User's Manual

Network Remote
UPS Management Software

FU-α3-Monitor
for Linux

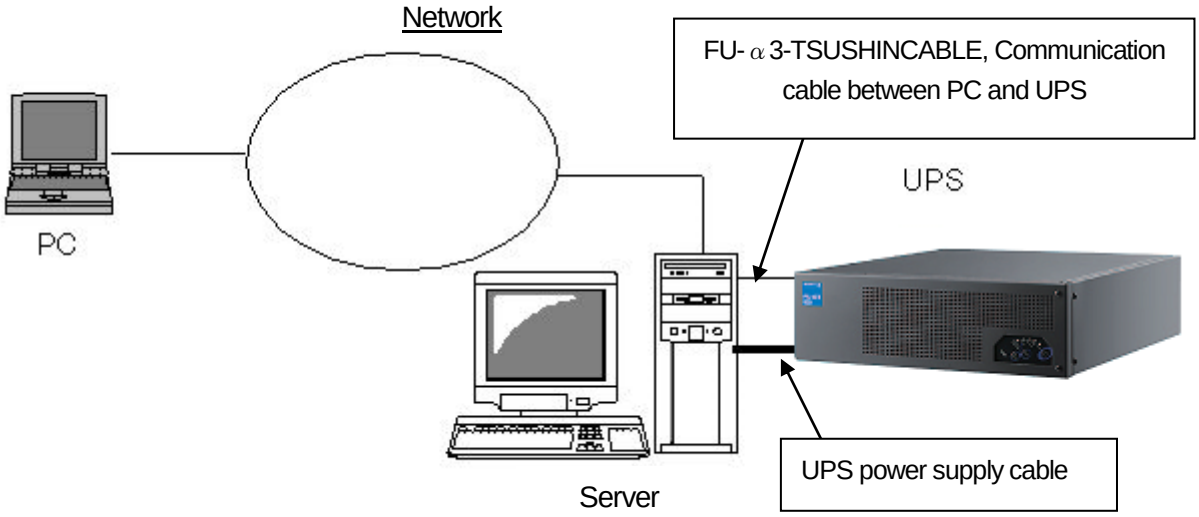
Instruction Manual

INR-HG51362-en	c

Introduction

FU-α3-Monitor for windows is a simplified programs group for UPS (Uninterruptible Power Supply) management that operates as a service program on Windows NT OS, and is intended for FU-α3 series UPS.

RS-232C port is used for the communication of scanning UPS. Connecting the Server with UPS shall be made with the special communication cable **FU-α3-TSUSHINCABLE-SE**.



Char 1 Network

1. Features of FU-α3-Monitor

Supporting OS

Red Hat Enterprise Linux ES 3
Red Hat Enterprise Linux ES 4
Red Hat Enterprise Linux 5
Red Hat Enterprise Linux 6
Red Hat Enterprise Linux 7
Red Hat Enterprise Linux 8
Red Hat Enterprise Linux 9
CentOS 6
CentOS 7
CentOS 8

Operation processes separated for each function

FU-α3-Monitor realizes the event synchronization and process cooperation via socket communication among the processes, making the following three requirements operate as each independent process, which the power management of the server system via UPS shall be provided with:

1. Communicating with UPS, detecting a changed UPS status, and applying the process function for the changed status
2. A scheduled operating function for starting and stopping the server system operation at the expected time
3. A message function notifying to operators

Functions of FU-α3-Monitor

1. It operates as a daemon program.
2. UPS to be managed is automatically detected and recorded in **event_log.csv**[1].
3. The changed status detected at UPS is recorded and saved in **event_log.csv**.
4. UPS operation status is recorded and saved in **data_log.csv**[2].
5. An OS shutdown delay counter is mounted. (In **shutdown.sh**)
6. Enable or disable of displaying alarm messages sum up. (**configuration file : POP_MESSAGE**)
7. Enable or disable of displaying alarm messages one by one. (**configuration file : MSG_*****)
8. Mounting a simplified monitor (DOS screen)
9. Setting the time to alarm a battery exchange.
   It notifies by the pop up message at 9:00AM time that reached the estimated life expectancy following the setting and every day afterwards.

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1 Editing the configuration file can change the file name. It becomes event_log.csv in default.

2 Editing the configuration file can change the file name. It becomes data_log.csv in default.

10. A function notifying via e-mail
11. Scheduled operating functions (setting for daily, weekly, and on the specified date) that can register 15 cases totally.
12. Plural server shutdowns (interlocked shutdowns of max. 20 sets)
    (defined by **configuration file**)

Operation of FU-α3-Monitor

This software makes serial communication with UPS through the specified COM Port (specified by **pusman.conf**), and acquires UPS operation status. So long as UPS Service attached to OS is using COM Port to be connected with UPS, this software does not work.

UPS Service shall be changed into "Stop" and "Manual" in advance with Management Tool - Service.

Events resulting in OS shutdown and UPS power outage are as below:

- In the case that a power interruption is detected during operation and continues for more than specified period
- In the case that a battery voltage drop is detected during a power outage detection, and continues for 15 seconds or more.
- In the case that a UPS failure continues for more than 30 seconds or overload in operation.

UPS failure will be caused by anyone or plural of the following status:
abnormal temperature, abnormal output voltage, abnormal DC intermediate voltage, cooling fan stop.

2. Installation of FU-α3-Monitor

Executing the distributed FU-A3-Monitor-*.*.*.i386.rpm[1] by rpm command. Then, development and the installation of the package are done.

The procedure is shown as follows.

1. The rpm command is executed as follows.

   rpm –ivh FU-A3-Monitor-X.Y.Z.i386.rpm

2. The directory of "puspman" is made for the directory of "/usr/local", and it is progressed.

   Preparing… ##########[100%]
   1: FU-A3-Monitor-X.Y.Z ##########[100%]

   Firstly, please set FU-A3-MONITOR's configurations by the following command.

   /usr/sbin/pupsconf

   After the settings, FU-A3-MONITOR is automatically started.

3. "/usr/sbin/pupsconf" is executed, and it initializes it.

   /usr/sbin/pupsconf

4. The language used is selected. Please input "0" when you select English and input "1" when you select Japanese.

   Select a Language
   0. English
   1. Japanese
   Please make a choice (0 - 1):

5. The configuration file is opened by "vi". After it changes to the setting suitable for the system, it overwrites in the writing end command of "vi".

   :wq

6. Initialization ends above. After the setting is completed, FU-A3-Monitor is automatically begun.

   Starting pupsman (via systemctl): [OK]

The installation of FU-α3-Monitor is completed above.

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1 The version name enters for ***.

3. Setting Operation Environment (configuration file)

FU-α3-Monitor works according to contents of the setting file(pupsman.conf). Please execute "/usr/sbin/pupsconf" when editing it. Because configuration file is opened by "vi" in "/usr/sbin/pupsconf", the end of "vi" is detected, and the signal of the set rereading seeing is issued to the FU-α3-Monitor service by the background, the content of the change is reflected at once.

In case that configuration file has been edited and saved directly on other, OS shall be restarted.

The operation of FU-α3-Monitor can be customized through editing the values of expected keywords[1] according to the operation environment.

The Rows beginning with "#" in the contents of configuration file represent comment rows, and shall be excluded of Parameter Analysis.

Detailed explanation on parameters

1) VERSION

Effective mode			
Set value	Version (Major, Minor, Build)	Unit	
Explanation	Set to version of FU- α 3-Monitor.		
Example	VERSION=3.8.0		
Attention	Don't change this setting value.		

2) MODE

Effective mode	MASTER, SLAVE		
Set value	MASTER or SLAVE	Unit	
Explanation	This is for setting Operation Mode of FU-α3-Monitor. [MASTER] The PC directly communicating with UPS via RS-232C, and used as Server. [SLAVE] The PC only supplied the power source from UPS, and as Server.		
Example	When operating in the mastering mode. MODE=MASTER		
Attention	Stop the service first to change MODE.		

[1] Basically, the character strings of the parameter setting shall be half sized alphanumeric. Full size characters and symbols can not be interpreted.

3) SLAVE_IP

Effective mode	MASTER		
Set value	IP-Address1 IP-Address2 …	Unit	
Explanation	The other party's of synchronization shutdown registration and setting. It is a set item only of FU-α3-Monitor MASTER. When FU-α3-Monitor of the MASTER mode detects the event of OS shutdown, the signal of the shutdown demand is issued to IP-Address registered here through ethernet. Please open one blank or more when you register two or more addresses.		
Example	When there are five slaves. SLAVE_IP=10.65.2.182 10.65.2.183 10.65.2.184 10.65.2.185 10.65.2.186		
Attention	Please fill in registration without changing line in one line. The maximum registration number is 20. Please make the setting here make it by receiving the power supply from UPS like the blank when there is only 1 of MASTER or nor a synchronizing other party.		

4) MASTER_IP

Effective mode	MASTER、SLAVE		
Set value	IP-Address	Unit	
Explanation	Set item of IP-Address of PC and Server that observes state of UPS. The other party address where the console monitor displays data is read here. Please set it for MASTER by Internet Protocol address allocated by 127.0.0.1 or oneself like a blank. Please set IP-Address of PC and Server that operates MASTER for SLAVE.		
Example	At the setting of MASTER. MASTER_IP=127.0.0.1		
Attention			

5) COM_PORT

Effective mode	MASTER		
Set value	COM1 - COM9	Unit	
Explanation	Setting of serial communications port of PC and Server to communicate with UPS. Setting only of MASTER mode.		
Example	When using COM1. COM_PORT=COM1		
Attention			

6) UPS_VOLTAGE

Effective mode	MASTER		
Set value	AUTO or 100、105、110、115、120、200	Unit	
Explanation	Change the setting of the rated voltage of the UPS. Automatic acquisition from UPS at AUTO.		
Example	When rated voltage 200 V is used UPS_VOLTAGE=200		
Attention			

7) UPS_SCAN

Effective mode	MASTER		
Set value	5 (Fixed)	Unit	Sec
Explanation	It is a setting that FU-α3-Monitor acquires the state from UPS at the polling second of the cycle.		
Example	When communicating at five cycles of the second. UPS_SCAN=5		
Attention	It is fixation for five seconds, and even if the value is changed, it doesn't reflect it in internal operation.		

8) OS_SHUTDOWN_DELAY

Effective mode	MASTER		
Set value	0 - 9999	Unit	Sec
Explanation	It is a setting at delay time until OS shutdown begins after detecting the power failure by the state bit value of UPS. Default is 120 seconds. When input abnormality will return in set time or less here, UPS does the driving continuance as it is.		
Special setting	when a set value is adjusted to 9999, Even if event of the power failure detection is detected, OS shutdown is not executed.		
Example	When the shutdown begins from the power failure detection at 30 seconds. OS_SHUTDOWN_DELAY=30 When the shutdown doesn't do even if the power failure is detected. OS_SHUTDOWN_DELAY=9999		
Attention	OS_SHUTDOWN_DELAY is set values of second to doing the countdown start of processing of OS shutdown number. When the shutdown count second (It is ten seconds in default) described in "Shutdown.bat" in the installation folder passes, begins OS shutdown. When the schedule and Failure and Overload are executed, this set value is not reflected.		

9) OS_SHUTDOWN_UPS_FAILURE

Effective mode	MASTER		
Set value	0 - 9999	Unit	Sec
Explanation	It is a setting at delay time until OS shutdown begins after detecting the Failure or Overload by the state bit value of UPS. Default is 30 seconds. When Failure or Overload will release in set time or less here, UPS does the driving continuance as it is.		
Special setting	when a set value is adjusted to 9999, Even if event of the power failure detection is detected, OS shutdown is not executed.		
Example	When the shutdown begins from the Failure or Overload detection at 30 seconds. OS_SHUTDOWN_UPS_FAILURE=30 When the shutdown doesn't do even if the Failure or Overload is detected. OS_SHUTDOWN_UPS_FAILURE=9999		
Attention	OS_SHUTDOWN_UPS_FAILURE is set values of second to doing the countdown start of processing of OS shutdown number. When the shutdown count second (It is ten seconds in default) described in "Shutdown.bat" in the installation folder passes, begins OS shutdown. When the schedule and power failure are executed, this set value is not reflected.		

10) UPS_OFF_DELAY

Effective mode	MASTER		
Set value	0 - 99 or 999	Unit	Min
Explanation	It is a setting at delay time until the output of UPS is stopped after OS shutdown begins. Default is 2 minutes. After this set time passes, the UPS output stop is done once when input abnormality will return in set time or less here after OS begins to shut down. The UPS output will be restarted in the one minute. (UPS_AUTO is effective.) When input abnormality returns after set time here passes, the UPS output is restarted at once.		
Special setting	When a set value is adjusted to 999, the UPS output stop signal is not sent from FU-α3-Monitor to UPS. When this is selected, it is likely to become an over electrical discharge of the battery. Please select this only when you stop UPS by another means.		
Example	When you will stop the output of UPS in one minute after OS shutdown. UPS_OFF_DELAY=1 When you do not stop the output of UPS after OS shutdown. UPS_OFF_DELAY =999 When the schedule is executed, a special setting is reflected.		
Attention			

11) UPS_AUTO

Effective mode	MASTER		
Set value	ENABLE or DISABLE	Unit	
Explanation	When input abnormality returns, the output of UPS is controlled. [DISABLE] The output of UPS comes to remain turning off even if input abnormality returns. [ENABLE] When input abnormality returns, restart ON outputs UPS.		
Example			
Attention			

12) BAT_ALARM_MONTH

Effective mode	MASTER		
Set value	0 - 12	Unit	Month
Explanation	It is a setting of the battery exchange alarm months. I will notify falling below by the pop up message with the value that the number of battery remainder longevity moons counted in UPS set whether become equal. Default is 0 month.		
Example	When you generate the alarm when the battery remains and half a year comes. BAT_ALARM_MONTH=6		
Attention			

13) EXT_COMMAND

Effective mode	MASTER		
Set value	Full path of file	Unit	
Explanation	The file executed immediately before OS shutdown begins is described in the full path. The file specified here operates asynchronously with the shutdown operation. If there is argument in the execution file, among double quotation after it delimits If there is parameter in the execution file, among double quotation after delimits it by ","(comma).		
Example	EXT_COMMAND=="/home/user1/extcmd" EXT_COMMAND=extcmd, "argv1 argv2 argv3"		
Attention	Please change the Delay-Counter of shutdown.sh, and set it at enough Delay-Counter when it takes time to specified processing. Please refer to "Changing of The shutdown delay counter." for details of the setting. Please describe it in shutdown.sh when you want to shut down after executing specified processing. Please refer to "The command (batch processing) is executed before it shuts down." for details of the setting.		

14) DATA_LOG_FILE

Effective mode	MASTER		
Set value	File name	Unit	
Explanation	The log file name that leaves information on UPS is specified. Information output to the file is the following order, and CSV. Input voltage, Input frequency, Output voltage, Output frequency, Load factor, Voltage of battery, Ambient temperature of battery, Battery remainder longevity, and UPS status value		
Example	DATA_LOG_FILE=data_log.csv		
Attention	Please operate it without changing like default. All 0 is recorded at the communication abnormality with UPS. When the data log becomes 60000 lines or more, the latest 10000 lines are left and it is degenerated.		

15) DATA_LOG_SCAN

Effective mode	MASTER		
Set value	1 - 60	Unit	Min
Explanation	The cycle when the data log of UPS is recorded in the file set with DATA_LOG_FILE is specified.		
Example	DATA_LOG_SCAN=5		
Attention	Please operate it without changing like default.		

16) EVENT_LOG_FILE

Effective mode	MASTER		
Set value	File name	Unit	
Explanation	The file name that records event information on UPS is specified.		
Example	EVENT_LOG_FILE=event_log.csv		
Attention	Please operate it without changing like default. When the character of “data" is included in the specified event log file name, it is substituted for “event". When the event log becomes 2000 lines or more, the latest 1000 lines are left and it is degenerated.		

17) E_MAIL_FUNC

Effective mode	MASTER		
Set value	ENABLE or DISABLE	Unit	
Explanation	Whether it notifies with e-mail when the event is detected is selected. [ENABLE] E-mail sending enabled. [DISABLE] E-mail sending disenabled.		
Example			
Attention	It should be an environment to be able to transmit mail at any time when the mail notification is effectively done.		

18) LOCATION

Effective mode	MASTER		
Set value	Strings	Unit	
Explanation	When the above-mentioned enables the e-mail sending, it is a character string for the identification of UPS in the E-mail notification text setting.		
Example	Example of notifying E-mail --- From MyLocation UPS --- ~~~~~~~~~ <-- The set character string is filled in here. 2005-11-07 11:16:57: Detecting Power failure. Starting OS shutdown after 120 sec		
Attention			

19) MAIL_SERVER

Effective mode	MASTER		
Set value	IP-Address	Unit	
Explanation	Setting of IP-Address of mail server. The e-mail sending is indispensable when it is effective. It doesn't care by the blank when it is invalid.		
Example			
Attention			

20) MAIL_FROM

Effective mode	MASTER		
Set value	E-mail address	Unit	
Explanation	E-mail from the address is specified. When mail is received, the address here is displayed as a transmission origin.		
Example			
Attention			

21) MAIL_TO

Effective mode	MASTER		
Set value	E-mail address	Unit	
Explanation	Mail destination address. The plural can be registered. Please delimit it by the normal-width blank when you register the plural.		
Example	When you notify 2 E-mail addresses. MAIL_TO=test@ups.co.jp test2@ups.co.jp		
Attention			

22) MAIL_POWER_FAILURE

This is for selecting "Enable" or" Disable" of e-mail sending for each event.

ON e-mail sending

OFF e-mail not sending

In case of "e-mail sending Disable" in E_MAIL_FUNC, e-mail is not sent despite "ON" setting for the following items:

Effective mode	MASTER		
Set value	ON or OFF	Unit	
Explanation	Input voltage drop detected		
Example			
Attention			

23) MAIL_POWER_BACK

Effective mode	MASTER		
Set value	ON or OFF	Unit	
Explanation	Input voltage recovered		
Example			
Attention			

24) MAIL_OVERLOAD_OCCUR

Effective mode	MASTER		
Set value	ON or OFF	Unit	
Explanation	UPS overload occurred		
Example			
Attention			

25) MAIL_OVERLOAD_BACK

Effective mode	MASTER		
Set value	ON or OFF	Unit	
Explanation	Recovered from UPS overload		
Example			
Attention			

26) MAIL_UPS_FAILURE

Effective mode	MASTER		
Set value	ON or OFF	Unit	
Explanation	UPS failure occurred		
Example			
Attention			

27) MAIL_UPS_HEALTH

Effective mode	MASTER		
Set value	ON or OFF	Unit	
Explanation	Recovered from UPS failure		
Example			
Attention			

28) MAIL_BATTERY_LOW

Effective mode	MASTER		
Set value	ON or OFF	Unit	
Explanation	Battery voltage low		
Example			
Attention			

29) MAIL_BATTERY_HEALTH

Effective mode	MASTER		
Set value	ON or OFF	Unit	
Explanation	Battery voltage recovered		
Example			
Attention			

30) MAIL_BATTERY_LIFE

Effective mode	MASTER		
Set value	ON or OFF	Unit	
Explanation	Battery life time expired		
Example			
Attention			

31) MAIL_COM_LOST

Effective mode	MASTER		
Set value	ON or OFF	Unit	
Explanation	Communication with UPS interrupted		
Example			
Attention	It is generated every hour if it continues.		

32) MAIL_COM_RECOVER

Effective mode	MASTER		
Set value	ON or OFF	Unit	
Explanation	Communication with UPS recovered		
Example			
Attention			

33) POP_MESSAGE

Effective mode	MASTER、SLAVE		
Set value	ENABLE or DISABLE	Unit	
Explanation	Enabled or disabled of the display of Pop-Up Message is set. [ENABLE] Pop-Up Message is displayed. [DISABLE] Pop-Up Message is not displayed.		
Example			
Attention	The presence of the Pop-Up Message display set here is applied to all the pop up messages. Pop up in the Linux system is done by the terminal output by the wall command.		

34) MSG_POWER_FAILURE

This is for setting enable or disable of display Pop-up message for each event.
The setting is effective in case of "ENABLE" for the above POP_MESSAGE.
Please set either "ON", "AUTO" or "OFF" to a set value.

ON	The pop up message is displayed, and comes remaining the remainder.
AUTO	The pop up message is displayed, and comes remaining the remainder. Pop up is shut by the automatic operation only at the Windows system.
OFF	The pop up message is not displayed.

Note) When POP_MESSAGE is made effective with SLAVE, a set value of MASTER is succeeded to SLAVE.

Effective mode	MASTER		
Set value	ON, AUTO, OFF	Unit	
Explanation	Input voltage drop detected		
Example			
Attention			

35) MSG_POWER_BACK

Effective mode	MASTER		
Set value	ON, AUTO, OFF	Unit	
Explanation	Input voltage recovered		
Example			
Attention			

36) MSG_OVERLOAD_OCCUR

Effective mode	MASTER		
Set value	ON, AUTO, OFF	Unit	
Explanation	UPS overload occurred		
Example			
Attention			

37) MSG_OVERLOAD_BACK

Effective mode	MASTER		
Set value	ON, AUTO, OFF	Unit	
Explanation	Recovered from UPS overload		
Example			
Attention			

38) MSG_UPS_FAILURE

Effective mode	MASTER		
Set value	ON, AUTO, OFF	Unit	
Explanation	UPS failure occurred		
Example			
Attention			

39) MSG_UPS_HEALTH

Effective mode	MASTER		
Set value	ON, AUTO, OFF	Unit	
Explanation	Recovered from UPS failure		
Example			
Attention			

40) MSG_BATTERY_LOW

Effective mode	MASTER		
Set value	ON, AUTO, OFF	Unit	
Explanation	Battery voltage low		
Example			
Attention			

41) MSG_BATTERY_HEALTH

Effective mode	MASTER		
Set value	ON, AUTO, OFF	Unit	
Explanation	Battery voltage recovered		
Example			
Attention			

42) MSG_BATTERY_LIFE

Effective mode	MASTER		
Set value	ON, AUTO, OFF	Unit	
Explanation	Battery life time expired		
Example			
Attention			

43) MSG_COM_LOST

Effective mode	MASTER		
Set value	ON, AUTO, OFF	Unit	
Explanation	Communication with UPS interrupted		
Example			
Attention	It is generated every hour if it continues.		

44) MSG_COM_RECOVER

Effective mode	MASTER		
Set value	ON, AUTO, OFF	Unit	
Explanation	Communication with UPS recovered		
Example			
Attention			

45) MSG_SCHEDULE_TODAY

Effective mode	MASTER		
Set value	ON, AUTO, OFF	Unit	
Explanation	Today's schedule notification display.		
Example			
Attention	The informative message before the schedule is executed is not reflected. Please make a set value of **POP_MESSAGE DISABLE** when you do not display this message.		

4. Operation change in shutdown

When shutting down, “shutdown.sh" is executed and OS is ended normally.
Changing this “shutdown.sh” can customize the shutdown operation.

Note) OS might not end normally when the description of “shutdown.sh" is mistaken.
Note) “shutdown.sh" is executed by the background (none interactive).

The content of “shutdown.sh" of default is as follows.

```
1   #!/bin/sh
2
3   DELAY=$1
4   # OS Shutdown Executing Command Call by pupsman module
5   # ./pupsman, ./sched, ./upscmndx
6   #
7   #   send shutdown request for slave PC by IP-Address List pupsman.conf
8   ./shutdown_control ${DELAY}
9   # >>Please add a script here if there is processing that wants to
10  # >>be executed before OS shutdown.
11  # ------------------------------------------------------------------------
12  # Ex. ECHO ${USERNAME} >> loginuser.txt
13
14
15  # ------------------------------------------------------------------------
16  #
17  # >>Please change the following value when you change OS shutdown counter.
18  # >>!When the decrease of the battery voltage while UPS backup is driven
19  # >> occurs, the time set here is not reflected. OS shutdown immediately.
20  # >> Default=10
21  # ------------------------------------------------------------------------
22  if [ "$1" = "default" ]; then
23          DELAY=10
24  fi
25  # ------------------------------------------------------------------------
26  #
27  #   ${DELAY} = 10 (Default)
28  sleep ${DELAY}
29  rm core* >/dev/nul 2>&1
30  sync; sync; sync
31
32  /sbin/init 0 &
33  exit
```

Note) Because a gray part (line where there is “#" in the head of line) is disregarded, it is not executed.
Note) The number in the left of each line is a number added for the explanation. It is not actually described.

The command (batch processing) is executed before it shuts down.

The command that wants to be executed is added to the 13th line or 14th line presence of “shutdown.sh" of default. Please describe it from “shutdown_control".

Note) As for the command added, execution should end.
Note) Please set OS_SHUTDOWN_DELAY enough when it takes time for processing.

Because OS is shutdown after the command added ends, the shutdown of OS is delayed only the execution time of the command.

It exemplifies it to the following.

```
1   #!/bin/sh
2
3   DELAY=$1
4   # OS Shutdown Executing Command Call by pupsman module
5   # ./pupsman, ./sched, ./upscmndx
6   #
7   #   send shutdown request for slave PC by IP-Address List pupsman.conf
8   ./shutdown_control ${DELAY}
9   # >>Please add a script here if there is processing that wants to
10  # >>be executed before OS shutdown.
11  # ------------------------------------------------------------------------
12  # Ex. ECHO ${USERNAME} >> loginuser.txt
13  # シャットダウン時にログインしていたユーザ名をファイルに記録します。
14  echo $USERNAME >> loginuser.txt
15
16  # ------------------------------------------------------------------------
17  #
18  # >>Please change the following value when you change OS shutdown counter.
19  # >>!When the decrease of the battery voltage while UPS backup is driven
20  # >> occurs, the time set here is not reflected. OS shutdown immediately.
21  # >> Default=10
22  # ------------------------------------------------------------------------
23  if [ "$1" = "default" ]; then
24          DELAY=10
25  fi
26  # ------------------------------------------------------------------------
27  #
28  #   ${DELAY} = 10 (Default)
29  sleep ${DELAY}
30  rm core* >/dev/nul 2>&1
31  sync; sync; sync
32
33  /sbin/init 0 &
34  exit
```

Changing of The shutdown delay counter.

After shutdown late the counter of 10 seconds, the shutdown start of processing is done by default. This becomes delay time that it is possible to cancel by "AbortSystemShutdown" of Windows API. It is possible to change this value arbitrarily. MASTER and SLAVE are individually reflected respectively by the synchronization shutdown operation of Master and Slave when changing.

Note) The countdown is begun the OS_SHUTDOWN_DELAY setting second of the configuration file later.

Note) It counts down about the shutdown delay counter while counting down at the output stop delay time of UPS.

Note) The shutdown delay counter set here is set in compulsion at the shutdown due to the decrease of the voltage of the battery while the backup is driven and it is set to 1 [sec].

The example when the shutdown delay counter was changed at 30 seconds is shown in the following.

```
1   #!/bin/sh
2
3   DELAY=$1
4   # OS Shutdown Executing Command Call by pupsman module
5   # ./pupsman, ./sched, ./upscmndx
6   #
7   #   send shutdown request for slave PC by IP-Address List pupsman.conf
8   ./shutdown_control ${DELAY}
9   # >>Please add a script here if there is processing that wants to
10  # >>be executed before OS shutdown.
11  # -------------------------------------------------------------------
12  # Ex. ECHO ${USERNAME} >> loginuser.txt
13
14
15  # -------------------------------------------------------------------
16  #
17  # >>Please change the following value when you change OS shutdown counter.
18  # >>!When the decrease of the battery voltage while UPS backup is driven
19  # >> occurs, the time set here is not reflected. OS shutdown immediately.
20  # >> Default=10
21  # -------------------------------------------------------------------
22  if [ "$1" = "default" ]; then
23  #           DELAY=10
24              DELAY=30
25  fi
26  # -------------------------------------------------------------------
27  #
28  #   ${DELAY} = 10 (Default)
29  sleep ${DELAY}
30  rm core* >/dev/nul 2>&1
31  sync; sync; sync
32
33  /sbin/init 0 &
34  exit
```

5. Starting FU-α3-Monitor Utility

The utility command is made for "/usr/sbin/" after it installs it, and using three kinds of utilities becomes possible.

- pupsconf
- upsmony
- scheset

upsmony (Console monitor)

FU-α3-Monitor Service communicates with UPS in polling method, and displays the saved data acquired with socket communications.

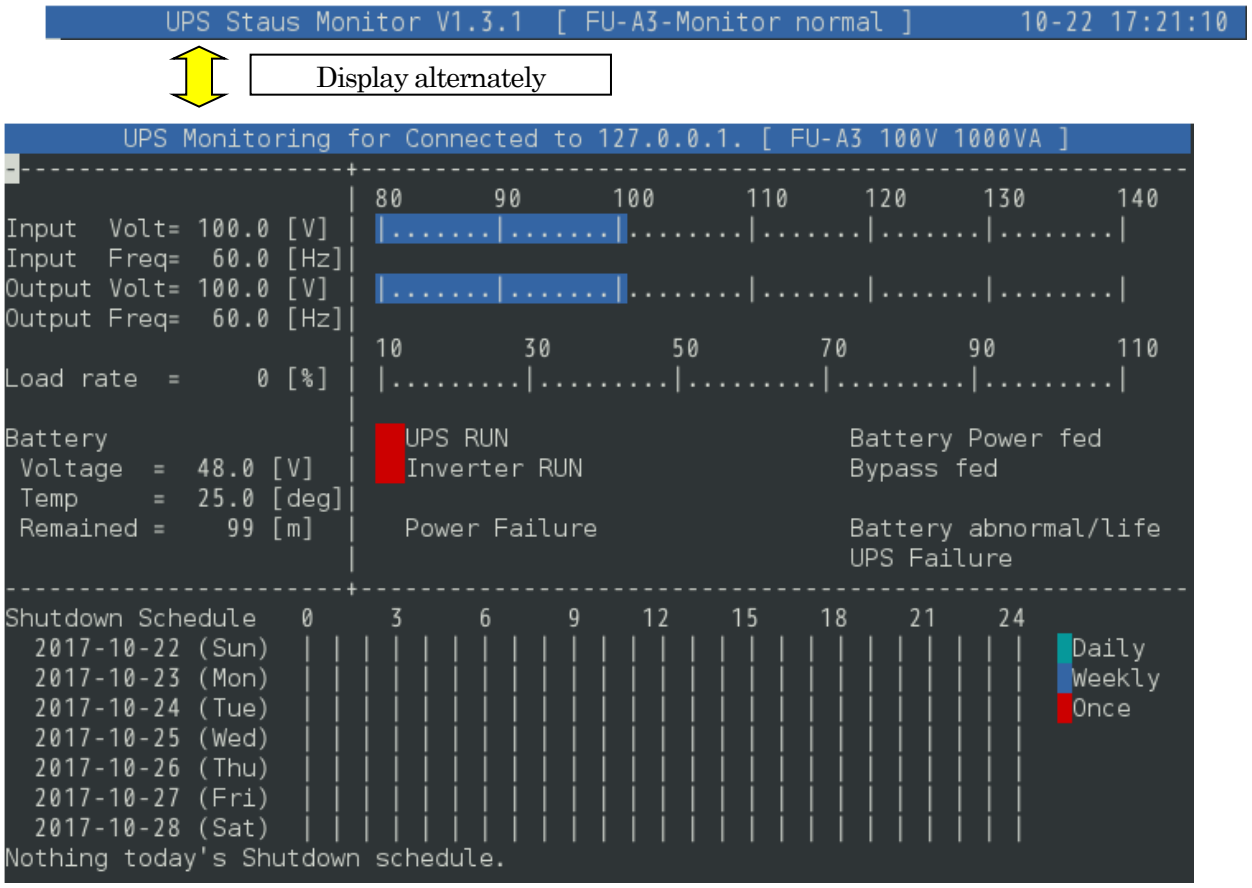


Chart 2 Monitor screen

pupsconf (configuration file editor)

This is for editing the operation parameters of FU-α3-Monitor. The items concerned shall be edited.

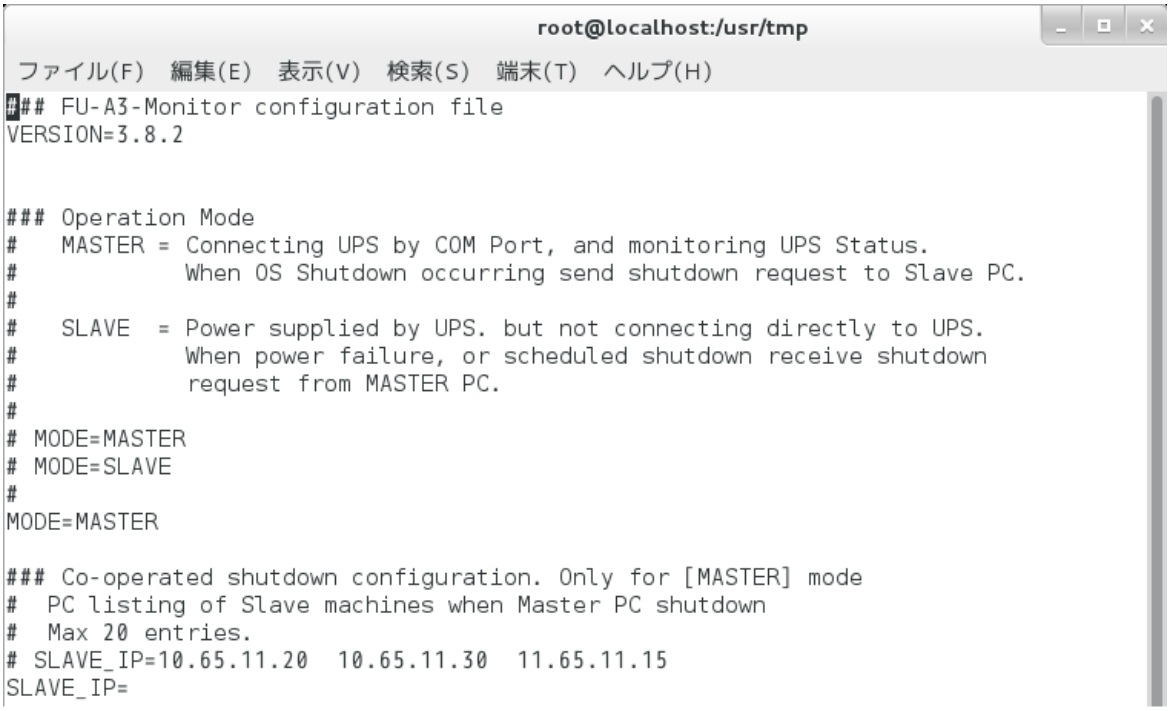


Chart 3 Setting screen

Schedule setting

The schedule setting of FU-α3-Monitor operation is implemented. Selecting three types of scheduling (daily, weekly, and specified date) and registering 15 cases in total are possible. The utility is operable only with 4 directional cursor key, "ESC" key, and "Enter" key.

There is a priority level in the schedule. The priority level of the schedule is as shown in the table below.

Priority	Kind	Note
High	Once	It is executed according to the priority level when other schedules and the stop periods come in succession, and the schedule that comes in succession becomes invalid.
Middle	Weekly	
Low	Daily	

Note) When the time of PC is changed for one minute or more, the cross-check of the schedule is done. In this case, when POP_MESSAGE is effective, the pop up of today's schedule is displayed.

Note) The pop up notification before the schedule is executed is done at the following time when POP_MESSAGE is enabled.

>Ten minutes ago

>Five minutes ago

>Three minutes ago

>One minute ago

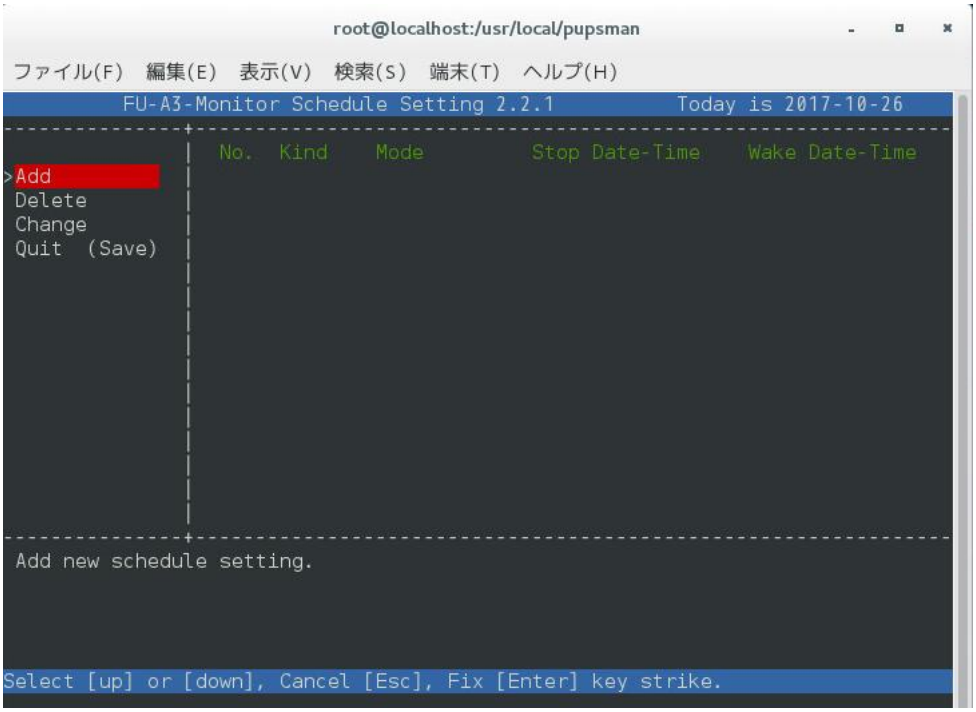
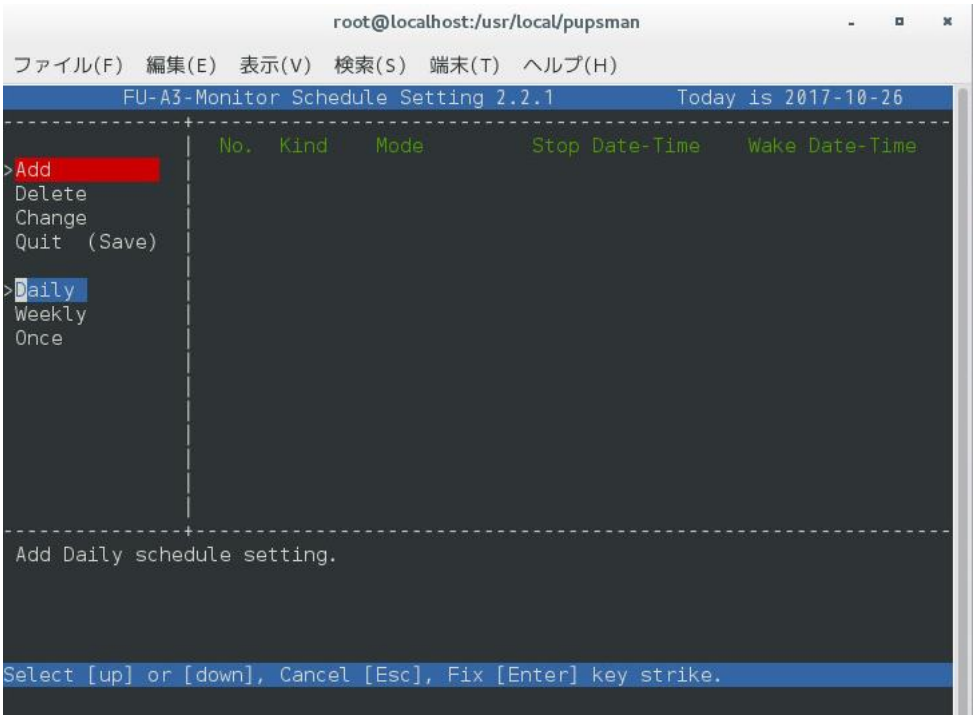


Chart 4 Schedule main screen



Char 5 Schedule kind selection screen

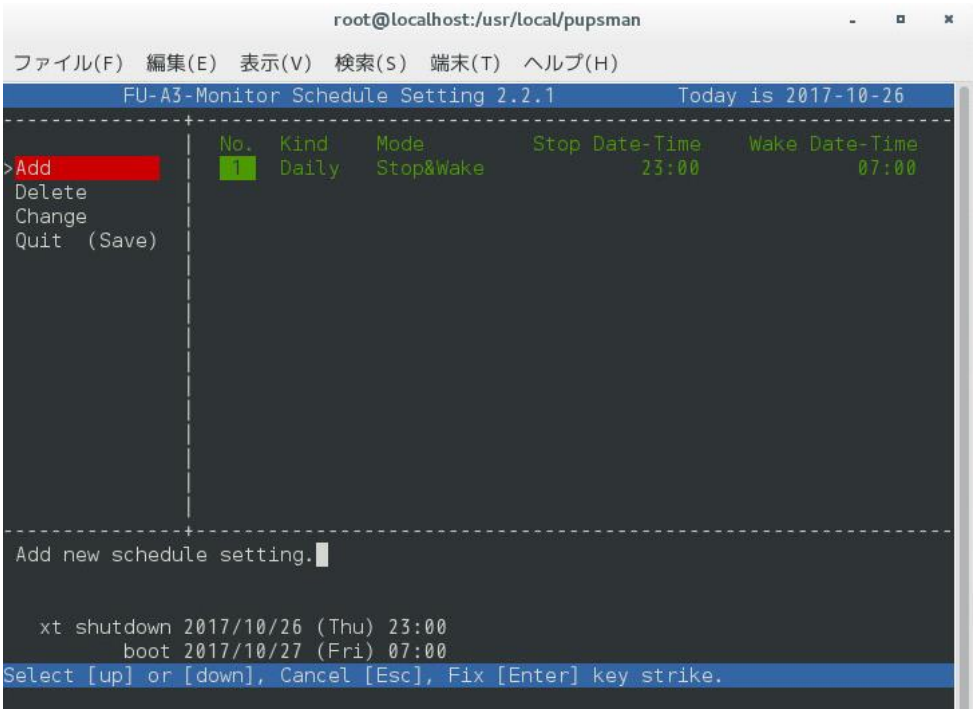


Chart 6 Preservation of schedule setting change

The contents of the schedule setting are interlocked with the display on the console monitor.

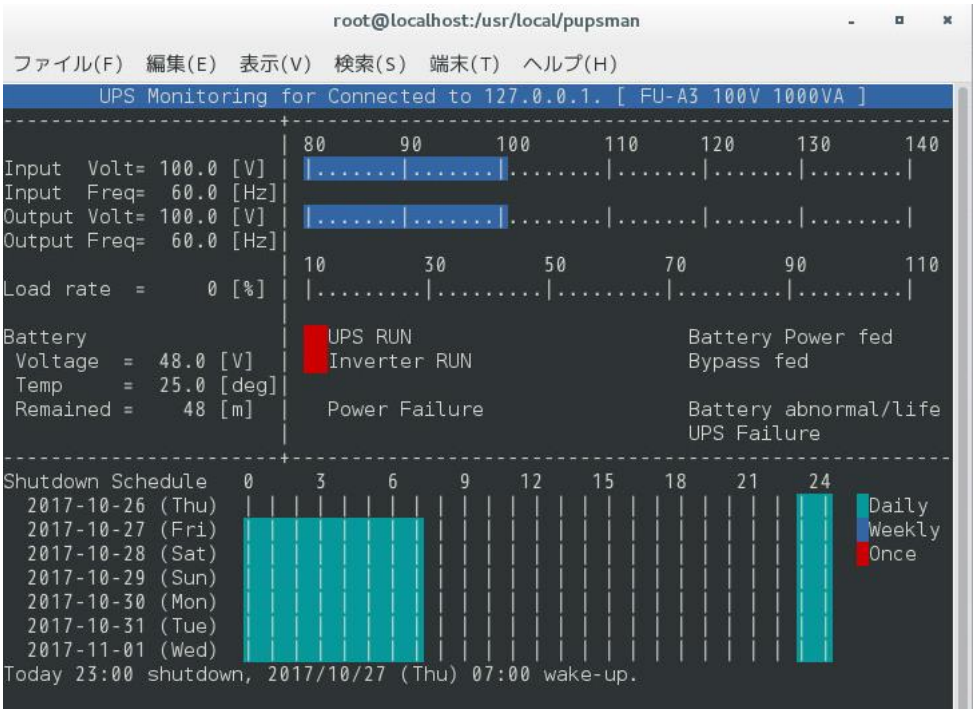


Chart 7 Monitor screen when schedule registration is done

Caution: When using Red Hat Enterprise Linux ES 3, ES 4, even if an error occurs during UPS polling communication with FU - A 3 - Monitor and UPS, "0" will be displayed except for battery life, and FU - A 3 - Monitor connection The display inside is not changed.

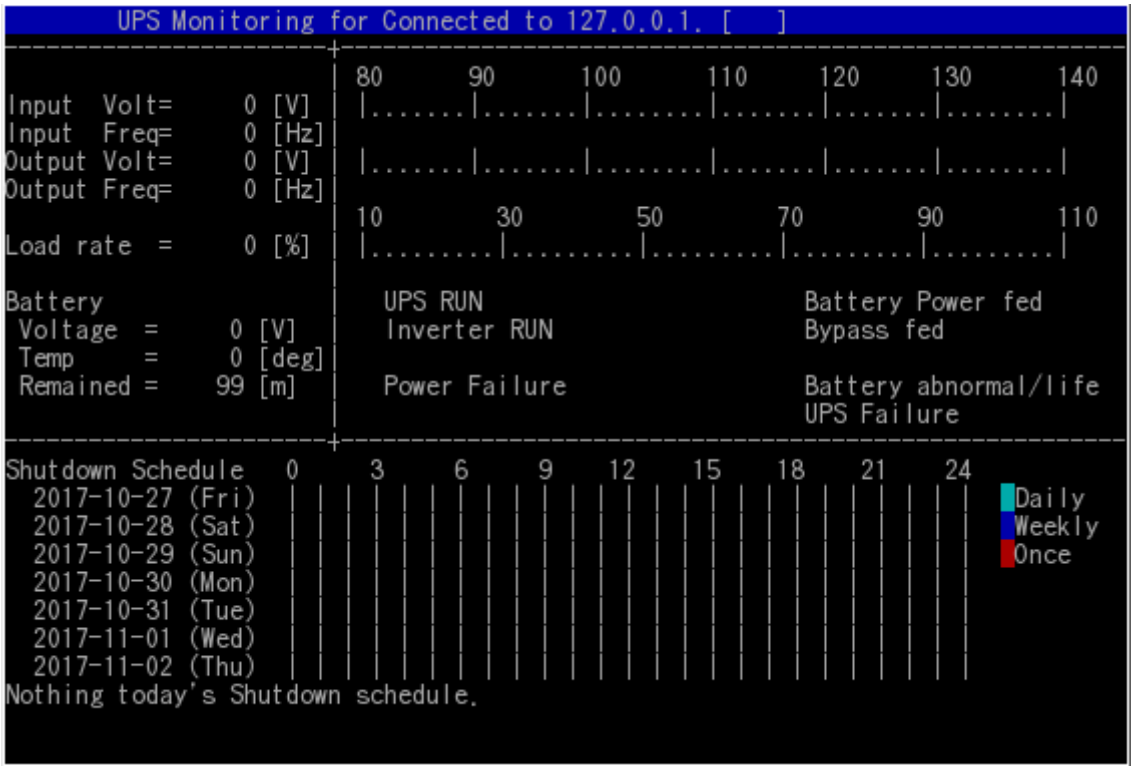


Chart 8 Communication fault in Red Hat Enterprise Linux ES 3, ES 4.

Uninstalling procedure of FU-α3-Monitor

To uninstall it, it does from the rpm command.

```
rpm –e FU-A3-Monitor
```