

# **Simple Shutdown Software (Linux version)**

## **Instruction Manual**

Thank you for choosing our product.

This document describes the Installation Procedure, How to Use, Precautions for Correct Use and other essential information about Simple Shutdown Software (Linux version). Please read this before you start using the software.

Also, please read the instruction manual that comes with the main body of Uninterruptible Power Supply (UPS) before you start using this software.

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## **The intended usages**

The software is designed and produced for use on office and home PCs. Never use this software for the following purposes that demand extremely high reliability and safety.

1. Use for the medical equipment directly related to human life.
2. Use for the purpose that can lead to personal injury. (Use for purpose that is directly related to the service, operation or control of aircraft, ship, train, elevators, etc.)
3. Use for the necessary computer system, trunk line communication system, public transportation systems, and so on.
4. Use for any devices applicable to any of the above.

## **Precautions for Correct Use**

Follow the precautions listed below when using this software and its related documents (hereinafter, collectively referred to as "this program").

1. You can use this program for any purposes, but Omron Corporation (hereinafter, referred to as "the company") does not bear any warranties whatsoever. Warranties here include, but not limited to; warranty in that there is no defect in this program, commercial warranty, warranty of compatibility for specific use, warranty of non-infringement. If there is some sort of defects in this program, or this program causes any harm or damage, the company does not bear any responsibility. Also, the costs of necessary services, restoration, and/or repair shall be borne by the customer accordingly.
2. The copyright of this program (including its copies) belongs to the company.
3. The customer can copy this program. However, such copies must have the appropriate copyright notation and it should be stated clearly and properly that there is no warranty provided to them.
4. The customer can modify this program by complying with the items listed below.
  - (1) Appropriate copyright should be displayed in this program clearly and properly.
  - (2) If this program has been modified, it should be clearly and properly displayed in this program.

5. The customer can distribute this program to a third party by complying the items below.
  - (1) Appropriate copyright should be displayed in this program clearly and properly.
  - (2) When distributing the program after the modification, it should be clearly and properly shown in this program in accordance with Paragraph 4 that this program has been modified.
  - (3) The fact that this program is provided through download with no charge, and how this program is acquired should be clearly displayed.
  - (4) The fact that the company does not provide warranty for this program should be clearly and properly displayed.
  - (5) It should be ensured that those to whom this program is distributed will display and comply with the precautions mentioned so far.
6. The customer should not distribute this program as-is to any third party on a chargeable basis.

## **Requests on the operation**

1. The contents of this software and the document may change in the future, without prior notice.
  2. While we have made every effort to keep perfection of the contents of this software and the document, please let us know if you notice an error or other points by any chance.
  3. Some screens and other visual items shown in this document may differ from the actual ones.
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## How to connect with the Uninterruptible Power Supply (UPS)

In this section, taking BN150XR as an example, we explain the procedure for connecting the PC with Uninterruptible Power Supply (UPS) using the attached cable. Connect the PC and Uninterruptible Power Supply (UPS) according to the following procedure.

### [Before connecting the attached cable]

1. Check the instruction manual of each Uninterruptible Power Supply (UPS) for how to connect the AC input plug of the PC and Uninterruptible Power Supply (UPS).
2. Check that the "power switches" of both PC and Uninterruptible Power Supply (UPS) are turned off.

### [When the power switches of PC and Uninterruptible Power Supply (UPS) are turned on]

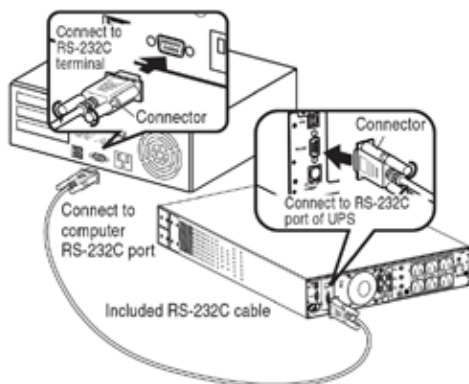
Shutdown the OS and turn off the "power switch" of PC. Then, turn off the "power switches" of Uninterruptible Power Supply (UPS).

### [Connect the attached cable]

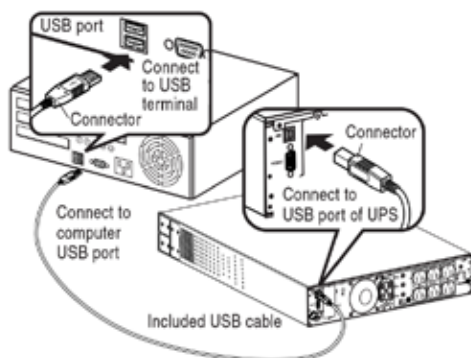
Make sure you follow the steps shown in the diagram below when connecting the PC and Uninterruptible Power Supply (UPS) using the attached cables for establishing communication between them. Tighten the connector fixture screws of the attached cable and make sure to fix the connector.

**Note: Use the attached cable included in the package of Uninterruptible Power Supply (UPS) or optional parts when connecting.**

### [For the serial port connection]



**[For the USB serial port connection]**



### **[Turn on the power switch]**

1. Turn on the "power switch" of Uninterruptible Power Supply (UPS.)
2. Turn on the "power switch" of the PC.

### **[Caution when connecting the cable]**

- Use the attached cable included in the package of Uninterruptible Power Supply (UPS) and its options when connecting the RS-232C port of Uninterruptible Power Supply (UPS) and the serial port of PC, or the USB ports of Uninterruptible Power Supply (UPS) and PC.
- For cable connection, make sure to use Omron's Uninterruptible Power Supply (UPS) and the attached cable dedicated to the OEM-supplied Omron Uninterruptible Power Supply (UPS). Do not use this cable for any communication devices or any other company's Uninterruptible Power Supply (UPS.)
- There is some PC model with two serial ports and the BIOS setting related to its Serial 2 (Serial B) set to "Disable." Therefore, change the setting to "Enable" when using Serial 2 (Serial B) in such a model. How to check and change the BIOS settings depends on the PC you use. For details, please refer to the PC's instruction manual, or contact PC manufacturer's support center.

#### **<Reference information>**

Please select the PC that fulfills the following conditions when you are considering the system where PC is to automatically start up once the input power is recovered. For the PC operation when the input power is supplied, please refer to the PC's instruction manual, or contact PC manufacturer's support center.

[Conditions]

PC to be selected should be designed in such a way that its power supply is turned on when the input power is provided, without pressing the power switch.

## Before installing the software

This chapter explains the matters necessary to know before installing the software.

### **[Precaution during installation]**

- Start installing the software after checking that the OS can be normally terminated in your computer environment. Note that even if this software is installed in an environment where OS cannot be normally terminated, the shutdown operation cannot be performed correctly by using it.
- When using other automatic shutdown software, make sure to uninstall that software first, restart the OS and then install this software. Refer to the instruction manual of each software for how to uninstall.
- Read "How to Connect with Uninterruptible Power Supply (UPS)," make the connection and then install this software.
- This software can be used only on Omron's Uninterruptible Power Supply (UPS) and OEM-supplied Omron Uninterruptible Power Supply (UPS). Refer to the "operation environment" for the target models of Uninterruptible Power Supply (UPS).

## Installation of Simple Shutdown Software

### 1. Operation environment

Check the operation environment before installation.

Supported PCs	DOS/V machines and NEC PC98-NX product family machines (Cannot be used on the NEC PC9801 and 9821 product families.) (Cannot be used on Apple Macintosh and other compatible machines.)	
Verified OS and platform	Red Hat Enterprise Linux Ver.6.x CentOS ver5.x	x86,AMD64,EM64T
RAM	64MB or more	
Hard disk capacity	80MB or more	
Interface	RS-232C/USB	

<Reference information>		
EM64T	Intel's 64 bit CPU (Pentium4, Xeon, etc.) where Intel 64-bit Extension Technology is mounted.	
AMD64	AMD's 64 bit CPU (Opteron, Athlon, etc.)	
X86	32 bit CPU by Intel and AMD64 (Pentium4, Xeon, Celeron, Athlon, etc.)	



## 2. Installation procedure

### <Precaution>

- Install the shutdown software by logging in with the user name having the root authority.
- Two separate versions are provided: 32bit version and 64bit version. Use the version that suits your environment.

- (1) The files necessary for installation are stored in the "Release" directory.  
Execute the following procedure.

[To install this software by using the installation CD-ROM]

Copy the "Release" directory into any directory in the computer in which you are going to install the software.

[When this software is downloaded from our Website]

Unzip the downloaded file.

- (2) Change the access permission for files and folders under the "Release" directory to Full Access Permission.

Command: `chmod -R 777 Release`

- (3) Move to the "Release" directory.

Command: `cd Release`

- (4) Execute the following command to install the software.

Command: `./install.sh`

- (5) "Software License Agreement" appears.

When "Do you agree this license?" appears last, type "y" if you agree, and otherwise, type "N".

If you type "N", the installation process does not start.

(6) When the installation process is executed, the message below will appear and the installation process will become complete.

```
Simple Shutdown Daemon program has been installed completely.  
Please run below command and setup the parameters of  
Simple Shutdown Daemon to meet your system.
```

```
Command: /usr/lib/ssd/master/config.sh
```

According to the content of the message, set the shutdown parameters.

## Shutdown parameter setting

Set the shutdown parameters of the PC connected to Uninterruptible Power Supply (UPS.)

### [Procedure]

1. Enter the following command to start setting parameters.  
/usr/lib/ssd/master/config.sh

2. Set the shutdown parameters.

The setting screen and display details are as follows:

#### (1) Specifying the communication port

Select the port that is connected to the Uninterruptible Power Supply (UPS) automatically or manually.

```
1. Port Selection Mode:
  1. Auto Mode(Select all COM and USB device)
  2. Semiautomatic Mode(Only select all USB device)
  3. Manual Mode(Only select pointed COM port)
  (Default Mode is "Auto Mode(Select all COM and USB device)")
  Select Number:
```

#### (2) Selecting a USB communication mode

Select the mode to use for USB communication between Libusb and HID

```
2. Select USB communication mode
  1. Libusb 2. HID
  (Default Mode is "Libusb")
  Select Number:
```

#### (3) Delay time

Set the delay time from when an abnormality occurs in the power supply until shutdown operation starts.

```
3. AC fail delay time
  (Default value is 60 Sec)
  [Information]
  * When UPS detects "AC fail" condition doesn't start shutdown action
    until pass this delay time.
  * The range of AC fail delay time is from 0 Sec to 36000 Sec.
  * The step between "0 Sec to 36000 Sec" is "1 Sec".
  AC fail delay time(Sec):
```

#### (4) External command line

##### 4. External Command Line

[Information]

- \* After the AC fail delay time this External Command line will be execute
- \* Please setup an External Command

External Command Line:

#### (5) External command needs time

##### 5. External Command needs time

(Default value is 0 Sec)

[Information]

- \* Please setup an External Command needs time from External Command start to External Command finish.
  - \* The range of External Command need time is from 0 Sec to 600 Sec.
  - \* The step between "0 Sec to 600 Sec" is "60 Sec".
  - \* If you use External Command for Virtual Server shutdown, please setup External Command needs time for Guest OS shutdown.
- External Command needs time (Sec):

#### (6) OS shutdown need time

Set the time necessary for shutting down the OS.

##### 6. OS shutdown need time

(Default value is 180 Sec)

[Information]

- \* Please setup an OS shutdown needs time from OS shutdown start to OS shutdown finish.
  - \* The range of OS Shutdown need time is from 0 Sec to 600 Sec.
  - \* The step between "0 Sec to 600 Sec" is "60 Sec".
- OS shutdown needs time (Sec):

#### (7) Send Message

Select whether to display a warning message when an event occurs.

##### 7. Send Message to login users

1. Disable 2. Enable

(Default Value is "Disable")

Select Number:

#### (8) System closing mode

Select how to exit between Shutdown and Hibernate.

```
8. System closing mode
  1. Shutdown 2. Hibernate
  (Default Mode is "Shutdown")
  Select Number:
```

\* If the installation environment is not a virtual environment using KVM, the setting procedure ends in (8). When the setting operation in (8) is performed, the List screen for the entered details appears.

#### (9) Virtual Server shutdown mode

Select which to use for exiting between the settings of the system and the settings of this software.

```
9. Virtual Server shutdown mode
  1. Shutdown by Linux system 2. Shutdown by Simple Shutdown
  (Default Mode is "Shutdown by Linux system")
  Select Number:
```

\* If 1.Shutdown by Linux system is selected in (9), the setting procedure ends in (9). In this case, the guest OS is exited according to the settings of the Linux system. When the setting operation in (9) is performed, the List screen for the entered details appears.

#### (10) Guest OS shutdown mode

Select how to exit the guest OS.

```
10. Guest OS shutdown mode
  1. Shutdown 2. Suspend
  (Default Mode is "Shutdown")
  Select Number:
```

- When the shutdown parameters are all set, the List screen for the entered details appears. Check the entered details. If no correction is required, enter '1'. If you start again from the beginning by deleting the entered details, enter '2'.

```

*****
[Reconfirm shutdown parameter of the PE1950-localhost.localdomain (Master Agent)].
*****
1. Port Selection Mode:          Auto Mode(Select all COM and USB device)
2. Select USB communication mode : Libusb
3. AC fail Delay time (Sec):    60
4. External Command Line:
5. External Command needs time (Sec): 60
6. OS Shutdown needs time (Sec): 120
7. Send Message to login users: Enable
8. System closing mode :       Shutdown
9. Virtual Server shutdown mode : Shutdown by Simple Shutdown
10. Guest OS shutdown mode :   Shutdown
*****
1.OK 2.Cancel
Select Number:

```

When the setting operation is completed, the simple shutdown daemon (hereinafter called as the "Agent") starts up.

## Startup and stop of the agent

This section explains how to startup and stop the agent.

### [Procedure]

- Enter the following command:  
/usr/lib/ssd/master/AgentManager
- When the screen below appears, stop or start the Agent and select "0. Exit" to close the menu.
 

```

1. Agent Start
2. Communication Port
3. Version Information
0. Exit

```

### <Precaution>

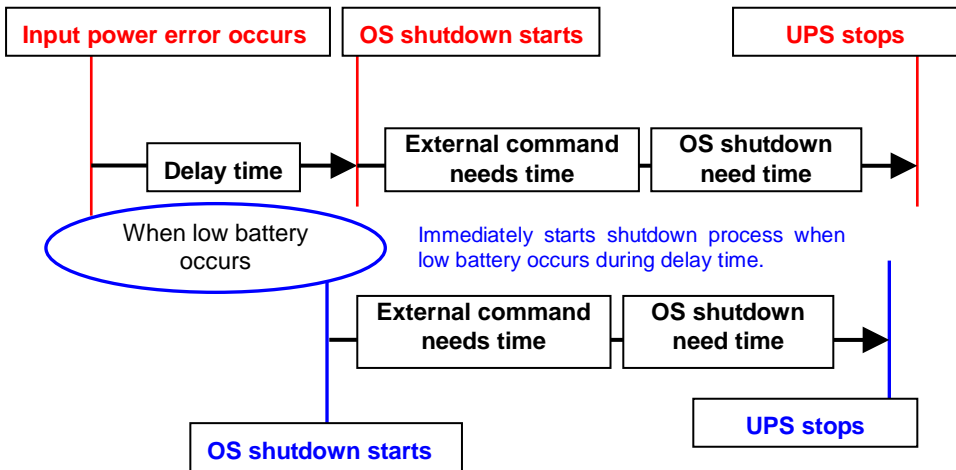
Execute Config.sh when the agent is suspended. (The agent is suspended immediately after the installation process is completed.)

### <Additional notes>

#### [1. Agent Stop/Start]

Startup or stop of the master agent is possible. "Stop" and "Start" appears alternately each time a choice is made.

## Shutdown sequence



## Uninstallation of Simple Shutdown Software

### [Procedure]

- (1) Move to the directory where the shutdown software was unzipped.  
Command: `cd /*/Release` (\* is the name of the unzip destination directory)

### <Precaution>

Uninstall the shutdown software by logging in with the user name having the root authority.

- (2) Execute the following command to uninstall the software.  
Command: `./uninstall.sh`
- (3) Restart the OS when the uninstallation process is completed.

<p style="text-align: center;"><b>For use on a distribution other than Red Hat Enterprise Linux and CentOS</b></p>
--

1. Compile the source files (\*1), create the execution files, "AgentManager", "Config.sh", "omronctl", "ssdService", and "ssdDaemon", and place them under the "/Release/master" directory.  
Modify the source, if necessary.
2. Place the "install.sh" file into the "/Release" directory and execute install.sh.  
Command: ./install.sh

\*1: Refer to "Compiling the source files" in the next section.



## Compiling the source files

The source files for Simple Shutdown Software (Linux version) are stored in the "/Source" directory as follows:



The directories "AgentManager", "Config", "omronctl", "ServiceKernel", and "ShutdownSoftware" store source files and "Makefile".

These source files and "Makefile" correspond to the execution files for AgentManager, Config.sh, omronctl, ssdService, and ssdDaemon.

### [Compile]

- **AgentManager: Program for starting up/stopping the Agent**  
Execute the "make" command in the "/Source/AgentManager" directory. (\*2)  
*AgentManager* is created in "/Release/master".
- **Config.sh: Program for setting the shutdown operation**  
Execute the "make" command in the "/Source/Config" directory. (\*2)  
*Config.sh* is created in "/Release/master".
- **omronctl: Program for setting the schedule**  
Execute the "make" command in the "/Source/omronctl" directory. (\*2)  
*omronctl* is created in "/Release/master".
- **ssdService: Program for executing the SimpleShutdownSoftware service**  
Execute the "make" command in the "/Source/ServiceKernel" directory. (\*2)  
*ssdService* is created in "/Release/master".

- **ssdDaemon: Main program for executing such operation as shutdown**  
Execute the "make" command in the "/Source/ShutdoenSoftware" directory. (\*2)  
ssdDaemon is created in "/Release/master".
  - **All modules** (*AgentManager, Config.sh, omronctl, ssdService, ssdDaemon*)  
Execute the "make" command in the "/Source" directory. (\*2)  
AgentManager, Config.sh, omronctl, ssdService, and ssdDaemon are  
generated together in "/Release/master".
- \*2: To execute the "make" command, the gcc package is needed.  
Install the gcc package from the OS CD-ROM.

## Scheduled operation

By executing "omronctl" contained in the /usr/lib/ssd/master/ directory, you can perform scheduled operation in conjunction with the UPS.

Note that you cannot execute omronctl if the Agent of Simple Shutdown Software is not running.

Command:	Function
omronctl	Shut down the OS and the UPS. To restart the UPS, turn on the power switch on the UPS unit.
omronctl -O YYYY/MM/DD.hh:mm	Restart the UPS at the specified time after shutting down the OS and the UPS.
omronctl /f/r	Restart the system.

When omronctl is executed from another application, if the execution result turns out to be an error, returns one of the following error codes to the application that executed omronctl.

Error code	Description	Correction
501	The Agent of Simple Shutdown Software is stopped.	Start up the Agent of Simple Shutdown Software.
502	Cannot communicate with the UPS.	Check that the UPS and the computer are connected to each other correctly with the communication cable.
503	The command is executed twice.	Wait until the active command is completed.
504	The set parameter is not correct.	Set a correct parameter.
505	The scheduled operation cannot be performed because the time for turning the power ON is set earlier than the time the UPS stops.	Set the power-ON time later than the time the UPS stops.

## Helpful tips

- I would like to know whether Simple Shutdown Software is running.

**Answer:**

Enter the "ps -e | more" command: If "ssdService, ssdDaemon" is displayed in the list, the shutdown software is running.

- I would like to know what kinds of files "Shutdown.cfg" and "S99SimpleShutdoenDaemon" are.

**Answer:**

Shutdown.cfg: A file in which the shutdown parameters are recorded.

S99SimpleShutdoenDaemon: A file for automatically starting "ssdService" at OS startup.

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