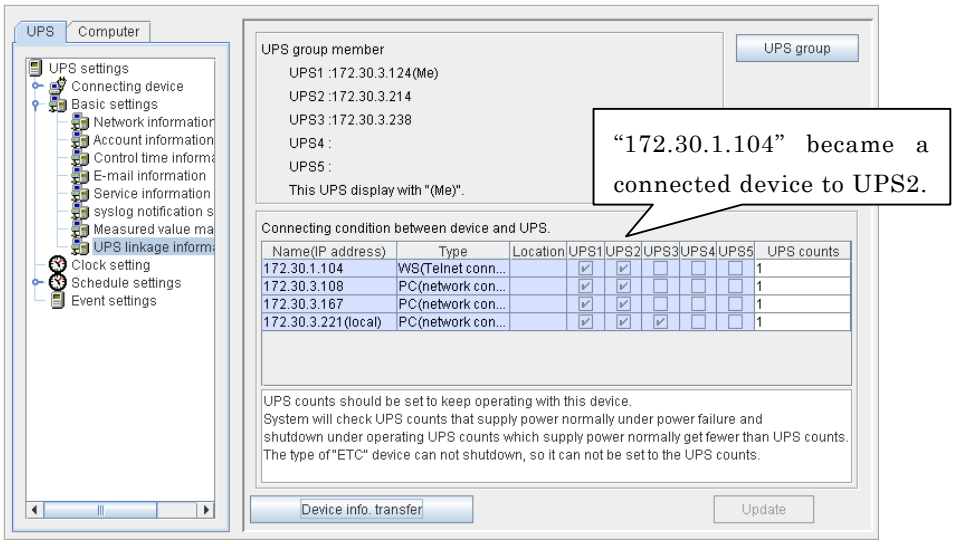


②By click "Device information transfer" button, this following screen will be shown.



③ Select the forwarding address and execute device information transfer.



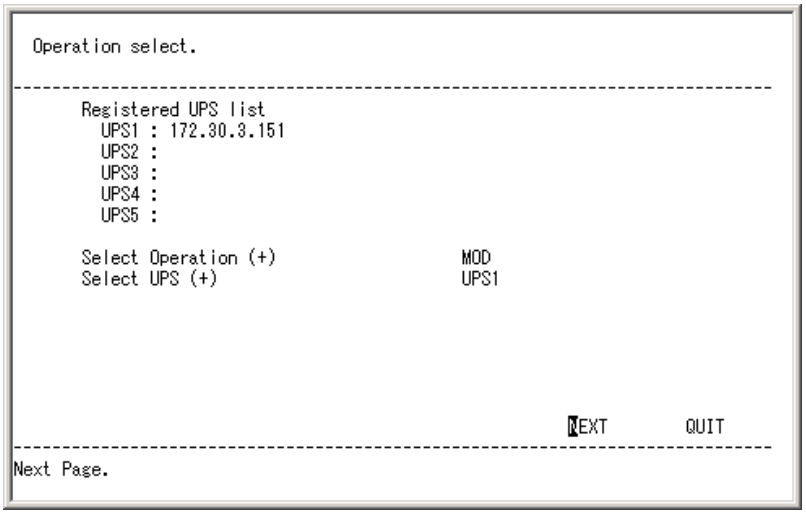


Details for added device by using device information transfer function.
Device register to other UPS (LAN interface card) will be available by “Device info. Transfer” function.
However, changing device information (Login Script etc) after registered, it will not refrain automatically to other device which is registered in other UPS.
If changing information, please execute “Device info. Transfer” and synchronize device information.

[Linkage setting from CUI tool]

Additional registration of own computer to new UPS is available by using "./sg4setup" command.
(Delete and edit UPS is also available.)

The follow screen will be shown by using "./sg4setup" command.



Status	Description
Registered UPS list	Show registered UPS list. (Maximum 5)
Select Operation	Select operation.
MOD	Edit information of registered UPS and own device. Select from "Select UPS" for changing UPS.
ADD	Additional registration of own device to new UPS.
DEL	Delete selected UPS from "Select UPS".
Select UPS	Select UPS to operate from "Select Operation".

Select operation from "Select Operation" and if it is as "MOD" or "DEL", select target UPS from "Select UPS".
Next screen will be shown by selecting "NEXT".
Operation will be complete by following shown screen.

<Details for UPS grouping>
UPS group setting is not available from CUI tool.
To be group, please use GUI tool or access to LAN interface card by Web browser.

Appendix A　Operation of the service

Following is the explanation on procedure for operating **SANUPS SOFTWARE** UPS service (daemon process).
Following is the only method to stop and start the service (daemon process) manually.
Other methods for stopping and starting (such as by using the kill command) are not supported.

In case of Windows

Display **[Service]** according to the procedures of the using OS.

Example) For **Windows Server 2008**

Click [Start] button－[Control tool]－[Sever manager]－[Configuration]－[Service]

・Select [**SANUPS SOFTWARE** UPS service], and then stop or start the service program from right click menus.

・Otherwise, stop or start the service program using [General] or [Service status] function in [Properties].

＜Information＞
When using **Windows Server 2008 Server Core**, execute the following command in order to stop or start **[SANUPS SOFTWARE UPS service]** using command line.

net start SGSVC　・・・ Start
net stop SGSVC　・・・ Stop

In case of Linux

Stopping SANUPS SOFTWARE UPS service (daemon process)

Conduct:

 # cd /etc/init.d

 # ./sg4lite stop

Otherwise, make the above sentence in one line and conduct:

 # /etc/init.d/sg4lite stop

Starting SANUPS SOFTWARE UPS service (daemon process)

Conduct:

 # cd /etc/init.d

 # ./sg4lite start

Otherwise, make the above sentence in one line and conduct:

 # /etc/init.d/sg4lite start

＜Information＞

SANUPS SOFTWARE UPS service (daemon process) uses IPC message. Thus, the maximum number (msgmni) of the message queue is dynamically changed by this script (sg4lite).

In case of Solaris

Stopping SANUPS SOFTWARE UPS service (daemon process)

Conduct:

 # su

 # cd /etc/init.d

 # ./sg4lite stop

Otherwise, make the above sentence in one line and conduct:

 # /etc/init.d/sg4lite stop

Starting SANUPS SOFTWARE UPS service (daemon process)

Conduct:

 # su

 # cd /etc/init.d

 # ./sg4lite start

Otherwise, make the above sentence in one line and conduct:

 # /etc/init.d/sg4lite start

In case of HP-UX

Stopping SANUPS SOFTWARE UPS service (daemon process)

Conduct:

 # su

 # cd /sbin/init.d

 # ./sg4lite stop

Otherwise, make the above sentence in one line and conduct:

 # /sbin/init.d/sg4lite stop

Starting SANUPS SOFTWARE UPS service (daemon process)

Conduct:

 # su

 # cd /sbin/init.d

 # ./sg4lite start

Otherwise, make the above sentence in one line and conduct:

 # /sbin/init.d/sg4lite start

In case of AIX

Stopping SANUPS SOFTWARE UPS service (daemon process)

Conduct:

 # su

 # cd ＜directory to install＞/service

 # ./sg4lite stop

Otherwise, make the above sentence in one line and conduct:

 # ＜directory to install＞/service/sg4lite stop

Starting SANUPS SOFTWARE UPS service (daemon process)

Conduct:

 # su

 # cd ＜directory to install＞/service

 # ./sg4lite start

Otherwise, make the above sentence in one line and conduct:

 # ＜directory to install＞/service/sg4lite start

Appendix B　Setting Up the SNMP Function on a Computer

Note

- The settings described in this section are necessary when you are using a UPS with a LAN interface. The explanation in this section is for setting up the SNMP function on the operating system when there is a serial connection with the UPS.
- The settings described in this section are not necessary when the computer is running the client version of **SANUPS SOFTWARE**.
- Although this section describes how to set up the SNMP service, it does not cover installation of the SNMP service. It is up to you to install the service.

Precautions when using a Firewall

A Firewall restricts packet transfer on the network in order to protect against unauthorized access to the network.
If the Firewall is enabled, use of the SNMP (udp) port needs to be permitted. Otherwise operation may be affected by the Firewall. For details, refer to the user's guide and other documentation for the operating system.

Note

- In the case of **UNIX/Linux**
  The SNMP daemons used by **SANUPS SOFTWARE** and the standard SNMP daemons of the operating system cannot exist together. If you intend to use SNMP with **SANUPS SOFTWARE**, the standard SNMP daemons of the operating system need to be stopped.

<Note> About OS corresponding to SNMP function

The OS corresponding to the SNMP function is as follows. Confirm whether the using OS is in the following OS list, then perform setup.
(OS undescribed below is not corresponding to the SNMP function.)

＜Windows＞

Windows2000、WindowsXP（x86、x64）、Windows Server 2003 （x86、x64、Itanium）
Windows Vista（x86、x64）、Windows Server 2008（x86、x64、Itanium）
Windows 7（x86、x64）、 Windows Server 2008 R2、Windows 8（x86、x64）、
Windows Server 2012

＜Linux＞

Red Hat Enterprise Linux v.3 （x86、x64）、Red Hat Enterprise Linux v.4 （x86）
Red Hat Enterprise Linux v.5 （x86）
Turbolinux 10 Server (x86)、Turbolinux 10 Server x64 Edition (x64)
SUSE Linux Enterprise Server 9、10 （x86）
MIRACLE LINUX 4.0 （x86）、MIRACLE LINUX Asianux Server 3 (x86)

＜UNIX＞

Solaris 8、9、10 （SPARC）
HP-UX 11i v1、HP-UX 11i v2 for Itanium

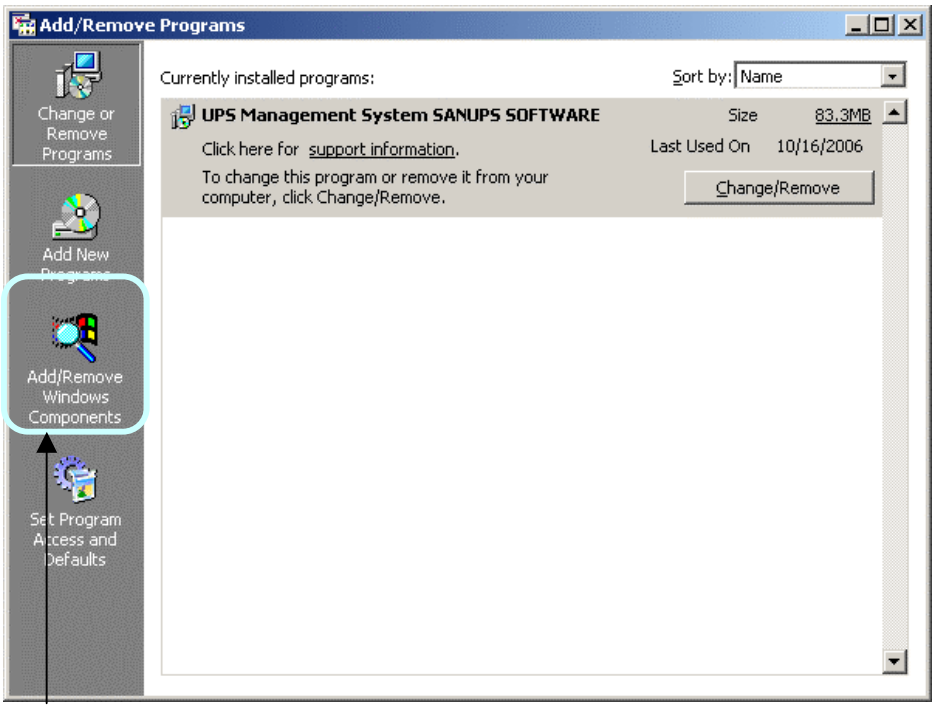
In case of Windows

[Setting when using Windows 2000, Windows XP, Windows Server 2003]

[1] Display the following screen according to the operation procedures of using OS.
- For **Windows 2000;** Select [Control panel] – [Add/Remove applications].
- For other OS; [Control panel]– [Add/Remove programs].

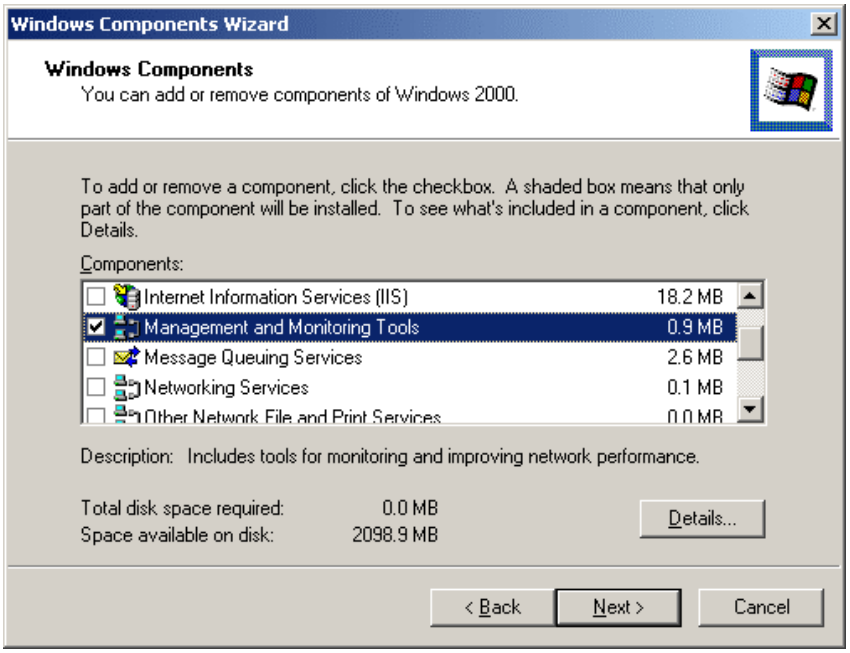
[2] Select [Add/Remove Windows Components].

* Hereafter, the screens of Windows Server 2003 are shown as the example of procedures.

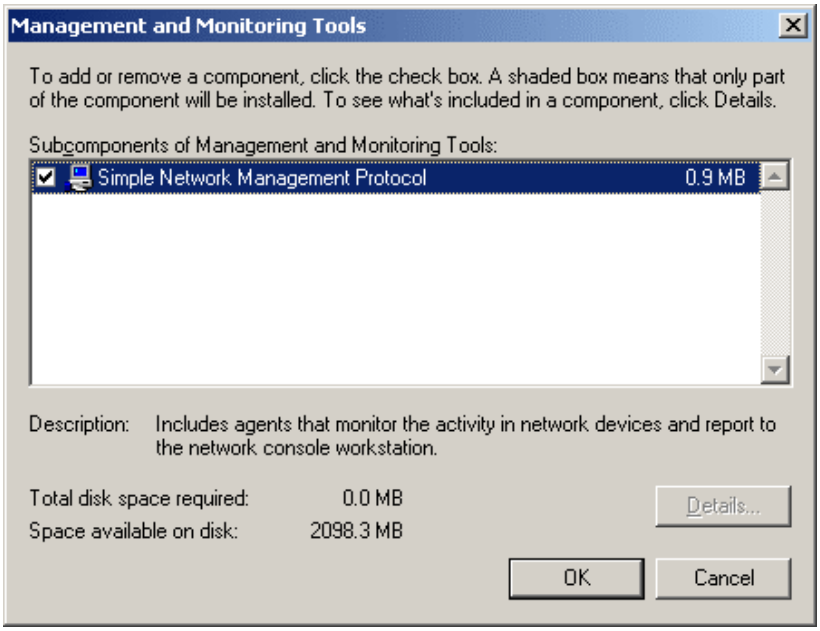


Select here “Add / Remove Windows Components”.

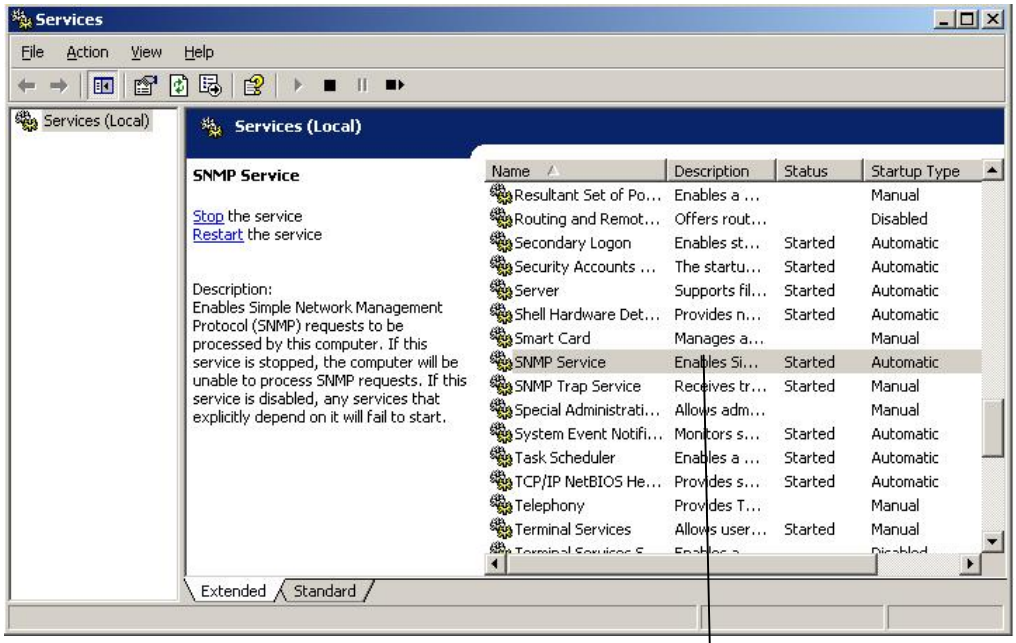
[3] Select [Management and Monitoring Tools] from [Windows Component Wizard page].



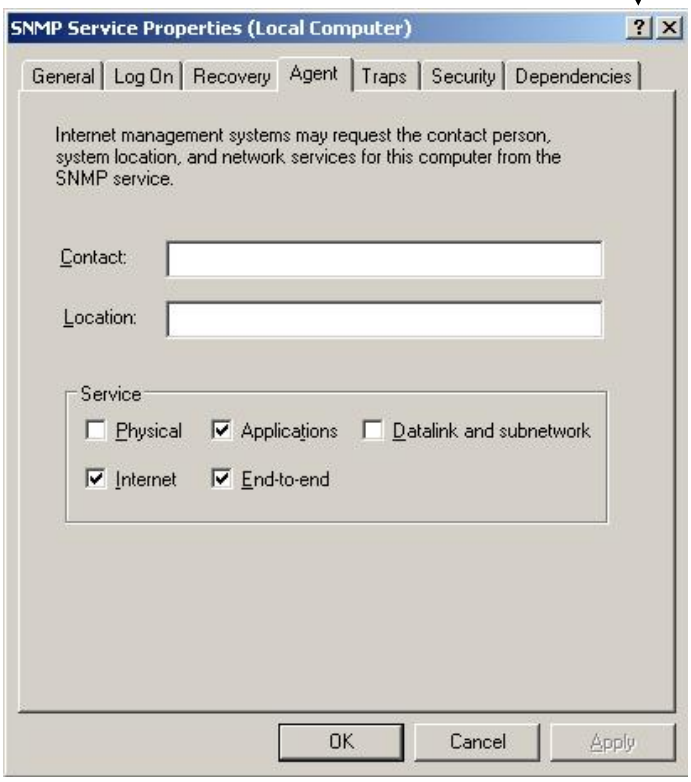
[4] Select **[Simple Network Management Protocol]** and set up according to the instruction on the page.



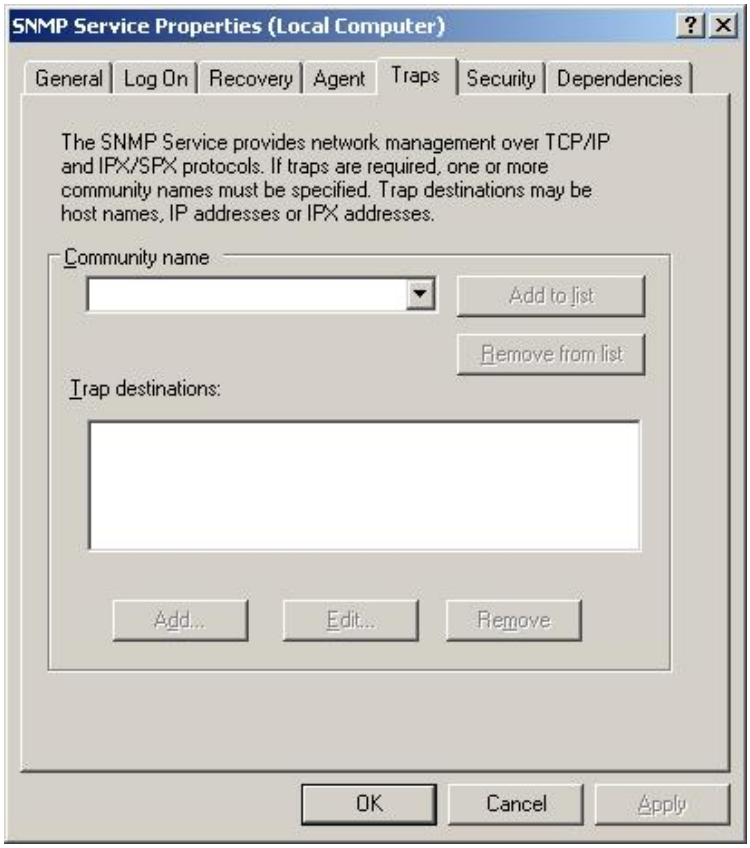
[5] Display [Service] screens according to the procedures of using OS, set the property of **[SNMP Service]**.



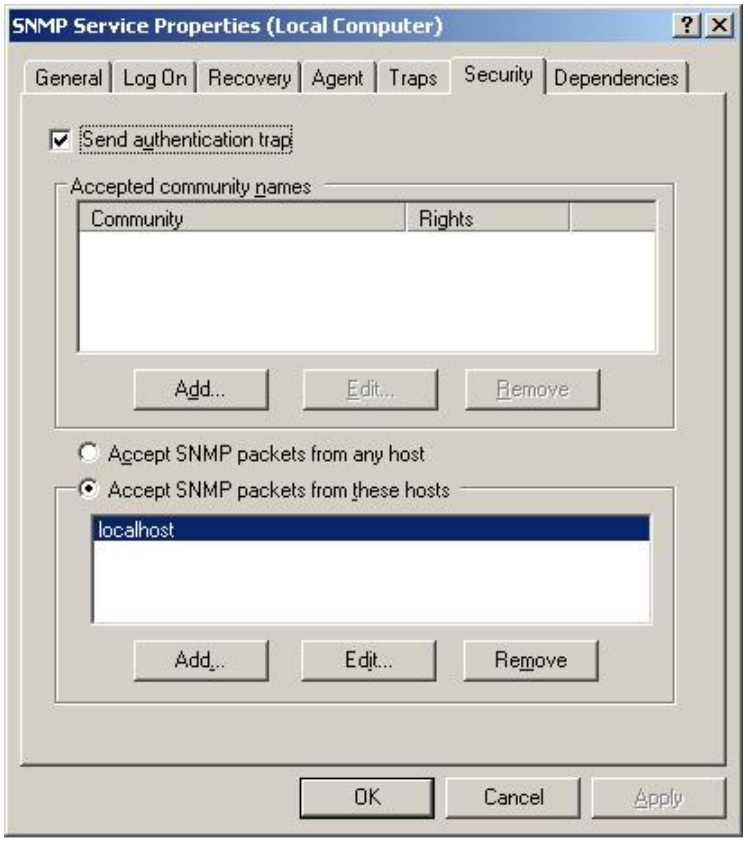
Select **[Properties].**



Enter [Contact] and [Location] if necessary.



Enter these items for Traps.



Enter these items for Security.

[6] Execute SNMP function installation program for **SANUPS SOFTWARE**.

・Login by users with administrative rights (Administrators).

・Execute "**StupSNMP.exe**" in **SANUPS SOFTWARE** installation folder.

If you execute the above program, SNMP function can be used.

<Information>

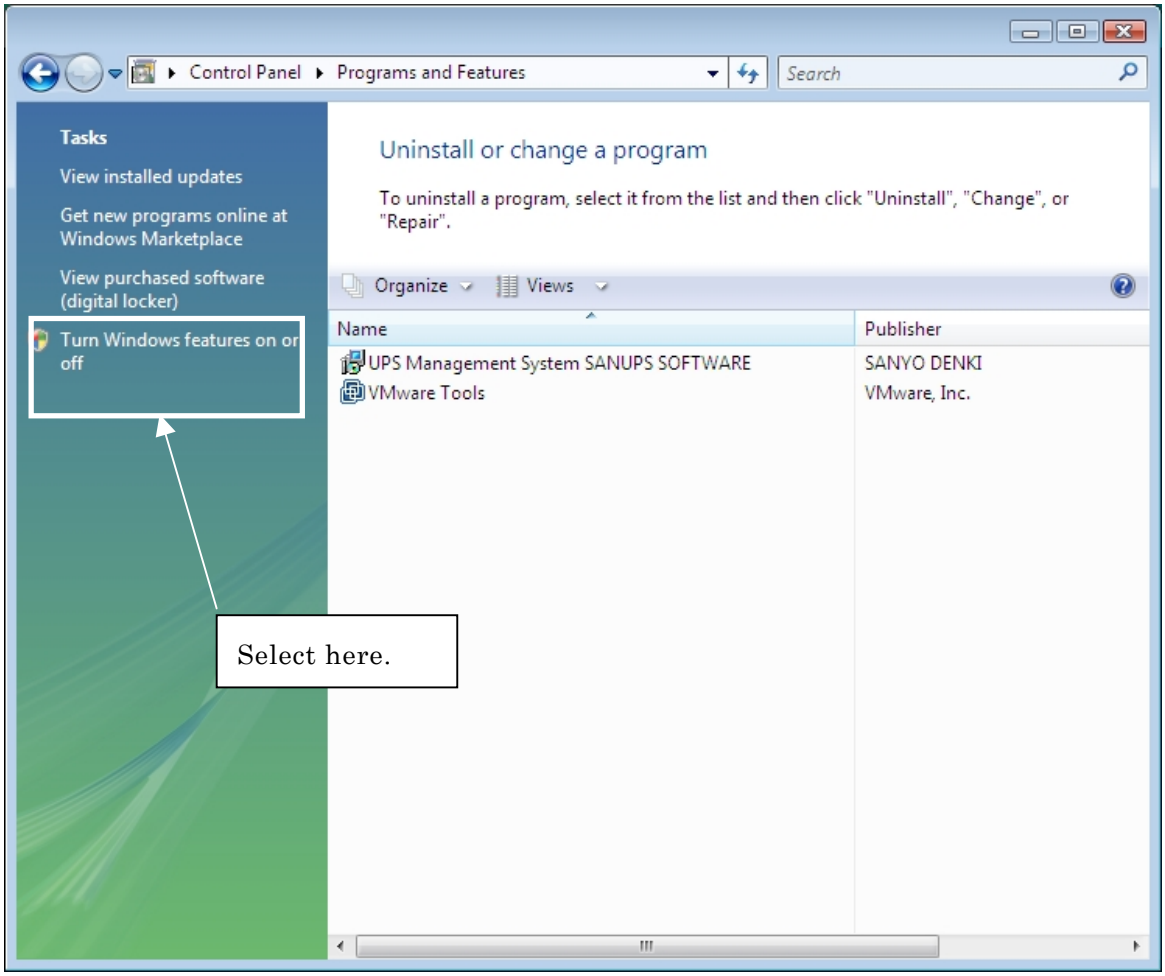
Information which is registered by **"StupSNMP.exe"** execution will be deleted at uninstallation of **SANUPS SOFTWARE**. (Restart of SNMP Service is not required after uninstallation.)

In the case to delete registered information indivisually, it will be executed by "**StupSNMP.exe /d**" from command line. (Please restart SNMP Service after delete.)

[Setting when using Windows Vista, Windows 7 or Windows 8]

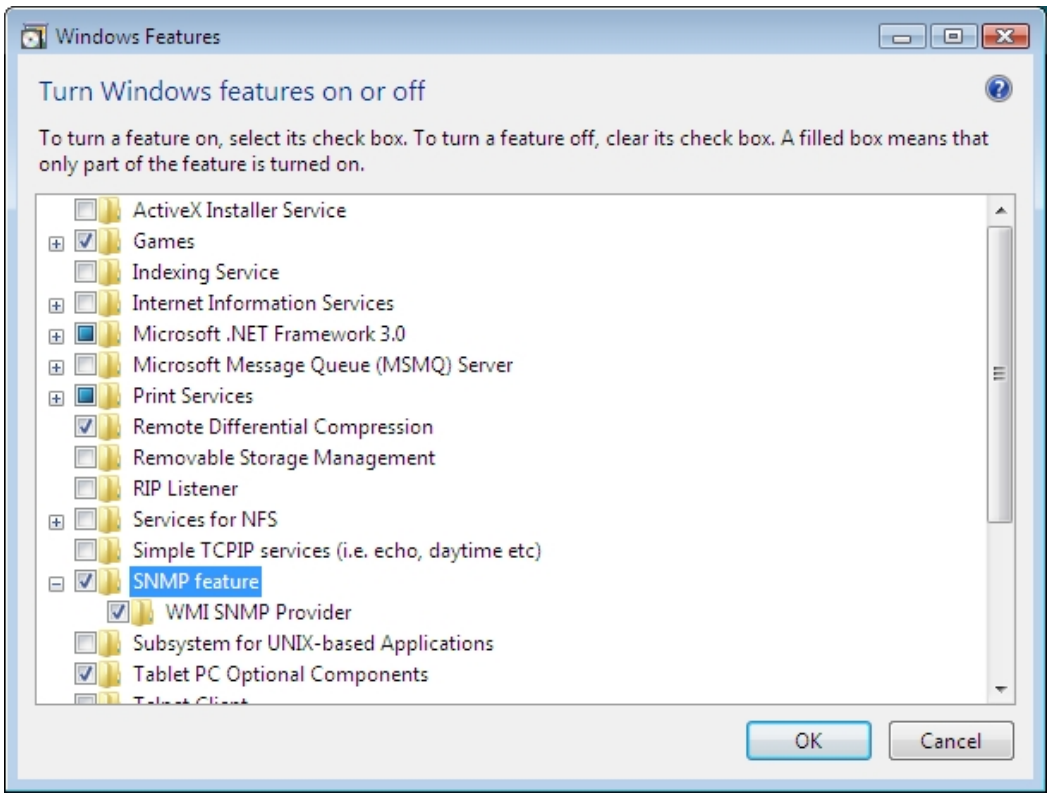
[1] Select [Control Panel] – [Programs] – [Programs and Features].

[2] Select **[Turn Windows features on or off]**.

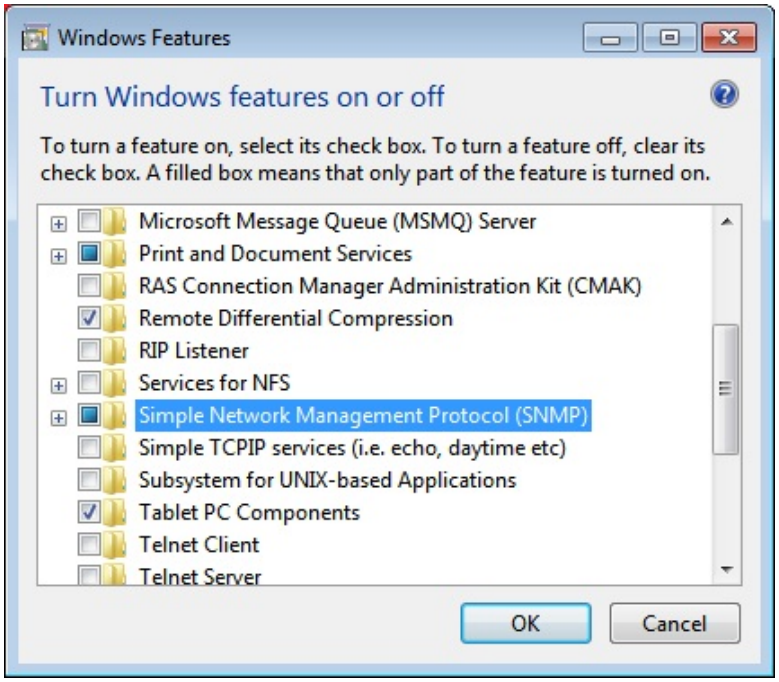


*The above figure shows Windows Vista.

[3] Set **[SNMP feature]** to on.

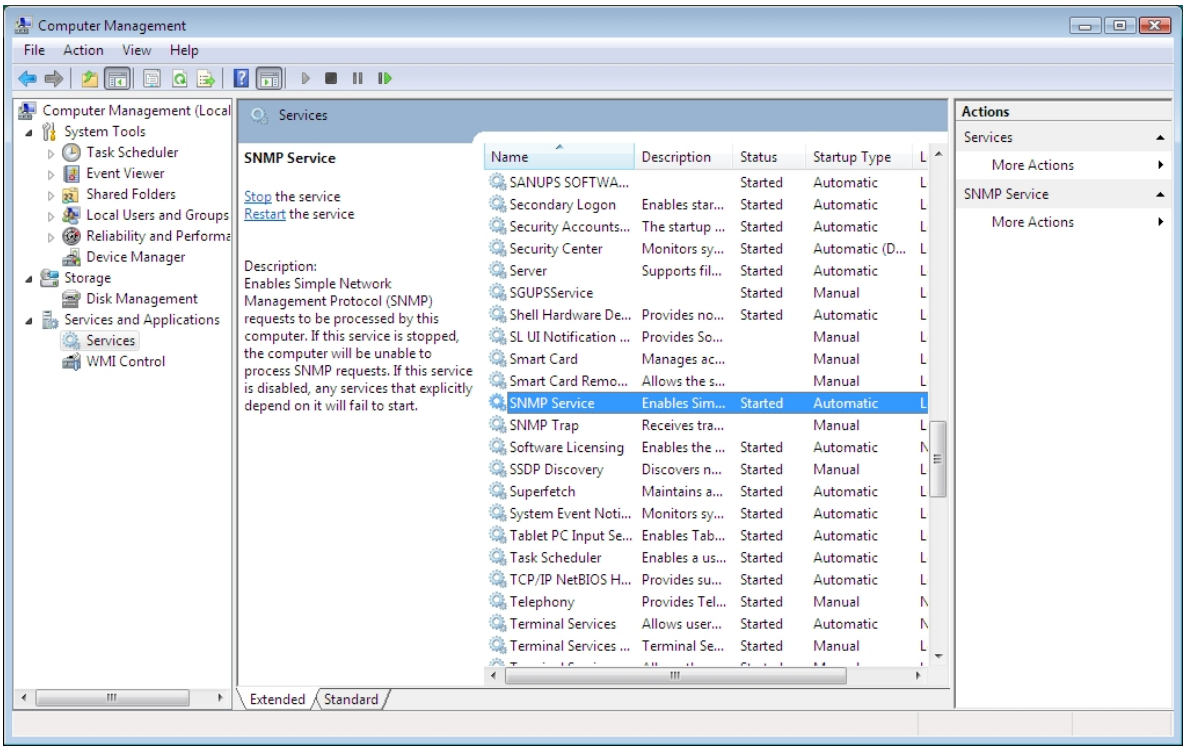


*The above figure shows Windows Vista.



*The above figure shows Windows 7.
Turn on the SNMP feature.

[4] Display [Service] screens according to the procedures of using OS, set the property of **[SNMP Service]**. (Setting procedures are same as "**Setting when using Windows 2000, Windows XP, Windows Server 2003".**)



[5] Execute SNMP function installation program for **SANUPS SOFTWARE**.

・Login by users with administrative rights (Administrators).

・Execute "**StupSNMP.exe**" in **SANUPS SOFTWARE** installation folder.

(When executing the above program, please run in "Run as administrator".)

If you execute the above program, SNMP function can be used.

<Information>

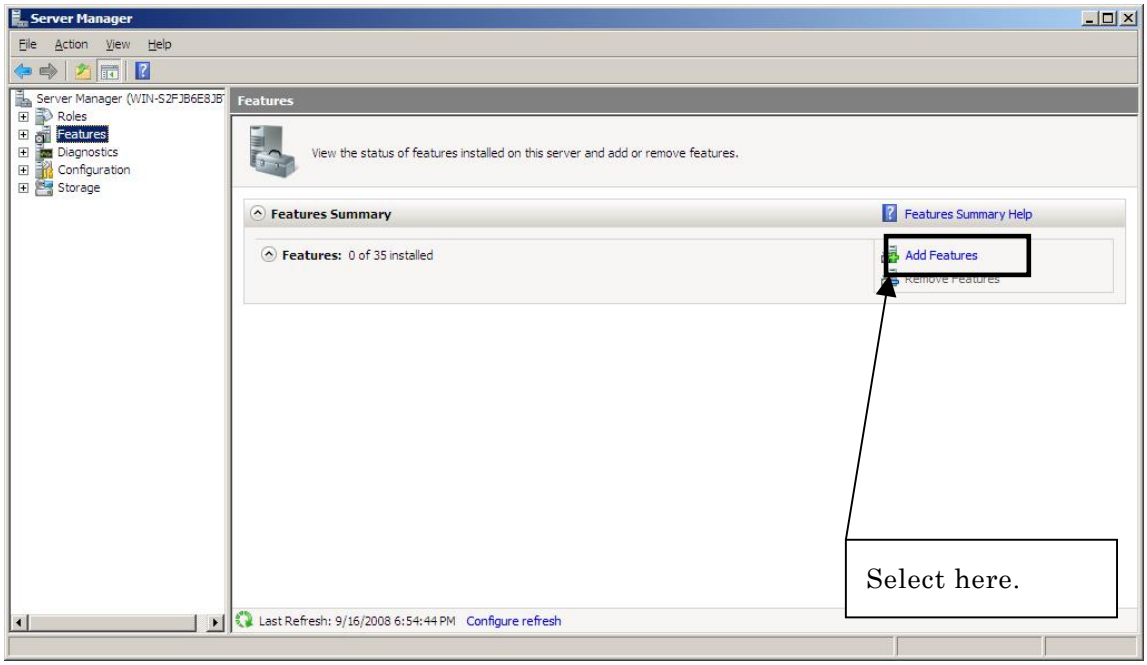
Information which is registered by **"StupSNMP.exe"** execution will be deleted at uninstallation of **SANUPS SOFTWARE**. (Restart of SNMP Service is not required after uninstallation.)

In the case to delete registered information indivisually, it will be executed by "**StupSNMP.exe /d**" from command line. (Please restart SNMP Service after delete.)

[Setting when using Windows 2008]

[1] Select [Start] – [Administration Tools] – [Server Manager].

[2] Select [Feathres] – [Add Feathres].



＜Information＞

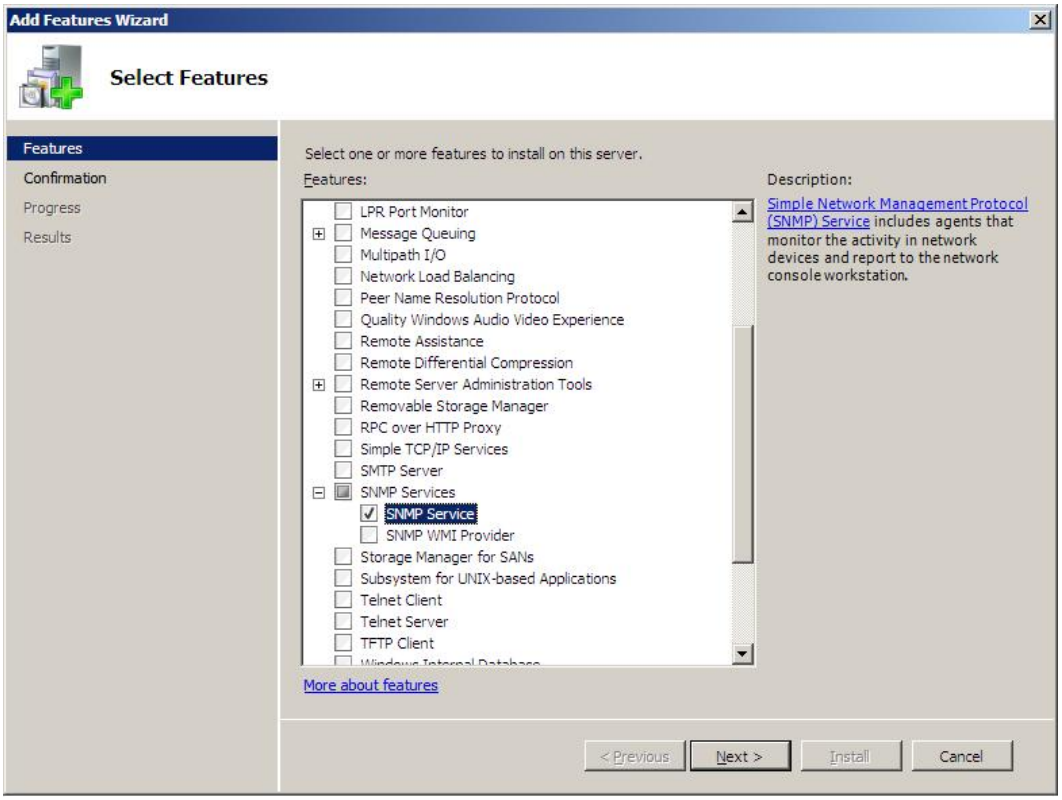
When using **Windows Server 2008 Server Core**, conduct the following command using command line to install SNMP service.

start /w ocsetup SNMP-SC　　・・・ Installing SNMP service

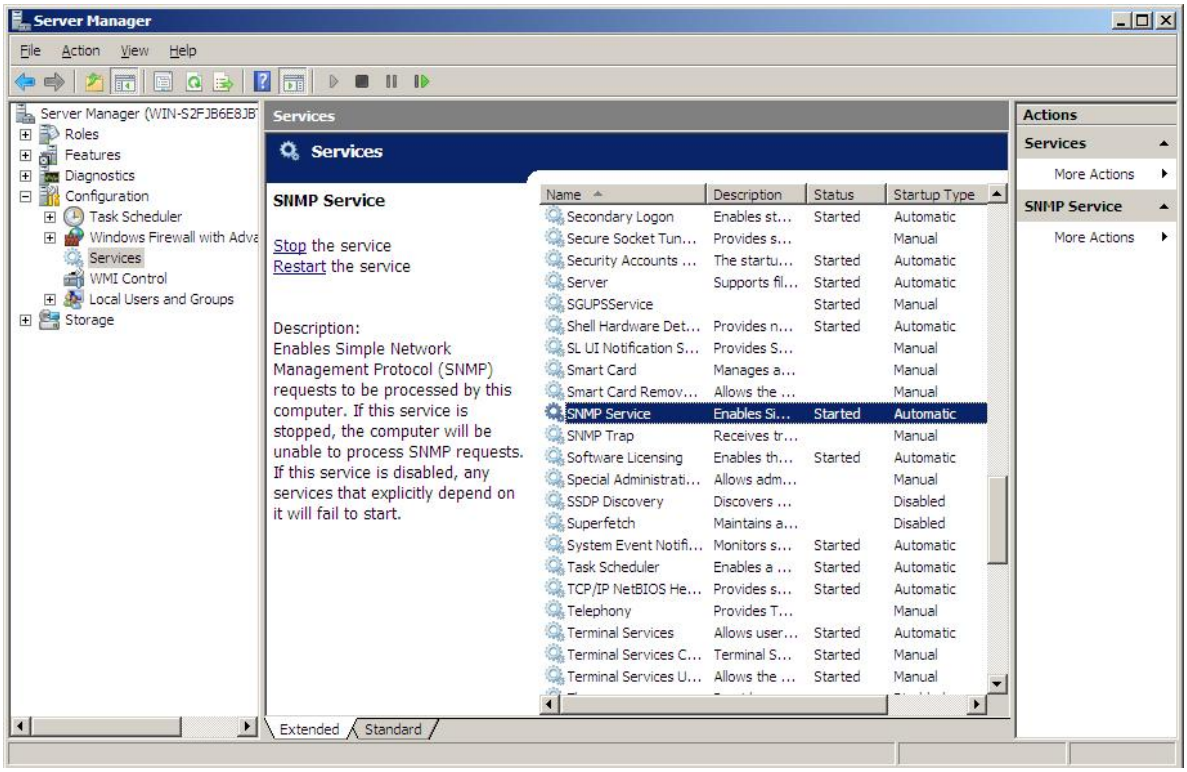
Conduct the following command to display the Roles and Feathres list using command line, and then check that SNMP service (SNMP-SC) installation completed.

oclist　　・・・ Displaying the available Roles and Feathres list

[3] Select **[SNMP Service]** in “Select Features” screen, set up according to the instruction on the page.



[4] Select [Server Manager] – [Configuration] – [Service], set the property of [SNMP Service].
(Setting procedures are same as "**Setting when using Windows 2000, Windows XP, Windows Server 2003".**)



<Information>
When using Windows Server 2008 Server Core, set the property of [SNMP Service] from remote machine using MMC.

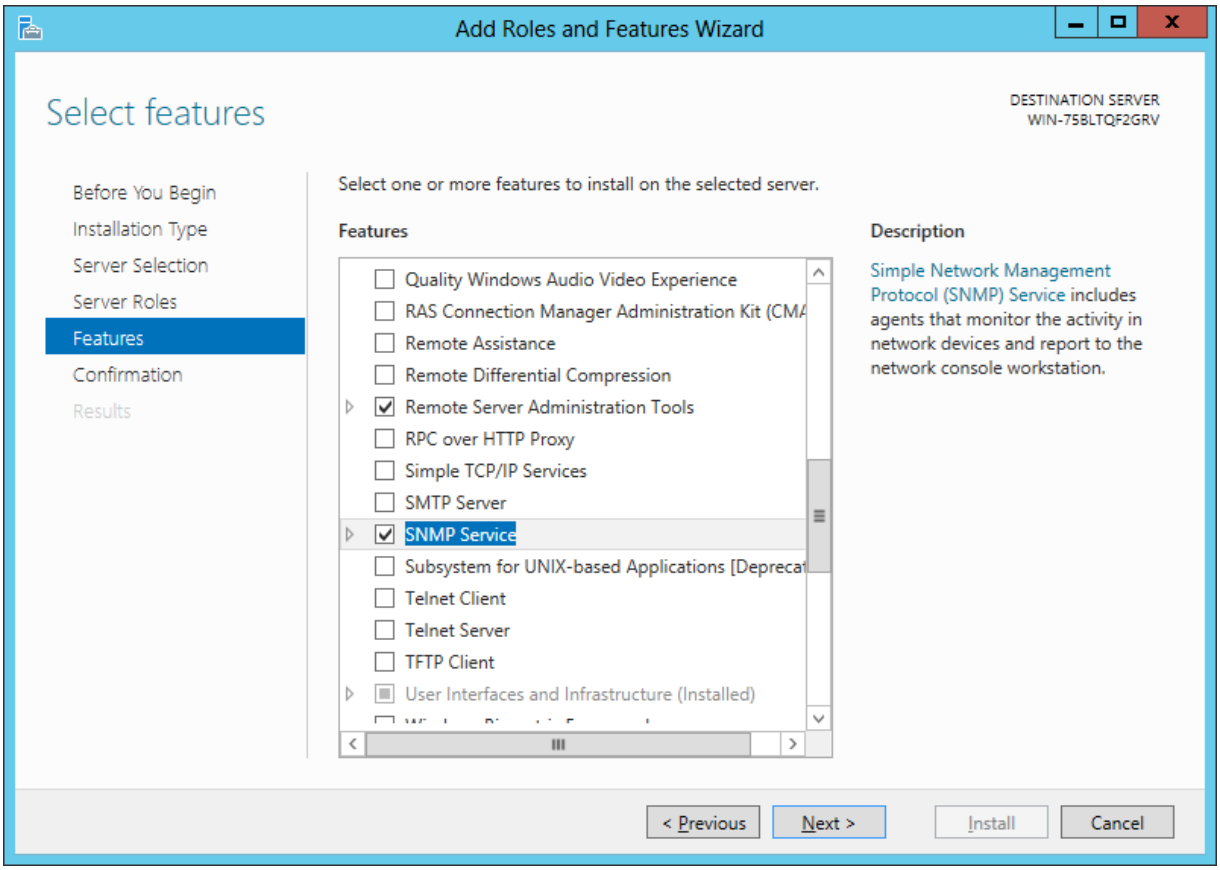
[5] Execute SNMP function installation program for **SANUPS SOFTWARE**.
・Login by users with administrative rights (Administrators).
・Execute "**StupSNMP.exe**" in **SANUPS SOFTWARE** installation folder.
(When executing the above program, please run in "Run as administrator".)
If you execute the above program, SNMP function can be used.

<Information>
Information which is registered by **"StupSNMP.exe"** execution will be deleted at uninstallation of **SANUPS SOFTWARE**. (Restart of SNMP Service is not required after uninstallation.)
In the case to delete registered information indivisually, it will be executed by "**StupSNMP.exe /d**" from command line. (Please restart SNMP Service after delete.)

[Setting when using Windows Server 2012]

[1] Start the [Server Manager], and then select [Manage] – [Add Roles and Features].

[2] Go to the [Features] on [Add Roles and Features Wizard], and select [SNMP Service].



＜Information＞

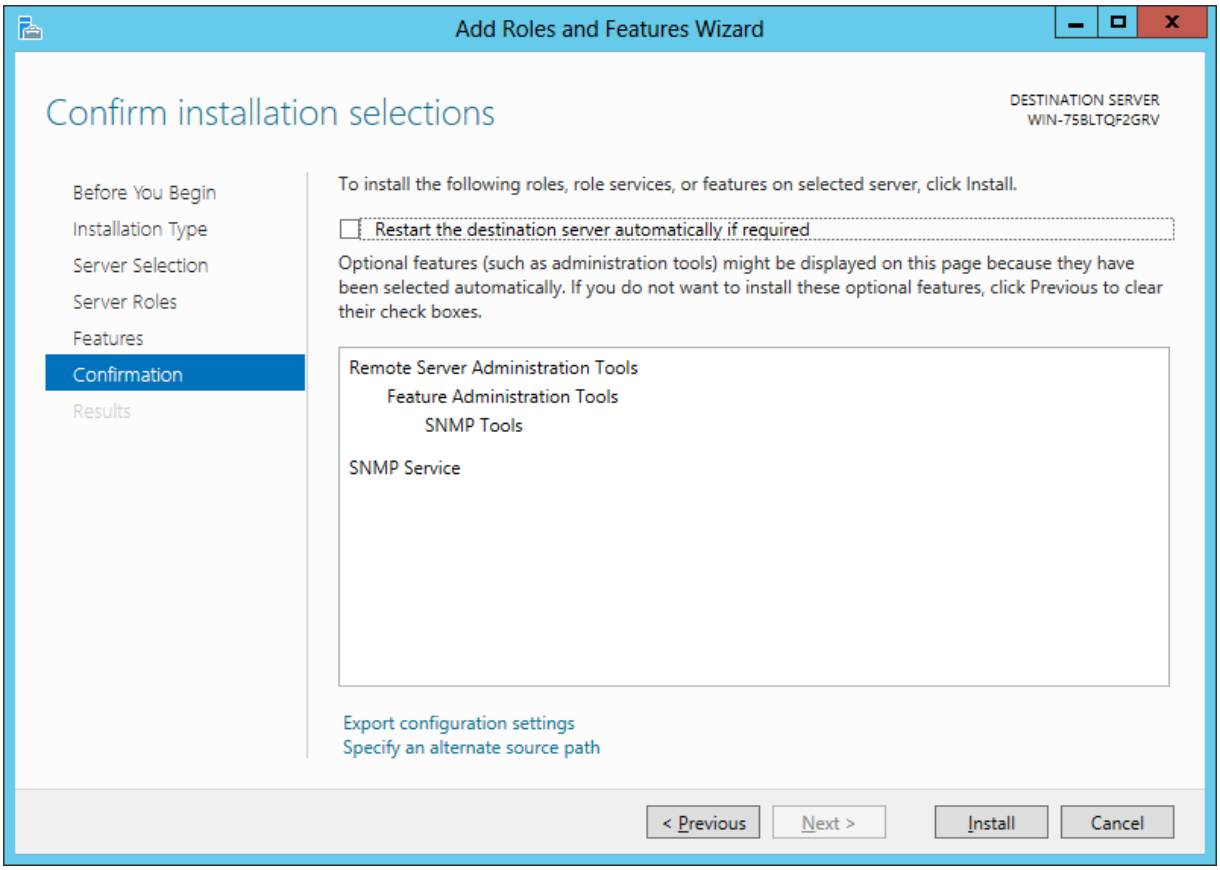
When using **Windows Server 2012 Server Core**, conduct the following command using command line to install SNMP service.

dism /online /enable-feature /featurename:SNMP ・・・ Installing SNMP service

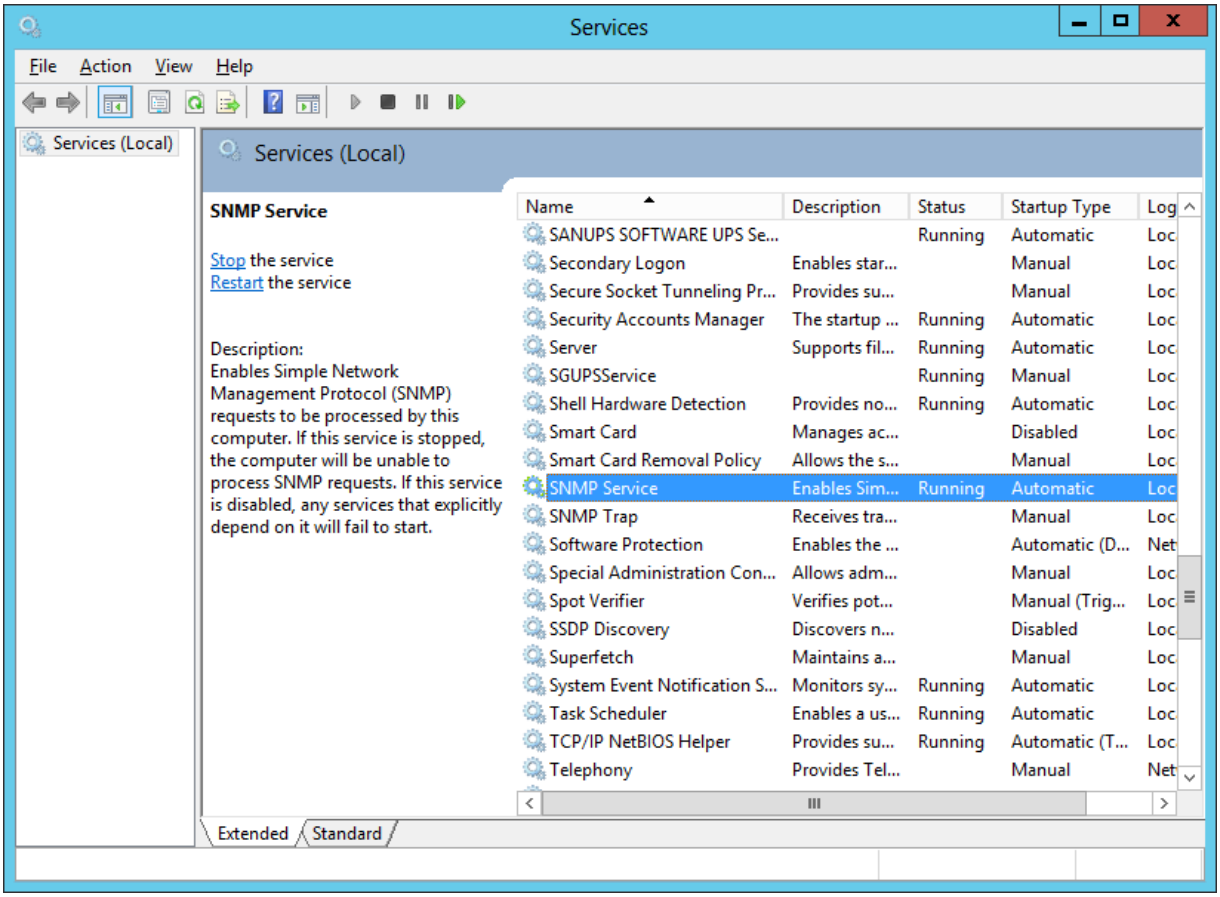
Conduct the following command to display the Roles and Feathres list using command line, and then check that SNMP service (SNMP-SC) installation completed.

dism /online /get-features /format:table ・・・ Displaying the available Roles and Feathres list

[3] Install according to the instruction on the screen.



[4] Select [Server Manager]－[Tools]－[Service], set the property of [SNMP Service].
(Setting procedures are same as "**Setting when using Windows 2000, Windows XP, Windows Server 2003".**)



＜Information＞
When using Windows Server 2012 Server Core, set the property of [SNMP Service] from remote machine using MMC.

[5] Execute SNMP function installation program for **SANUPS SOFTWARE**.
・Login by users with administrative rights (Administrators).
・Execute "**StupSNMP.exe**" in **SANUPS SOFTWARE** installation folder.
(When executing the above program, please run in "Run as administrator".)
If you execute the above program, SNMP function can be used.

<Information>
Information which is registered by **"StupSNMP.exe"** execution will be deleted at uninstallation of **SANUPS SOFTWARE**. (Restart of SNMP Service is not required after uninstallation.)
In the case to delete registered information indivisually, it will be executed by "**StupSNMP.exe /d**" from command line. (Please restart SNMP Service after delete.)

In case of Linux

[Required package]

Package name	Remark
openssl	Version 0.9.5 or later must be used.
ucd-snmp(net-snmp)	4.2.3-1 or later is recommended.

[Usage method]

(1) Acquisition of the package

Obtain an update for the rpm package above from the following site. (as of October 2006, URL is as follows.)

(Please refer to these sites if you need packages as snmp-devel、snmp-utils.)

・**Red Hat Linux**'s Errata update site (http://www.redhat.com/support/errata/)

・**Turbolinux**'s download site (http://www.turbolinux.com/support/download/)

・About Rpmfind.Net Server's searching site (http://rpmfind.net/)

Precautions when using the 64-bit version(x64) of Red Hat Enterprise Linux v.3

If you are using the 64-bit version of **Red Hat Enterprise Linux v.3**, SNMP will not work properly with the net-snmp that comes standard with the operating system. Obtain an update package for net-snmp from the site above and then perform an upgrade. The update packages with which Sanyo Denki has completed verification of operation are as follows.

net-snmp-5.0.9-2.30E.20.x86_64.rpm

(2) Installation

openssl

ucd-snmp

Install the packages in the above order.

(Please check that the packages are installed by conducting "rpm -q *package name*")

(3) Setting

Set config file of ucd-snmp. (Example will be written later.)

(4) Starting method etc.

Start by: **/etc/init.d/snmpd start**

Stop by: **/etc/init.d/snmpd stop**

There is no starting order with **SANUPS SOFTWARE** UPS service (daemon process).

Please set up according to your necessity such as to start SNMP automatically at the start of OS

Cautions on using the FireWall

Fire Wall restricts the passage of packet on the network in order to prevent illegal intrusion into the network. **SANUPS SOFTWARE** uses the network under the standard environment. Thus, there may be influence on the operation under the Fire Wall environment if the usage of SNMP (udp) port is not allowed. Please refer to the OS manual for details.

About use of "SNMP Agent" function on the applicable environment of SELinux

When "snmpd daemon" is under security control of SELinux, under the default condition, SNMP Agent function (upsagent.so) provided from this system does not operate.
If possible, exclude snmp from security control of SELinux. If impossible, it is necessary to remake ”Security Policy”.

[Setting of config file]

Make “**/etc/snmp/snmpd.conf**“ file.

(There is sample of snmpd.conf in the CD-ROM. Please use it as a reference.)

[1] Define the security name.

com2sec [security name] [source] [community name]

Example)

com2sec local localhost public

(Security name “local” means that it is possible to access from the “localhost,” using “public.”)

Source can be specified by “IP address / mask (bit no.)”

Example)

com2sec mynetwork 172.30.1.183/32 public

(Security name “mynetwork” means that it is possible to access from the “172.30.1.183,” using “public.”) If you change “32” to “24,” it becomes possible to get access from “172.30.1.*”)

[2] Define the security model for group.

group [group name] [security model] [security name]

Example)

group SG4L v1 local

group SG4L v2c local

group SG4L usm local

(Defines the security of group name “SG4L.” Security model is the specification of the SNMP version that you will use.)

[3] Define MIB tree that corresponds to view name “upsMIBs.”

view　[view name]　[included /excluded] [location of tree]　[mask]

Example)

view　upsMIBs　included　.1.3.6.1.2.1.33　fe

(Only upsMIB is the target. “fe” is a mask for “.1.3.6.1.2.1.33”)

[4] Set limitation of access

access [group name] [CONTEXT] [security model] [security level] [PREFIX]
[read possible view]　[write possible view]　[notify possible view]

Example)

access SG4L "" any noauth exact upsMIBs upsMIBs upsMIBs

Only when the security model is “usm,” you can define “pdu” that is valid by “PREFX(exact/prefix) and “CONTEXT.” In case of v1 or v2c, [CONTEXT] [security model] [security level] [PREFIX] as “ ””　any　noauth　exact”

[5] Define the link of shared object.

Example)

dlmod　upsMIB　/usr/sg4/service/upsagent.so

(“/usr/sg4” is the installation directory.)

[6] Define the places to announce trap.

Example)

trapsink　173.30.1.183　public

Trap will be announced to specified places.

About start of net-snmp (When using SUSE Linux)

At startup of OS, when "snmp daemon" is set to automatic start, under default condition of start script , "snmp daemon" might not start correctly.
When using following OS, start script of "snmp daemon" must be changed.

SUSE Linux Enterprise Server 9

<Modification file>
/etc/init.d/snmpd

< Modification detail: near Line 69 >
Specifying of the configuration file by option "-c <filename>" is deleted.

Before modification :

```
        case "$1" in
            start)
                echo -n "Starting snmpd"
                get_agents
                startproc $SNMPD -c $SNMPDCONF -r -A -Lf /var/log/net-snmpd.log ¥
                                                -p /var/run/snmpd.pid $agentargs
                rc_status -v
                rc_reset
```

After modification :

```
        case "$1" in
            start)
                echo -n "Starting snmpd"
                get_agents
                startproc $SNMPD -r -A -Lf /var/log/net-snmpd.log ¥
                                                -p /var/run/snmpd.pid $agentargs
                rc_status -v
                rc_reset
```

In case of Solaris

SNMP function corresponds to “SPARC” only.

[Usage method]

(1) Installation

Install ucd-snmp package for each OS version from the product CD.

(When CD-ROM device is mounted on /cdrom)

 # cd /cdrom/sanupssoftware_u/solaris/snmp/<OS Version> <Return>

 # pkgadd -d . <Return>

Select SANYsnmp package and install.

However **Solaris10** uses the common package with **Solaris9**, so move it to the directory for **Solaris9**.

(2) Setting

Set config file (/usr/local/share/snmp/snmpd.conf) of ucd-snmp. (Example will be written later.)

(3) Starting method

When snmp daemon (snmpdx) of standard has started, conduct the stopping procedure.

 # su
 # /etc/init.d/init.snmpdx stop
 # exit

Conduct the following command and start ucd-snmp daemon.

 # su
 # /usr/local/sbin/snmpd
 # /usr/local/sbin/snmptrapd
 # exit

When using Solaris 10:

On "net-snm-5.0.9" that is attached to OS (package name is "SUNWsmagt"), "upsagent.so" of this system does not function properly. If using SNMP function, stop the net-snmp that is attached to OS, and install the SANYsnmp of the Installation CD-ROM of this product.

<The stop method of net-snmp that is attached to OS>

 # su
 # /etc/init.d/init.sma stop
 # exit

In case of HP-UX

[Usage method]

(1) Installation

Install ucd-snmp package for each OS version from the product CD.

(When CD-ROM device is mounted on /cdrom)

 # swinstall -s /cdrom/hp/SANYsnmp/SANYsnmp_HP-UX.depot <Return>

(Please refer to manuals for details of swinstall command.)

(2) Setting

Set config file (/usr/local/share/snmp/snmpd.conf) of ucd-snmp. (Example will be written later.)

(3) Starting method

When snmp daemon (snmpd, snmpdm) of standard has started, conduct the stopping procedure.

 # su
 # /sbin/init.d/SnmpMaster stop
 # exit

(Please refer to manuals for details of snmpd, snmpdm command.)

Conduct the following command and start ucd-snmp daemon.

 # su
 # /usr/local/sbin/snmpd
 # /usr/local/sbin/snmptrapd
 # exit

[Setting of config file]

Make "**/usr/local/share/snmp/snmpd.conf**" file.
(There is sample of snmpd.conf in the CD-ROM. Please use it as a reference.)

[1] Define the security name.

com2sec [security name] [source] [community name]

Example)

com2sec local localhost public

(Security name "local" means that it is possible to access from the "localhost," using "public.")

Source can be specified by "IP address / mask (bit no.)"

Example)

com2sec mynetwork 172.30.1.183/32 public

(Security name "mynetwork" means that it is possible to access from the "172.30.1.183," using "public.") If you change "32" to "24," it becomes possible to get access from "172.30.1.*")

[2] Define the security model for group.

group [group name] [security model] [security name]

Example)

group SG4L v1 local
group SG4L v2c local
group SG4L usm local

(Defines the security of group name "SG4L." Security model is the specification of the SNMP version that you will use.)

[3] Define MIB tree that corresponds to view name "upsMIBs."

view [view name] [included /excluded] [location of tree] [mask]

Example)

view upsMIBs included .1.3.6.1.2.1.33 fe

(Only upsMIB is the target. "fe" is a mask for ".1.3.6.1.2.1.33")

[4] Set limitation of access

access [group name] [CONTEXT] [security model] [security level] [PREFIX]
[read possible view] [write possible view] [notify possible view]

Example)

access SG4L "" any noauth exact upsMIBs upsMIBs upsMIBs

Only when the security model is "usm," you can define "pdu" that is valid by "PREFX(exact/prefix) and "CONTEXT." In case of v1 or v2c, [CONTEXT] [security model] [security level] [PREFIX] as " "" any noauth exact"

[5] Define the link of shared object.
Example)
dlmod upsMIB /usr/sg4/service/upsagent.so
("/usr/sg4" is the installation directory.)

[6] Define the places to announce trap.
Example)
trapsink 173.30.1.183 public

Trap will be announced to specified places.

【Sample of s**nmpd.conf**】

```
#          sec.name  source            community
com2sec local       localhost         public
#com2sec mynetwork 192.168.1.0/24      public
com2sec mynetwork default         public

##       group.name sec.model  sec.name
group SG4L  v1          local
group SG4L  v2c         local
group SG4L  usm          local
group SG4L  v1          mynetwork
group SG4L  v2c         mynetwork
group SG4L  usm          mynetwork

##              incl/excl subtree                          mask
# view upsMIBs included   .1.3.6.1.2.1.33 fe
view upsMIBs included   .1.3.6.1.2.1 fc

##                    context sec.model sec.level prefix read    write   notif
access SG4L ""        any          noauth      exact        upsMIBs    upsMIBs upsMIBs

dlmod upsMIB /usr/local/ups/service/upsagent.so

trapsink 192.168.1.16   public
```

Appendix C　Explanation of events

It will explain outline of events that are registered as “Standard setting” in event setting.

Event No.	Info. Type	Event Name
0101	Warning	Power failure
0102	Info.	Power failure recovered
0141	Error	Major breakdown
0142	Info.	Major breakdown recovered
0143	Warning	Minor breakdown
0144	Info.	Minor breakdown recovered
0503	Info.	Start scheduled stop warning
0504	Info.	Stop warning
0505	Info.	Irreversible: Scheduled stop
0506	Info.	Irreversible: Remo. Stop / Irreversible: Remo. OutputOff
0507	Warning	Irreversible: Power failure
0508	Warning	Irreversible: Low batt. Volt.
0509	Info.	Pressing for log off
0510	Info.	Exec. pre-shutdown operation
0511	Info.	Shutdown execution
0512	Info.	Batt.-replace warning time
0518	Warning	Irreversible: Serial error
0551	Warning	Irreversible: Out. Ctrl. Sw.
0562	Warning	Irreversible: Major breakdown
0563	Warning	Irreversible: Overload
0652	Warning	Irreversible: UPS temp. trouble
0653	Warning	Irreversible: Load factor abnormal
0654	Warning	Irreversible: Input volt. abnormal
0655	Warning	Irreversible: Ext.-meas. abnormal

・Power failure （Event No.：0101）

It is an event that indicates occurrence of power failure.

・Power failure recovered （Event No.：0102）

It is an event that indicates recovery from power failure.

・Major breakdown （Event No.：0141）

It is an event that indicates occurrence of major breakdown.

・Major breakdown recovered （Event No.：0142）

It is an event that indicates recovery from major breakdown.

・Minor breakdown （Event No.：0143）

It is an event that indicates occurrence of minor breakdown.

・Minor breakdown recovered （Event No.：0144）

It is an event that indicates recovery from minor breakdown.

・Start scheduled stop warning （Event No.：0503）

It is an event that occurs at scheduled stop warning time.

・Stop warning （Event No.：0504）

It is an event that occurs at every stop warning message indication cycle.

・Irreversible: Scheduled stop （Event No.：0505）

It is an event that occurs at scheduled stop time.

・Irreversible: Remo. Stop / Irreversible: Remo. OutputOff （Event No.：0506）

It is an event that occurs when UPS stop control is conducted form remote.

・Irreversible: Power failure （Event No.：0507）

It is an event that occurs when it judges that it will not recover from power failure after occurrence of power failure.

・Irreversible: Low batt. Volt. （Event No.：0508）

It is an event that occurs when battery becomes low after occurrence of power failure.

・Pressing for log off （Event No.：0509）

It is an event that occurs at every warning indication interval cycle during stop delay.

・Exec. pre-shutdown operation （Event No.：0510）

It is an event that occurs at shutdown delaying time.

・Shutdown execution（Event No.：0511）

It is an event that occurs at UPS automatic stop time.
Computer will be shutdown with this event.

・Batt.-replace warning time（Event No.：0512）

It is an event that occurs at battery replacement warning time.

・Irreversible: Serial error （Event No.：0518）

It is an event that occurs when it judges that recovery is impossible from communication trouble in case it is set to shutdown at the occurrence of serial communication trouble.

・Irreversible: Out. Ctrl. Sw. （Event No.：0551）

It is an event that occurs when stop control is conducted by output control switch.

・Irreversible: Major breakdown　（Event No.：0562）

This is an event that occurs when a major breakdown occurs and recovery is judged to be impossible, and the computer is set to be shutdown upon the occurrence of a major breakdown.

・Irreversible: Overload（Event No.：0563）

This is an event that occurs when an overload occurs and recovery is judged to be impossible, and the computer is set to be shutdown upon the occurrence of an overload.

Appendix D　About the status of UPS and a measurement value

A display tool is started and the state of UPS and a measurement value can be displayed.
(According to the kind of UPS, a difference is in the contents of a display.)

Status information of UPS (1)

Display Name	Status Name	Note
AC input voltage	Normal/Trouble	
Bypass trouble	Normal/Trouble	
Output state	OFF/ON	
Synchronism	Async./Sync.	
Inverter operation	No/Yes	
Bypass operation	No/Yes	
Battery operation	No/Yes	
Standing by	No/Yes	
Waiting for UPS to stop	No/Yes	※1
Battery life	No/Yes	
Battery voltage	Normal/Decline	
Testing the battery	No/Yes	
Battery test possible	Impossible/Possible	
Overload	None/There is	
Battery Temp. trouble	Normal/Trouble	
Battery Chg. Breakdown	None/There is	
Fin Temp. trouble	None/There is	
Fan breakdown	None/There is	
Bypass breaker OFF	No/Yes	
Arrester breakdown	None/There is	
Major breakdown	None/There is	
Minor breakdown	None/There is	
UPS system OFF	No/Yes	※2
Inverter operation mode	DOUBLE CONVERSION Mode / ACTIVE FILTER mode / ECONOMY mode /Bypass operation / Battery operation / Standing by / OFF / Battery test possible	

※1　"UPS automatic stopping time" is counted down.

※2　The Power switch of UPS is turned off.

Status information of UPS (2)

Display Name	Status Name	Note
AC input voltage	Normal/Trouble	
Bypass trouble	Normal/Trouble	
Output state	OFF/ON	
Synchronism	Async./Sync.	
Inverter operation	No/Yes	
Bypass operation	No/Yes	
Battery operation	No/Yes	
Standing by	No/Yes	
Waiting for UPS to stop	No/Yes	※1
Battery life	No/Yes	
Battery voltage	Normal/Decline	
Testing the battery	No/Yes	
Battery test possible	Impossible/Possible	
Overload	None/There is	
Battery Temp. trouble	Normal/Trouble	
Battery Chg. Breakdown	None/There is	
Fin Temp. trouble	None/There is	
Fan breakdown	None/There is	
Bypass breaker OFF	No/Yes	
Arrester breakdown	None/There is	
Major breakdown	None/There is	
Minor breakdown	None/There is	
UPS system OFF	No/Yes	※2

※1　"UPS automatic stopping time" is counted down.

※2　The Power switch of UPS is turned off.

UPS state information (3)

Display Name	Status Name	Note
AC input voltage	Normal/Trouble	
Battery voltage	Normal/Decline	
Output state	OFF/ON	
Under operation	Bypass /Inverter	
Breakdown	None/There is	
Waiting for UPS to stop	No/Yes	※1

※1　"UPS automatic stopping time" is counted down.

Measurement information of UPS (1)

Display Name	UNIT Name	Note
Input Volt.	V	
Input Curr.	A	
Input Pow.	kW	
Input frequency	HZ	
Input apparent Pow.	kVA	
Bypass Volt.	V	
Bypass Curr.	A	
Bypass frequency	kW	
Bypass Pow.	HZ	
Bypass apparent	kVA	
Output Volt.	V	
Output Curr.	A	
Output frequency	kW	
Output Pow.	HZ	
Output apparent	kVA	
Load factor	%	
Battery Chg. Volt.	V	
Battery Chg. Curr.	A	
Battery Dis-Chg. Volt.	V	
Battery Dis-Chg. Curr.	A	
Ambient Temp.	℃	
Battery Temp.	℃	
Fin Temp.	℃	
Battery Chg. Rate	%	
Battery Remainder Hold Time	min	

Measurement information of UPS (2)

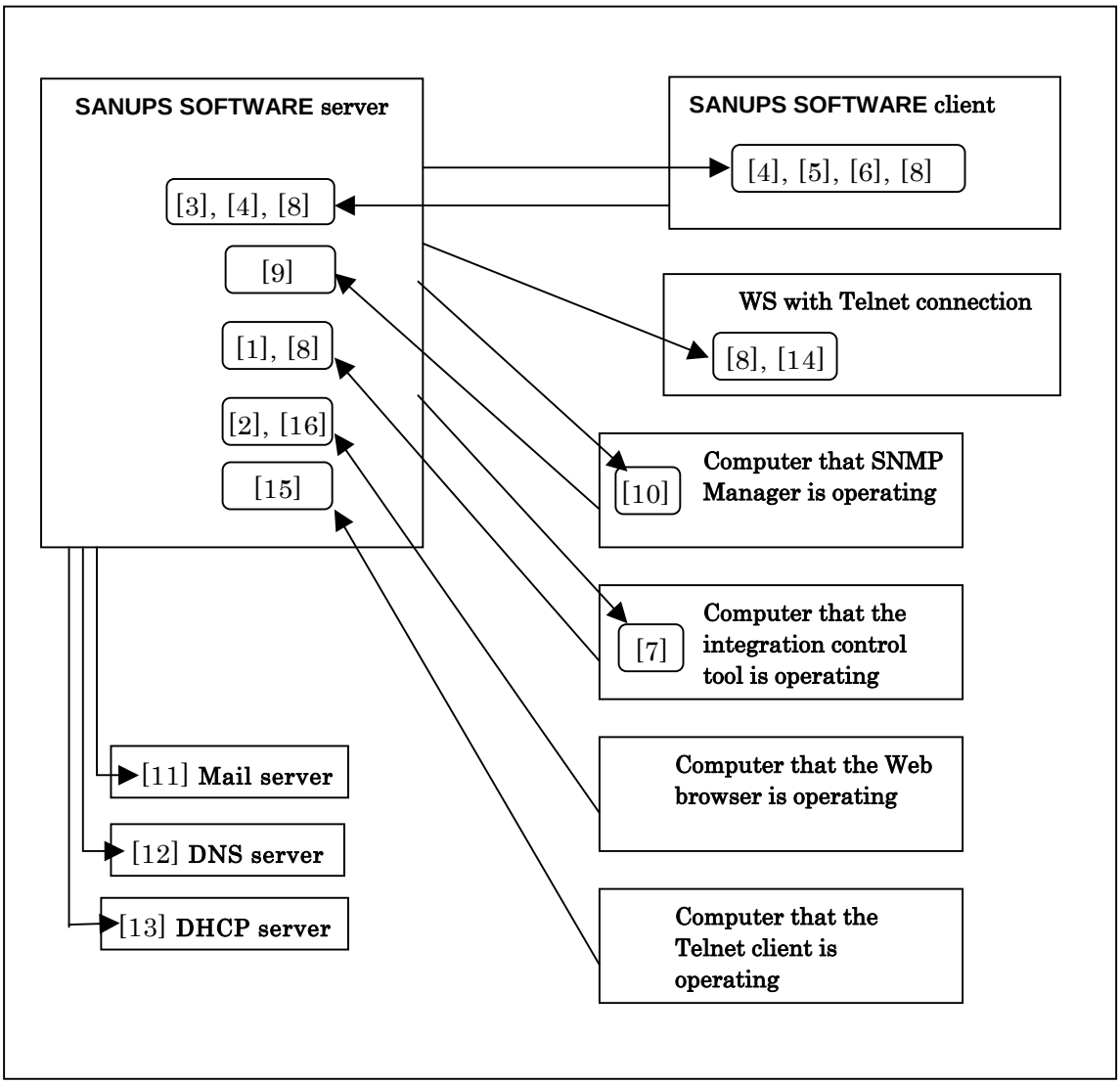
Display Name	UNIT Name	Note
Input Volt.	V	
Input Curr.	A	
Input Pow.	kW	
Input frequency	HZ	
Input apparent Pow.	kVA	
Bypass Volt.	V	
Bypass Curr.	A	
Bypass frequency	kW	
Bypass Pow.	HZ	
Bypass apparent	kVA	
Output Volt.	V	
Output Curr.	A	
Output frequency	kW	
Output Pow.	HZ	
Output apparent	kVA	
Load factor	%	
Battery Chg. Volt.	V	
Battery Chg. Curr.	A	
Battery Dis-Chg. Volt.	V	
Battery Dis-Chg. Curr.	A	
Ambient Temp.	℃	
Battery Temp.	℃	
Fin Temp.	℃	

Measurement information of UPS (3)

Display Name	UNIT Name	Note
Input Volt.	V	
Input Curr.	A	
Input capacity	kVA	
Output Volt.	V	
Output Curr.	A	
Load factor	%	
Battery Chg. Volt.	V	
Battery Chg. Curr.	A	
Battery Dis-Chg. Volt.	V	
Battery Dis-Chg. Curr.	A	
Ambient Temp.	℃	

Appendix E　Protocols and Server Ports Used

The following shows the TCP/UDP server ports and the names of the standard protocols used with **SANUPS SOFTWARE** server and client configurations.

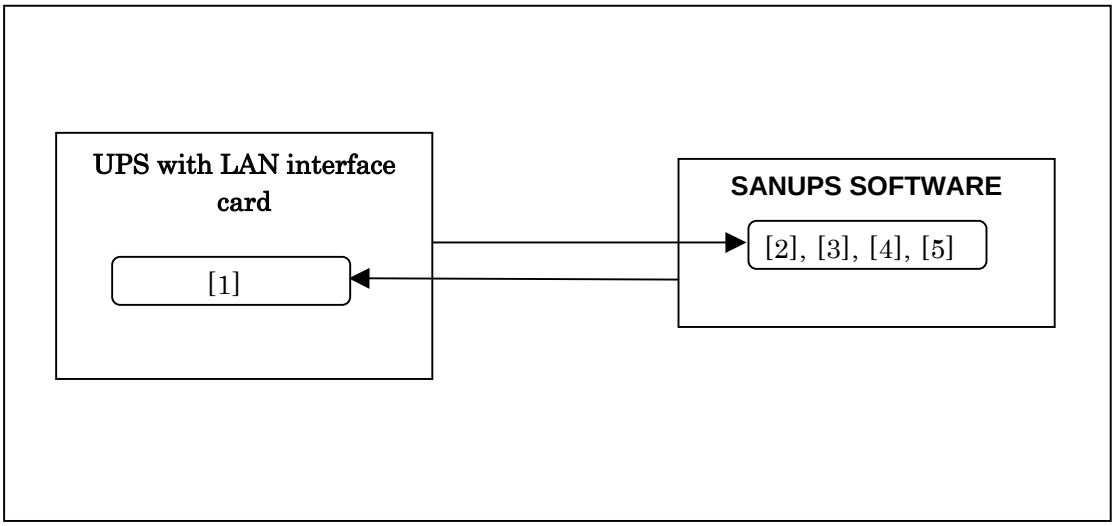


	Protocol, etc.	Port No.	Outline	SANUPS SOFTWARE (*1)	
				Server	Client
[1]	UPS control system	UDP: 30000	Waiting for connection from the integration control tool	○	—
		TCP: 30001	Waiting for connection from the integration control tool		
[2]		TCP: 30002	Waiting for connection from the Web tool	○	—
[3]		TCP: 30000	Waiting for connection from the client device	○	—
		TCP: 30003	Waiting for connection from the GUI tool		
		TCP: 30004	Waiting for connection from the control tool		
		TCP: 30005	Waiting for connection from the display tool		
[4]		TCP: 31001	Waiting for connection from the tool	○	○
[5]		TCP: 31000	Waiting for connection from the UPS	—	○
		UDP: 31000	Waiting for magic packet for Wake On LAN		
[6]		TCP: 31010 to 31019	Waiting for connection from UPS (Dynamic, for **SANUPS SOFTWARE**)	—	○
[7]		TCP: 31020 to 31029	Waiting for connection from UPS (Dynamic, for integration control tool)	—	—
[8]	ICMP	—	Checking status with the ping (echo)	○	○
[9]	SNMP	UDP: 161	Waiting for connection from SNMP Manager	○	—
[10]	SNMPTRAP	UDP: 162	Receiving SNMPTRAP	—	—
[11]	SMTP	TCP: 25	Sending e-mail	—	—
	POP3	TCP: 110	Receiving e-mail	—	—
[12]	DNS	—	Resolving name of the client device, mail server, etc. (acquiring IP address)	—	—
[13]	DHCP	—	Acquiring dynamic address	—	—
[14]	Telnet	TCP: 23 (*2)	Waiting for Telnet connection (for WS Telnet connecting device)	—	—
[15]	Telnet	TCP: 10023 (*2)	Waiting for Telnet connection (for settings)	○	—
[16]	HTTP	UDP: 10080 (*2)	Loading Web tool	○	—

(*1): If a Firewall is enabled on a computer that **SANUPS SOFTWARE** is operating, use of the above ports needs to permitted. Otherwise operation will be affected.

(*2): This is the default setting. You can change the port number.

The following shows the TCP/UDP server ports and the names of the standard protocols used when there is a network connection to a UPS with a LAN interface.



	Protocol, etc.	Port No.	Outline	SANUPS SOFTWARE (*1)
[1]	UPS control system	TCP: 30000	Waiting for connection from a device connected to the network	—
		TCP: 30003	Waiting for connection from the GUI tool	
		TCP: 30004	Waiting for connection from the control tool	
		TCP: 30005	Waiting for connection from the display tool	
[2]		TCP: 31001	Waiting for connection from the tool	○
[3]		TCP: 31000	Waiting for connection from the UPS	○
		UDP: 31000	Waiting for magic packet for Wake On LAN	
[4]		TCP: 31010 to 31019	Waiting for connection from the UPS (Dynamic)	○
[5]	ICMP	—	Checking status with the ping (echo)	○

(*1): If a Firewall is enabled on a computer that **SANUPS SOFTWARE** is operating, use of the above ports needs to permitted. Otherwise operation will be affected.

Appendix F　List of Received Mail

(A) UPS condition and measurement data

Requested mail	
Subject	**UPS□Status□Request**

Note: □ indicates single-byte spaces.

Serial connection to UPS

Reply Mail 1	
Subject	**Re:UPS Status Request(UPS Condition)**
Message	[Status name] : Status description (Repeated by the number of items) Example: **[Interchange Input Voltage]** **: Normal** **[Bypass]** **: Normal** :
Reply Mail 2	
Subject	**Re:UPS Status Request(UPS Measuring Value)**
Message	[Measurement type] : Measured value (Repeated by the number of items) Example: **[Input Voltage]** **: 109V** **[Input Electric Current]** **: 0.6A** :

Direct connection to UPS

Reply Mail	
Subject	**Re:UPS Status Request**
Message	**[Interchange Input Voltage]** **: Normal**(or **Trouble**) **[Battery voltage]** **: Normal**(or **Decline**)

(B) Device setup information

Requested mail	
Subject	**Setting□Request**

Note: □ indicates single-byte spaces.

Reply Mail	
Subject	**Re:Setting Request**
Message	[IP Address] : IP Address (XXX.XXX.XXX.XXX) [MAC Address] : MAC Address (XX-XX-XX-XX-XX-XX) [Program Ver.] : ROM Program Version (P000XXXX) [Web Program Ver.] : Web Program Version (P000XXXX) Example: **[IP Address]** **: 172.30.3.40** **[MAC Address]** **: 00-E0-4E-00-00-01** **[Program Ver.]** **: P0001710A** **[Web Program Ver.]** **: P0001711A**

(C) Event log information (The latest ten)

Requested mail	
Subject	**Log□Request**

Note: □ indicates single-byte spaces.

Reply Mail	
Subject	**Re:Log Request**
Message	[Number, type, event number, time of occurrence, related address and other details] : (The newest 10 items appear in descending order) Example: **[1. Inf <0514> 2003/11/06 20:32:14 172. 30.　1.128 0x00000002]** **[2. Inf <0514> 2003/11/06 20:30:10 172. 30.　1.128 0x00000002]** : **[10. Inf <0514> 2003/11/06 20:00:20 172. 30.　1.128 0x00000002]**

(D) Event log information (All)

Requested mail	
Subject	**Log□Request□All**

Note: □ indicates single-byte spaces.

Reply Mail	
Subject	**Re:Log Request All**
Message	[Number, type, event number, time of occurrence, related address and other details] : (All) Example: **[1. Inf <0514> 2003/11/06 20:32:14 172. 30.　1.128 0x00000002]** **[2. Inf <0514> 2003/11/06 20:30:10 172. 30.　1.128 0x00000002]** : **[320. Inf <0514> 2003/11/06 20:00:20 172. 30.　1.128 0x00000002]**

(E) UPS information

Requested mail	
Subject	**UPS□Info□Request**

Note: □ indicates single-byte spaces.

Serial connection to UPS

Reply Mail	
Subject	**Re:UPS Info Request**
Message	[Style] : Style name (16 bytes maximum) [Controlled part Ver.] : Version No.(XX) [Serial No.] : Serial number (12 bytes maximum) → "None" if no other data Example: **[Style]** **: SUNUPS001 ASD** **[Controlled part Ver.]** **: 20** **[Serial No.]** **: None**

Direct connection to UPS

Reply Mail	
Subject	**Re:UPS Info Request**
Message	**No Data**

Appendix G　Set up of serial port (COM port) of OS

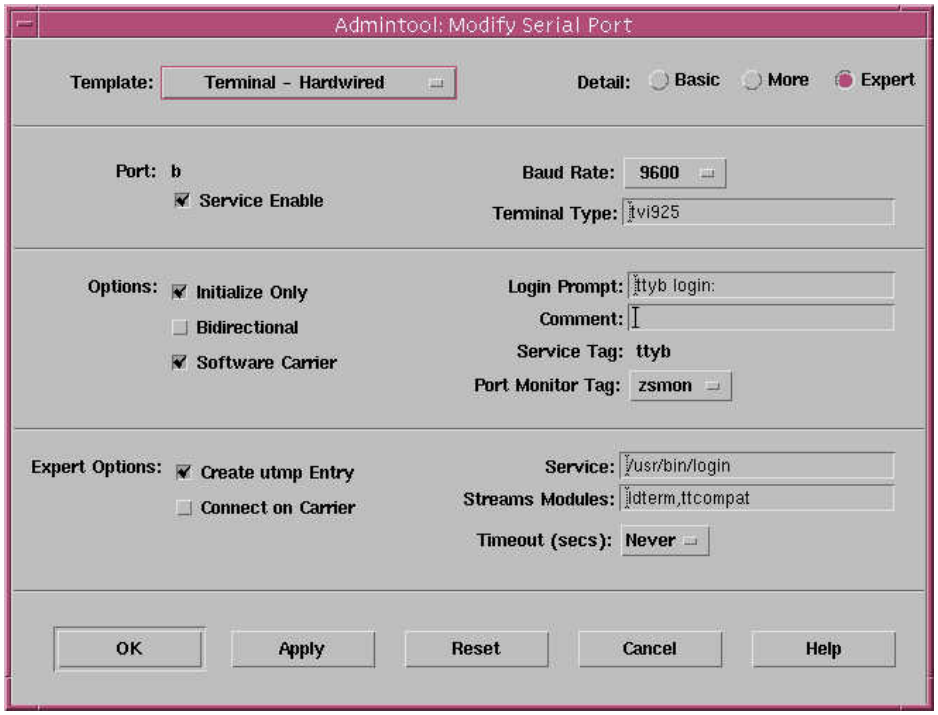
In case of serial connection with UPS, the communication with UPS will not work normally if the serial port's value on the OS side is not set correctly. If there is communication trouble between UPS or if you are starting the serial connection with UPS from now, please check the set value, referring to the description below.

In case of Solaris (Solaris 8 to 10)

○Using Admintool

Start Admintool. (Conduct: **# admintool** <Return>)

Open "Settings of serial port."

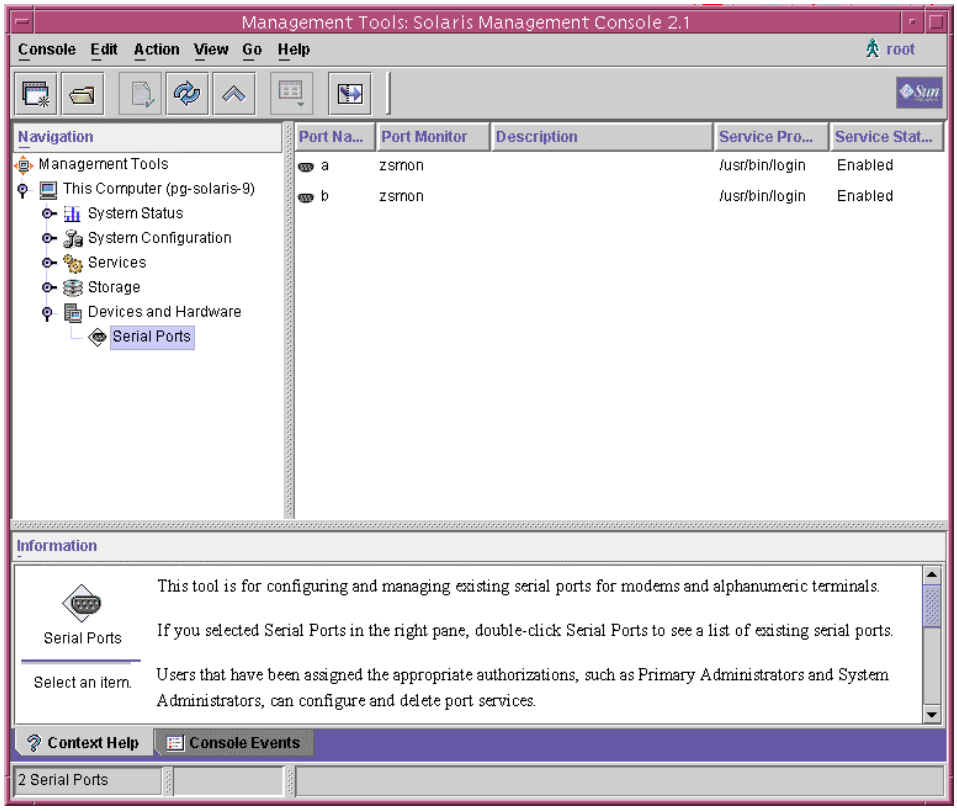


Check if it is set as the above. (The above is the setting page of b port.)

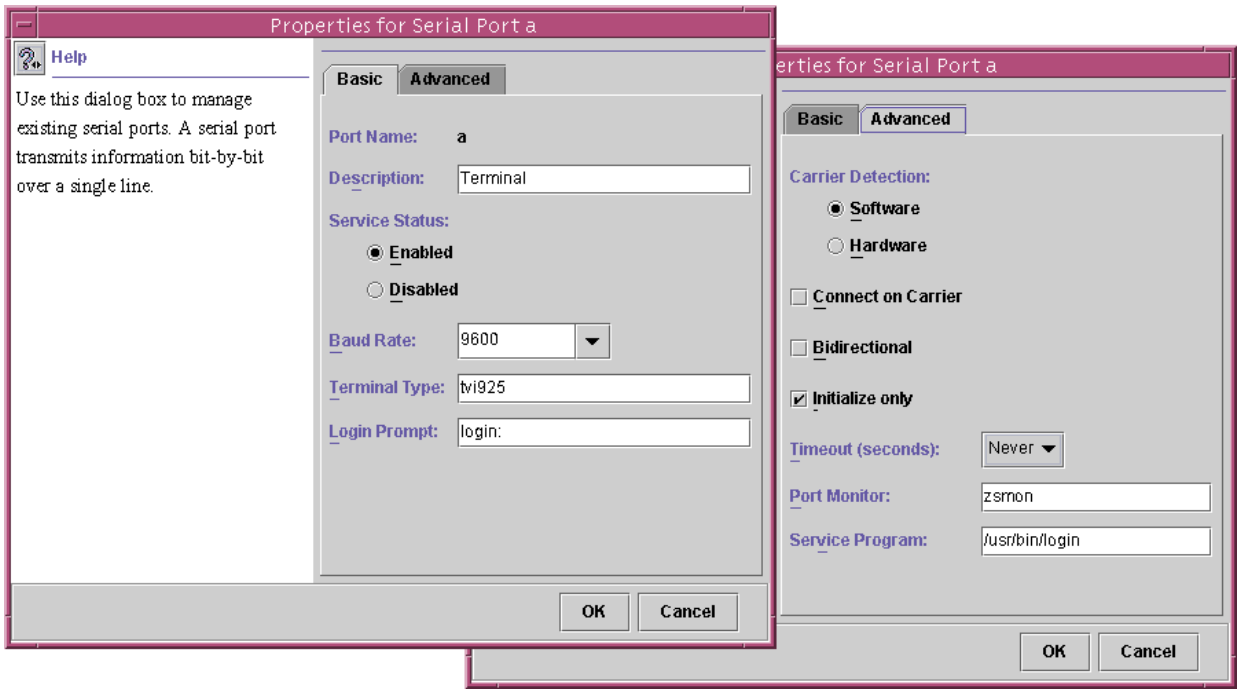
○Using Solaris Management Console

Start Solaris Management Console.　(Conduct: **# smc** <Return>)

[1] Expand “Devices and Hardware”, click "Serial Ports”.



[2] Select the serial connection port, click [Action] - [Properties] in the menu.



Verify that [Basic] tab and [Advanced] tab are set as shown in the above figure.
(The above is the setting page of “a” port.)

○Setting with command

Please refer to the OS manual for the details of the command to use. The following description of command uses default indication. If name of tags, etc are changed, please reread according to the environment you are using.

 # sacadm –l <Return>

Checks the conditionof port monitor. PMTYPE field: Make sure that the STATUS of tty mon is "ENABLED."

 # pmadm –l <Return>

Checks the set content of the port. Following is the example of indication.

```
# pmadm -l
PMTAG        PMTYPE          SVCTAG       FLGS ID         <PMSPECIFIC>
zsmon        ttymon          ttya         u    root       /dev/term/a I - /usr/
bin/login - 9600 ldterm,ttcompat ttya login:  - tvi925 y   #
zsmon        ttymon          ttyb         u    root       /dev/term/b I - /usr/
bin/login - 9600 ldterm,ttcompat ttyb login:  - tvi925 y   #
#
```

 # pmadm -a -p zsmon -s ttya -i root -fu -v `ttyadm -V` -m "`ttyadm -d /dev/term/a –I -l 9600 –m ldterm,ttcompat -s /usr/bin/login -S n`" <Return>

Adds the service of a port.

In case of Solaris (Solaris 11)

Confirmation of login service operation

Confirm login service operation by using svcs command and pick up enabled serial port.

 # svcs –a | grep console <Return>

Below is svcs command display example.

```
# svcs -a | grep console
disabled       6:30:21 svc:/system/console-login:terma
disabled       6:30:22 svc:/system/console-login:termb
online         6:31:32 svc:/system/consolekit:default
online         6:31:42 svc:/system/console-login:default
                                :
                                :
#
```

In the case of above, login service of both a port and b port are “disabled”(disabled display).
On this status, serial connection is enable from **SANUPS SOFTWARE**.
If display is “online”, so login service “enabled”, serial connection by using appropriate serial port is disabled.

In the case of using serial port by **SANUPS SOFTWARE**, using serial port which login service is “disabled” or changing login service status “enabled” to “disabled” is required.

Below is operation example of changing a port login service “enabled” to “disabled”.

```
# svcs -a | grep console
online         6:30:21 svc:/system/console-login:terma      <- a port enable
disabled       6:30:22 svc:/system/console-login:termb
online         6:31:32 svc:/system/consolekit:default
online         6:31:42 svc:/system/console-login:default
                                :
                                :
#
# svcadm disable svc:/system/console-login:terma
#
# svcs -a | grep console
disabled       6:30:21 svc:/system/console-login:terma      <- a port disable
disabled       6:30:22 svc:/system/console-login:termb
                                :
```

Setting service “enabled” to “disabled” by using svcadm command.

In case of HP-UX

If the action field of the port defined in **/etc/inittab** file is **respawn**, change it to **off**.
Following is the example of indication.

```
ttp1:234:off:/usr/sbin/getty -h tty1p0 H
```

In case of AIX

Start smit.（Conduct: **# smit**　<Return>）
Select “Device” – “TTY” – “Change/view characteristic of TTY” and if “Login possible” is set as “enable,” change it to “disable.
Following is the example of indication.

Change/view characteristic of TTY

Enter or select the field value.
When you have completed changing, press ENTER key.

[TOP]	[Field to enter]
TTY	tty0
TTY type	tty
TTY interface	rs232
Explanation	asynchronistic communication terminal
Condition	Enable
Location	01-S1-00-00
Boss adapter	sa0
Port No.	[0]
Login possible	**(disable)**
Baud rate	[9600]

Appendix H　About Shutting Down Applications

Any file currently being edited in a **Microsoft Office** application can be saved prior to shutdown. This function is only applicable to the following applications in a **Windows** environment.

- **Office Word 2000, XP (2002), 2003, 2007, 2010**
- **Office Excel 2000, XP (2002), 2003, 2007, 2010**
- **Office PowerPoint 2000, XP (2002), 2003, 2007, 2010**
- **Office Project 2000, XP (2002), 2003, 2007, 2010**
- **Office Publisher XP (2002), 2003, 2007, 2010**
- **Office Visio 2000, XP (2002), 2003, 2007, 2010**
- **Office FrontPage 2000, XP (2002), 2003**

  * In Microsoft Office 2010, it corresponds to both x86 and x64 versions.

Method of Use

(1) Installation

Log in to the PC as a user with administrator privileges and then execute the following command.

<SANUPS SOFTWARE Installation Directory>\AppSdSetup\setup.exe

The resident process for shutting down applications is installed.

(2) Settings

While referring to Section 6.21 , “Performing a Specific Process when an Event Occurs” set an application shutdown command for the [Exec. pre-shutdown operation] event.

APP_SHUTDOWN.EXE□[-tnnn]□[-e]　　* □ indicates a single-byte space.

The following option specifications are possible.

Specification	Specified range/format	Initial value	Description	Remarks
-tnnn	60 to 999 sec.	60 sec.	Specifies the timeout value for waiting for a file to be saved.	
-e	Stop resident program	Not stopped	Stops the resident process for all logged in users.	

* Options other than the above are ignored. The initial value is used when a set value is out of the specified range or an abnormal format.

The conditions for saving files are as follows.

- Files are saved to the following storage folder.

  <SANUPS SOFTWARE Installation Directory>\APPShutdown\OfficeFiles

- The following format is used for the names of saved files.

  User name_Name Of file being edited_Date and time (yyyymmdd_hhmmss)[_Sequence Number].(Extension for the application)

  * A sequence number is added to ensure that there are no files with the same name.

  Example: user1_Book1_20051231_034146_1.xls

- Even if a work file opened in an applicable application is being shared on the network, it is saved to the storage folder on the local computer.
- If multiple work file are being edited in an applicable application, they are saved individually to the storage folder.

(3) Uninstallation

If you log in to the PC as a user with administrator privileges. first, uninstall this Application shutdown program, then uninstall **SANUPS SOFTWARE**.

Appendix I　Other Q & A

●About sending messages between Windows computers
●Message delivery between Linux machines
●Message delivery between UNIX machines
●Indication of message at the start of Java Tool
●Indication of message box
●Change of shutdown command
●To stop displaying message on terminal window
●About serial port connecting UPS using serial cable

●About sending messages between Windows computers

As for the message sending function at the occurrence event, when “Send message to the connected user” or “Send message to the specified user” is selected, a message might not be displayed if “Messenger services” does not start up.

For the following computers, start up the “Messenger” service by following procedures.

- Message destination computers.
- A sending computer, only when domain user address is specified to the message destination computers

<Procedures>

1. Select：start – control tool – service (*1)
2. Open the property of messenger, set “automatically” start up menu.
3. Start up messenger service.

In addition, if “Send message to the specified user” is selected and IP address of destination computer is specified, it is required that IP address is changed to computer name.

(*1) Menu configuration varies according to OS.

●Message delivery between Linux machines

In Section 6.20 , “Specifying the Display Destination for Event Messages”, rwall program is used to display a message on **Linux** machine which **SANUPS SOFTWARE** is not operating.
The computer that you use must have rwall package installed.

・Computer that sends the message needs rwall command.
(Package name: **rwall)**

・Computer that displays (receives) the message must have rpc.rwalld daemon started.
(Package name: **rwall-server**

※Please refer to the **Linux** manual for rwall.
Depending on OS, “rwall” associated packages might not be prepared.

●Message delivery between UNIX machines

In Section 6.20 , “Specifying the Display Destination for Event Messages”, rwall program is used to display a message on **UNIX** machine which **SANUPS SOFTWARE** is not operating.
The computer that you use must have rwall package installed.

・Computer that sends the message needs rwall command.

・Computer that displays (receives) the message must have rpc.rwalld daemon started.

※Please refer to the OS manual for rwall.

●Indication of message at the start of Java Tool

・Linux

The following message might be displayed when starting up the java tool.
However even in that case, there is no problem on the operating of this system.

“Cannot convert string "・・・" to type VirtualBinding”

・UNIX

When Java Tool is started, message “Font is not found” may be indicated.
This message will be indicated when font that is written on font definition file does not exis in the environment used.
However, in most of the cases, font is defined so that it will complemented by other font so that there will be no influence on the operation.
However, if you have changed X-Window environment from the standard environment, there may be an exception.

●Indication of message box

When you are using CDE environment, message box will pop up with the occurrence of events such as power failure. (Setting is unncessary if you login by root account.)(※)
In order to indicate the message box in an environment logged in as a general user, please conduct the following command from the terminal program such as the terminal emulater.
xhost +

(※) Under Soraris11, root will be allocated to the special user account called roles. Therefore, to display message box under root logged in, need to be enter “xhost +”.

●Change of shutdown command

With **SANUPS SOFTWARE**, you can change the shutdown operation by changing the shutdown command.(**Linux／UNIX**)
In default condition, it will be conducted as follows:

・In case of **Solaris**

```
shutdown –i0 –g0 –y
```

・In case of **HP-UX**

```
cd　/
/sbin/shutdown　–h　–y　now
```

・In case of **AIX**

```
cd　/
/usr/sbin/shutdown　–F
```

If you want to change the option of the shutdown, edit the following file and you will be able to change the shutdown operation.

＜Installation directory＞/bin/shutdown.sh

(shutdown.sh file is a script file that has shutdown command written.)

(Caution) Please edit the shutdown.sh file under your own responsibility.

●To stop displaying message on terminal window

A message is displayed on the terminal window when an event occurs.
If this message is not needed, you can stop displaying the message by changing a script file (sg4lite). (The sg4lite file is the script file to start the UPS service.)（**Linux／UNIX**）

<procedures>

1. Stop the USP service. (*1)
2. Edit the script file (sg4lite), change the setting value of “SG4_TERM_MESSAGE" to “OFF” from “ON”.

   SG4_TERM_MESSAGE=ON
   ↓ (change)
   SG4_TERM_MESSAGE=OFF

3. Start the UPS service. (*1)

(*1) Refer to “Appendix A　Operation of the service”.

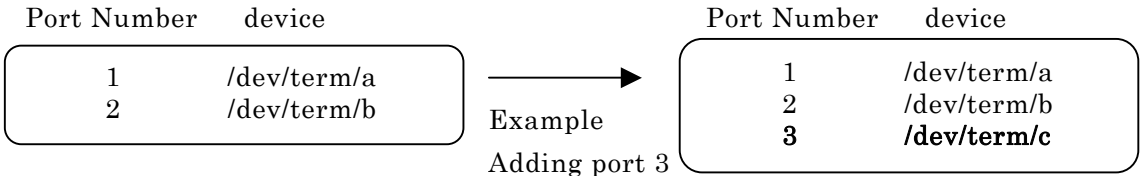
(Caution) Please edit the sg4lite file under your own responsibility.

●About serial port connecting UPS using serial cable

When UPS is connected to the computer with a serial cable, select a using serial port in the UPS connection setting. The selectable serial ports are defined by the following file.(**Linux／UNIX**)

＜Installation directory ＞/bin/serial.txt

The following is a standard display example in Solaris environment.
(Depending on the using environment, file contents may be different from the following.)



This file is made automatically at the installation of this software by detecting the using environment. However, if there is not the using serial port, edit the file to add the using serial port.

Appendix J About constraint by the using OS

Depending on the using OS, some functions of SANUPS SOFTWARE might be unavailable. The details of restrictions are as follows.

For using “Shutdown delaying time” of scheduled operation.

Related item : “6.9 Configuring Time Settings Related to Shutdown Operations” – “6.9.3 [Common information] Tab”

Constraint in using Windows

When using terminal service since **Windows XP** (remote desktop connection), the computer might not shut down under the following conditions.

When “Endlessly*” is checked in “Maximum time delay” - “Scheduled timing” - “Control time information”, besides there are some users who exited session (disconnected status) without logoff on the remote client side.

* “Endlessly” is setting that waits until all users log off.

This is because the disconnected users are considered as logon status on the terminal server.

However, if power failure occurs, the computer will shutdown regardless of the conditions above.

Constraint in using Linux (Note 1)

When using the “automatic shutdown” function of scheduled operation to the connected computers, even if all users log-off, the computer may not shutdown under the following conditions.

When “Endlessly*” is checked in “Maximum time delay” – “Scheduled timing” – “Control time information”.

* “Endlessly” is setting that waits until all users log-off.

This trouble occurs due to OS. If the following OS are used, set “times“ in “Maximum time delay” instead of selecting “Endlessly”.

Red Hat Enterprise Linux v.3
Red Hat Enterprise Linux v.4
MIRACLE LINUX Asianux Server 3

However, if power failure occurs, the computer will shutdown regardless of above settings.

Constraint in using Linux (Note 2)

On the X-Window System, when using the "automatic shutdown" function of scheduled operation to the connected computers, if all terminal windows are shutdown, the computer may shutdown under the following conditions regardless of the setting value.

When "Waiting for logout*" is checked in "Maximum time delay" – "Scheduled timing" – "Control time information".

* "Waiting for logout" is setting that waits until all users log-off.

This trouble occurs due to OS. If the following OS is used, using the computers without setting the shutdown delaying time is recommended.

Red Hat Enterprise Linux v.5
MIRACLE LINUX Asianux Server 3

However, if power failure occurs, the computer will shutdown regardless of above settings. When X-Window System is not used, the trouble above will not occur.

Constraint in using AIX

When using **AIX 5.2** :

In case of using "automatic shutdown" function of scheduled operation to the connected computers, even if all users logoff, the computer cannot shutdown under the following conditions.

When "Endlessly*" is checked in "Maximum time delay" - "Scheduled timing" - "Control time information", besides there are some users who logout the "CDE" without shutting the window of "dtterm" etc..

* "Endlessly" is setting that waits until all users log off.

In such a case, install "PTF" more than the correction level of "X11.Dt.rte file set" on OS side.

File set name	correction level
X11.Dt.rte	5.2.0.10

*Please contact your OS supplier for details.

In addition, if File set cannot be installed, set "times" in "Maximum time delay" instead of selecting "Endlessly".

However, if power failure occurs, the computer will shutdown regardless of above settings.

For using Send message to the other computer.

Related item ： “6.20 Specifying the Display Destination for Event Messages”

Constraint in using Windows (Sending message).

On the OS since Windows Vista, even if you set "Sending message" function, the following functions are not performed due to OS operation.
1. Sending a message to other Windows system from the OS since Windows Vista system.
2. Sending a message to the OS since Windows Vista system from other Windows system.

Constraint in using Window (Play sounds).

"Play sounds" function is not available on the OS since Windows Vista. Therefore, even if you set "Play sounds" function, the sounds are not emitted.

For using Script startup

Constraint in using Window

An interactive service is not available on Windows Server 2008 Server Core.