

Power Management Software

PowerPanel for Linux

Rev. 3

April 2022

SAVE THESE INSTRUCTIONS

Please read this manual and follow the instructions for installation and use.

ELECTRONIC END USER LICENSE AGREEMENT FOR CYBERPOWER POWERPANEL

NOTICE TO USER:

PLEASE READ THIS END USER LICENSE AGREEMENT ("EULA") CAREFULLY BEFORE USING THE CYBERPOWER SOFTWARE. This EULA governs your use of the software, associated hardware, their associated modified versions, upgrades, patches, and updates and related services ("Product") currently provided or which will be provided by Cyber Power Systems, (USA), Inc. or any one of its subsidiaries or affiliated companies ("CyberPower").

BY USING THE PRODUCT, YOU ARE AGREEING TO BE BOUND BY THE TERMS OF THIS EULA. BY INSTALLING OR USING THE PRODUCT, YOU AGREE TO ACCEPT AND TO BE BOUND BY THIS EULA. IF YOU DO NOT AGREE TO THE TERMS OF THIS EULA, DO NOT INSTALL AND/OR USE THE PRODUCT AND, IF PRESENTED WITH THE OPTION TO "AGREE" OR "DISAGREE" TO THE TERMS, CLICK "DISAGREE". IF YOU ACQUIRED THE PRODUCT AS PART OF A CYBERPOWER HARDWARE PURCHASE AND IF YOU DO NOT AGREE TO THE TERMS OF THIS EULA, YOU MAY RETURN THE ENTIRE CYBERPOWER HARDWARE/SOFTWARE PACKAGE WITHIN THE RETURN PERIOD TO THE STORE OR DISTRIBUTOR WHERE YOU OBTAINED IT FOR A REFUND, SUBJECT TO ANY APPLICABLE RETURN POLICY. YOU MUST RETURN THE ENTIRE HARDWARE/ SOFTWARE PACKAGE IN ORDER TO OBTAIN A REFUND.

EULA Terms:

1. Grant of License. Upon your acceptance of this EULA, Cyber Power Systems (USA), Inc. and its affiliates grants to you a nonexclusive, nontransferable, revocable license to use the Product subject to the terms of this EULA. This Product is being licensed, not sold, to you by CyberPower under the terms of this EULA. CyberPower and/or CyberPower's licensors retain ownership of the Product, including underlying software and copyrights, and reserves all rights not expressly granted to you. You may not lease, rent, sublicense, publish, copy, modify, adapt, translate, reverse engineer, decompile, or

disassemble all or any portion of the Product without CyberPower's consent, except as expressly authorized hereunder.

2. Use of the Product. You may install the Product on a hard disk or other storage device and use it; install and use the Product on a file server for use on a network for the purposes of (i) permanent installation onto hard disks or other storage devices or (ii) use of the Product over such network; and make backup copies of the Product. This EULA shall commence and bind the parties on the earliest such date of installation.

You may make and distribute unlimited copies of the Product for your use, as long as each copy that you make and distribute contains this EULA, the CyberPower PowerPanel installer, and the same copyright and other proprietary notices pertaining to this Product that appear in the Product. If you download the Product from the Internet or similar on-line source, you must include the copyright notice and a copy of this EULA for the Product with any on-line distribution and on any media you distribute that includes the Product.

3. Copyright and Trademark Rights. The Product is owned by Cyber Power Systems (USA), Inc., its affiliates, its suppliers, and its structure, organization and code are the valuable trade secrets of its Cyber Power Systems (USA), Inc. and its affiliates and its suppliers. The Product also is protected by United States Copyright Law and International Treaty provisions. The Product involves trademarks belonging to CyberPower. You may use the Product only insofar as required to comply with Section 1 of this EULA and to identify printed output produced by the Product, in accordance with accepted trademark practice, including identification of trademark owner's name. Such use of any trademark does not give you any rights of ownership in that trademark. Except as stated above, this EULA does not grant you any intellectual property rights in the Product. Your infringement of any intellectual property rights retained by CyberPower shall immediately terminate your license.
4. Restrictions. You agree not to modify, adapt, translate, reverse engineer, decompile, disassemble or otherwise attempt to discover the source code of all or any part of the Product. Although you may customize the installer for the Product as documented on the CyberPower PowerPanel Disk (e.g., installation

of additional plug-in and help files), you may not otherwise alter or modify the installer program or create a new installer for the Product. User shall not exceed the license nodes that come standard or have been purchased by the user.

5. Termination. Any violation of this EULA shall immediately terminate your license without prior notice or refund. You may also terminate this EULA by permanently deleting, destroying and returning at your own cost the Product and any copies thereof. Once terminated, you must stop using the Product.
6. Disclaimer of Warranties. The Product is being delivered to you AS IS and its supplier makes no warranty as to its use or performance, compatibility, appropriateness, or other performance. CYBER POWER SYSTEMS (USA), INC., ITS AFFILIATES AND ITS SUPPLIERS DO NOT AND CANNOT WARRANT THE PERFORMANCE OR RESULTS YOU MAY OBTAIN BY USING THE PRODUCT OR DOCUMENTATION. CYBER POWER SYSTEMS (USA), INC., ITS AFFILIATES, AND ITS SUPPLIERS MAKE NO WARRANTIES, EXPRESS OR IMPLIED, AS TO NONINFRINGEMENT OF THIRD-PARTY RIGHTS, MERCHANTABILITY, OR FITNESS FOR ANY PARTICULAR PURPOSE. IN NO EVENT WILL CYBER POWER SYSTEMS (USA), INC., ITS AFFILIATES OR ITS SUPPLIERS BE LIABLE TO YOU FOR ANY CONSEQUENTIAL, INCIDENTAL OR SPECIAL DAMAGES, INCLUDING ANY LOST PROFITS OR LOST SAVINGS, EVEN IF CYBER POWER SYSTEMS (USA), INC. REPRESENTATIVE HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES, OR FOR ANY CLAIM BY ANY THIRD PARTY.

YOU EXPRESSLY ACKNOWLEDGE AND AGREE THAT, TO THE EXTENT PERMITTED BY APPLICABLE LAW, USE OF THE CYBERPOWER PRODUCT AND ANY SERVICES PERFORMED BY OR ACCESSED THROUGH THE CYBERPOWER PRODUCT IS AT YOUR SOLE RISK AND THAT THE ENTIRE RISK AS TO SATISFACTORY QUALITY, PERFORMANCE, ACCURACY AND EFFORT IS WITH YOU. YOU AGREE THAT CYBERPOWER IS NOT RESPONSIBLE FOR ANY LOSSES, DAMAGES, MALFUNCTIONS OR OTHER HARM OR DAMAGE AS A RESULT OF YOUR DECISION TO SELECT THE PRODUCT AND USE IT WITH ANY OF YOUR HARDWARE, SOFTWARE, OR OTHER ELECTRONICS.

CYBERPOWER DOES NOT WARRANT AGAINST INTERFERENCE WITH YOUR ENJOYMENT OF THE CYBERPOWER PRODUCT AND SERVICES, THAT

THE FUNCTIONS CONTAINED IN, OR SERVICES PERFORMED OR PROVIDED BY, THE CYBERPOWER PRODUCT WILL MEET YOUR REQUIREMENTS, THAT THE OPERATION OF THE CYBERPOWER PRODUCT OR SERVICES WILL BE UNINTERRUPTED OR ERROR-FREE, THAT ANY SERVICES WILL CONTINUE TO BE MADE AVAILABLE, THAT THE CYBERPOWER PRODUCT OR SERVICES WILL BE COMPATIBLE OR WORK WITH ANY THIRD PARTY PRODUCT, APPLICATIONS OR THIRD PARTY SERVICES, OR THAT DEFECTS IN THE CYBERPOWER PRODUCT OR SERVICES WILL BE CORRECTED. INSTALLATION OF THIS CYBERPOWER PRODUCT MAY AFFECT THE AVAILABILITY AND USABILITY OF THIRD-PARTY PRODUCT, APPLICATIONS OR THIRD-PARTY SERVICES, AS WELL AS CYBERPOWER PRODUCTS AND SERVICES.

YOU FURTHER ACKNOWLEDGE THAT THE CYBERPOWER PRODUCT AND SERVICES ARE NOT INTENDED OR SUITABLE FOR USE IN SITUATIONS OR ENVIRONMENTS WHERE THE FAILURE OR TIME DELAYS OF, OR ERRORS OR INACCURACIES IN THE CONTENT, DATA OR INFORMATION PROVIDED BY, THE CYBERPOWER PRODUCT OR SERVICES COULD LEAD TO DEATH, PERSONAL INJURY, OR SEVERE PHYSICAL OR ENVIRONMENTAL DAMAGE, INCLUDING WITHOUT LIMITATION THE OPERATION OF NUCLEAR FACILITIES, AIRCRAFT NAVIGATION OR COMMUNICATION SYSTEMS, AIR TRAFFIC CONTROL, LIFE SUPPORT OR WEAPONS SYSTEMS.

NO ORAL OR WRITTEN INFORMATION OR ADVICE GIVEN BY CYBERPOWER OR A CYBERPOWER AUTHORIZED REPRESENTATIVE SHALL CREATE A WARRANTY. SHOULD THE CYBERPOWER PRODUCT OR SERVICES PROVE DEFECTIVE, YOU ASSUME THE ENTIRE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION. SOME JURISDICTIONS DO NOT ALLOW THE EXCLUSION OF IMPLIED WARRANTIES OR LIMITATIONS ON APPLICABLE STATUTORY RIGHTS OF A CONSUMER, SO THE ABOVE EXCLUSION AND LIMITATIONS MAY NOT APPLY TO YOU.

Some states or jurisdictions do not allow the exclusion or limitation of incidental, consequential or special damages, or the exclusion of implied warranties or limitations on how long an implied warranty may last, so the above limitations may not apply to you.

7. Limitation on Liability. Regardless of the basis on which you are entitled to

claim damages from CyberPower (including material breach, negligence, misrepresentation, or other contract or tort claim), CyberPower's entire liability for all claims in the aggregate arising from or related to THE PRODUCT or otherwise arising under this EULA will not exceed the amount of any actual direct damages up to the greater of THE RETAIL PRICE PAID FOR THE PRODUCT. IN NO EVENT WILL CYBERPOWER BE LIABLE TO YOU FOR INJURY OR DAMAGE TO BUSINESS, PROFITS, REVENUES OR YOUR GOODWILL OR FOR ANY CONSEQUENTIAL OR INCIDENTAL DAMAGES, HOWEVER CAUSED, WHETHER FOR BREACH OF WARRANTY, BREACH OF CONTRACT, REPUDIATION OF CONTRACT, TERMINATION, NEGLIGENCE, OR OTHERWISE, EVEN IF IT HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

8. Limitation on Claims. ARBITRATION NOTICE: You agree that disputes between you and CyberPower will be resolved by binding, individual arbitration before a single arbitrator agreed upon by the parties, via arbitration in Scott County, Minnesota, under rules and procedures agreed with the arbitrator or in the absence of the same, as if the case was pending in court upon Minnesota Law, with each party paying one half of the costs and fees for arbitration, and each party paying their own attorney's fees. You waive your right to participate in a class action lawsuit or class-wide arbitration. CyberPower reserves the right to protect its intellectual property and trade secrets by court action under applicable law, including by seeking an injunction, which rights shall not be abridged by this EULA. The parties agree that the that any breach of your obligations under this EULA will cause irreparable harm to CyberPower, including by example and not limitation, loss of ability to protect important trade secrets, confidential and proprietary information and similar rights; therefore, CyberPower shall have, in addition to any remedies available at law, the right to obtain equitable relief to enforce this EULA.

9. Consent to Use of Data.

A. Diagnostic and Usage Data. If you choose to allow diagnostic and usage collection, you agree that CyberPower may collect, maintain, process and use diagnostic, technical, usage and related information, including but not limited to unique system or hardware identifiers, information about your computer, system and application software, and peripherals, that is gathered periodically to provide and improve CyberPower's products and services, facilitate the provision of software updates, product support and other

services to you (if any) related to the CyberPower Product, and to verify compliance with the terms of this EULA.

B. CyberPower may use this information, as long as it is collected in a form that does not personally identify you, for the purposes described above. To enable CyberPower's partners and third-party developers to improve their software, hardware and services designed for use with CyberPower products, CyberPower may also provide any such partner or third-party developer with a subset of diagnostic information that is relevant to that partner's or developer's software, hardware and/or services, as long as the diagnostic information is in a form that does not personally identify you.

C. Privacy Policy. At all times your information will be treated in accordance with CyberPower's Privacy Policy, which can be viewed at: <https://www.cyberpowersystems.com/company/privacy-policy/>

10. Governing Law and General Provisions. This EULA will be governed by the laws of the State of Minnesota, U.S.A., excluding the application of its conflicts of law rules. This EULA will not be governed by the United Nations Convention on Contracts for the International Sale of Goods, the application of which is expressly excluded. If any part of this EULA is found void and unenforceable, it will not affect the validity of the balance of the EULA, which shall remain valid and enforceable according to its terms. This EULA shall automatically terminate upon failure by you to comply with its terms. This EULA may only be modified in writing signed by an authorized officer of Cyber Power Systems (USA), Inc.
11. Compliance with Law; Export Control. You will comply with all national and international laws, rules and regulations that apply to the Product and your use of the Product as well as end-user, end-use and destination restrictions issued by the United States or other governments. You agree that the Product will not be shipped, transferred, exported or re-exported into any country or used in any manner prohibited by the United States Export Administration Act or any other export laws, restrictions or regulations. In particular, but without limitation, the Product may not be exported or re-exported (a) into any U.S. embargoed countries or (b) to anyone on the U.S. Treasury Department's list of Specially Designated Nationals or the U.S. Department of Commerce Denied Person's List or Entity List. By using the Product, you represent and

warrant that you are not located in any such country or on any such list. You also agree that you will not use the Product for any purposes prohibited by United States law and the applicable laws where you are located, including, without limitation, the development, design, manufacture or production of missiles or nuclear, chemical or biological weapons.

Table of Contents

- 1 Getting Started 8
 - 1.1 The Manual Page 8
 - 1.2 The Daemon Page 11
- 2 Checking Daemon Settings 13
- 3 Monitoring UPS Status 14
- 4 Troubleshooting 15

1 Getting Started

1.1 The Manual Page

Name

`pwrstat` The UPS power state command tool.

Synopsis

`pwrstat` `[-help]` `[-version]`

`pwrstat` `[-status]` `[-config]` `[-reset]` `[-alarm on | off]` `[-mute]` `[-test]` `[-hibernate on | off]`

`pwrstat` `[-pwrfail [-delay [0-3600]] [-active on | off] [-cmd [script_name]] [-duration [0-3600]] [-shutdown on | off] ]`

`pwrstat` `[-lowbatt [-runtime [0-3600]] [-capacity [0-90]] [-active on | off] [-cmd [script_name]] [-duration [0-60]] [-shutdown on | off] ]`

`pwrstat` `[-cloud [-active on | off] [-account [cloud_account]] [-password [cloud_password] ] [-verify]`

Description

pwrstat is an interface in PowerPanel for Linux which allows users to receive UPS status and configure UPS settings. Type the following command to list the manual:

```
man pwrstat
```

Options

The **pwrstat** parameters, their functions, and the examples are described below:

<code>-help</code>	Display the help content.
<code>-version</code>	Display the version of PowerPanel for Linux being used.
<code>-config</code>	Display all daemon configurations. (Users may refer to chapter 2 for details.)
<code>-status</code>	Display the current UPS status. (Users may refer to chapter 3 for details.)
<code>-reset</code>	Reset all daemon configurations to default.
<code>-alarm</code>	Turn UPS alarm on or off. For example: <code>-alarm on</code> .
<code>-mute</code>	Mute UPS alarm temporarily when the alarm is enabled.
<code>-test</code>	Perform battery test.
<code>-hibernate</code>	Make the system hibernate when the power event occurs.
<code>-pwrfail</code>	Set the commands when the power failure occurs. (pwrfail must be followed by at least one of the arguments in Note 1.)
<code>-lowbatt</code>	Set the commands when battery capacity is low.

-
- | | |
|---------|--|
| | (lowbatt must be followed by at least one of the arguments in Note 2.) |
| -cloud | Set the functions related to PowerPanel Cloud solution.
(cloud must be followed by at least one of the arguments in Note 3.) |
| -verify | Verify whether user's PowerPanel Cloud account and password are correct.
(Users may refer to example 3b in chapter 1.1.1 for more details.) |

Note 1

The following arguments should follow **-pwrfail**.

(Users may refer to example 1 in chapter 1.1.1 for more details.)

- | | |
|-----------|---|
| -delay | Set the delay time when the power failure event occurs. The delay time is 60 seconds by default and the maximum delay time is 3600 seconds [0-3600] .
For example: -delay 60. |
| -active | Activate or deactivate the commands when the power failure event occurs.
For example: -active on. |
| -cmd | Assign the command file when the power failure event occurs. |
| -duration | Set how long the time takes to execute the command when the power failure event occurs. The command executed time is 0 second by default and the maximum time is 3600 seconds [0-3600] . For example: -duration 1. |
| -shutdown | Determine whether to shut down the OS when the power failure event occurs.
For example: -shutdown on. |

Note 2

The following arguments should follow **-lowbatt**.

(Users may refer to example 2 in chapter 1.1.1 for more details.)

- | | |
|-----------|---|
| -runtime | Set the remaining runtime threshold when low battery event occurs. The remaining runtime threshold is 300 seconds by default and the maximum time is 3600 seconds [0-3600] . For example: -runtime 300. |
| -capacity | Set the battery capacity threshold when low battery event occurs. The battery capacity threshold is 35% by default and the allowance is 0% ~ 90% [0-90] . For example: -capacity 35. |
| -active | Activate or deactivate the commands when the low battery event occurs. For example: -active on. |
| -cmd | Assign the command file when the low battery event occurs. |
| -duration | Set how long the time takes to execute the command when the low battery event occurs. The command executed time is 0 second by default and the maximum time is 60 seconds [0-60] . For example: -duration 1. |
| -shutdown | Determine whether to shut down the OS when the low battery event occurs.
For example: -shutdown on. |

Note 3

The following arguments should follow **-cloud**.

(Users may refer to example 3a and 3b in chapter 1.1.1 for more details.)

-active	Activate or deactivate PowerPanel Cloud solution. For example: -active on.
-account	Enter user's PowerPanel Cloud account.
-password	Enter user's PowerPanel Cloud password.

Note 4

1. The parameters of **-pwrfail** and **-lowbatt** need to be set independently.
2. Both the shell scripts **pwrstatd-lowbatt.sh** and **pwrstatd-powerfail.sh** will be copied to **/etc** during the installation procedure.
3. The parameter **-cmd** can be any shell script in the system, and it should be run as root in order to modify the settings.
4. The default system settings for **-pwrfail** and **-lowbatt** are the same as Example 1 and 2 in chapter 1.1.1.

1.1.1 The Examples for Configuring pwrstat Options

Example 1: Configure the setting when a power failure event occurs.

```
pwrstat -pwrfail -delay 60 -active on -cmd /etc/pwrstatd-powerfail.sh -duration 1  
-shutdown on
```

In the setting above, it will take 1 second to run a shell script named **pwrstatd-powerfail.sh** in the directory **/etc**, and the system will be shut down after a power failure event occurs for 60 seconds.

Example 2: Configure the setting when the low battery event occurs.

```
pwrstat -lowbatt -runtime 300 -capacity 35 -active on -cmd /etc/pwrstatd-lowbatt.sh  
-duration 1 -shutdown on
```

In the setting above, it will take 1 second to run a shell script named **pwrstatd-lowbatt.sh** in the directory **/etc**, and the system will be shut down when either the remaining runtime is less than 300 seconds, or the battery capacity is lower than 35%.

Example 3a: Configure the connection to PowerPanel Cloud.

```
pwrstat -cloud -active on -account example@cyberpower.com -password pass123
```

* Assuming PowerPanel Cloud account / password: example@cyberpower.com / pass123.

In the setting above, the connection to PowerPanel Cloud will be activated when users correctly enter PowerPanel Cloud account and password.

Example 3b: Verify the connection to PowerPanel Cloud.

```
pwrstat -verify
```

To verify whether the account and password are correct, enter the command above.

There are three results, described below:

1. When both the account and password are correct, the system will show **Verify successfully**.
2. When either the account or password is incorrect, the system will show **Verify failed**.
3. When a network issue exists, the system will show **Connect failed**.

1.2 The Daemon Page

Name

`pwrstatd` The UPS power state daemon.

Description

pwrstatd is the daemon of PowerPanel for Linux which runs immediately when the system starts up and communicates with the UPS. Type the following command to list the operations and the configuration files of daemon:

```
man pwrstatd
```

Operations of the Daemon

The commands for operating the **pwrstatd** daemon and their functions are described below:

<code>/etc/init.d/pwrstatd start</code>	start pwrstatd daemon
<code>/etc/init.d/pwrstatd stop</code>	stop pwrstatd daemon
<code>/etc/init.d/pwrstatd restart</code>	restart pwrstatd daemon
<code>/etc/init.d/pwrstatd status</code>	show the running status of pwrstatd daemon

Configuration Files of the Daemon

The configuration files and their functions are described below:

<code>/etc/pwrstatd.conf</code>	The configuration file of pwrstatd, including the options for shutting down or hibernating UPS when the power event occurs.
<code>/etc/pwrstatd-lowbatt.sh</code>	The default shell command is sending the e-mail notification. When the low battery event occurs, the notification e-mail will be sent if it is enabled and both the recipient and the sender e-mail addresses are correctly entered. Users can also add user-defined commands.
<code>/etc/pwrstatd-powerfail.sh</code>	The default shell command is sending the e-mail notification. When the power failure event occurs, the notification e-mail will be sent if it is enabled and both the recipient and the sender e-mail addresses are correctly entered. Users can also add user-defined commands.
<code>/etc/pwrstatd-email.sh</code>	The default shell command of e-mail content. When either the low battery or power failure event occurs, it will be sent to users.

Note 5

pwrstatd.conf can be edited by using any text editor. To start editing the configuration file, type

the following command as root:

```
vi/etc/pwrstatd.conf
```

* Take the text editor, vi, for example.

The changes edited in the text editor will take effect after restarting **pwrstatd**. To restart the daemon, type the following command:

```
/etc/init.d/pwrstatd restart
```

Note 6

To send the e-mail content in **/etc/pwrstatd-email.sh**, it is necessary to set

ENABLE_EMAIL=yes and enter both the **RECEIPT_ADDRESS** and the

SENDER_ADDRESS correctly in **/etc/pwrstatd-lowbatt.sh** or

/etc/pwrstatd-powerfail.sh. For details about installing e-mail package in Ubuntu, please refer to troubleshooting 6.

Event Logs of the Daemon

The event logs of the pwrstatd daemon are located in the directory:

```
/var/log
```

The file named **pwrstatd.log** records all the power events.

2 Checking Daemon Settings

Type the following command to show the configuration of pwrstat:

```
pwrstat -config
```

Below is the example for daemon configuration:

Daemon Configuration:

Alarm..... On

Hibernate..... Off

Cloud..... On

Action for Power Failure:

Delay time since Power Failure..... 60 sec.

Run script command..... On

Path of script command..... /etc/pwrstatd-powerfail.sh

Duration of command running..... 1 sec

Enable shutdown system..... On

Action for Battery Low:

Remaining runtime threshold 300 sec.

Battery capacity threshold 35 %.

Run script command..... On

Path of script command..... /etc/pwrstatd-lowbatt.sh

Duration of command running..... 1 sec

Enable shutdown system..... On

3 Monitoring UPS Status

Type the following command to show UPS properties and the current status:

```
pwrstat -status
```

Below is an example for the UPS model, CP585:

Properties:

```
Model Name..... UPS CP585
Firmware Number..... BFH8102-6O1.5
Rating Voltage..... 120 V
Rating Power..... 515 VA (335 Watt)
```

Current UPS status:

```
State..... Normal
Power Supply by..... Utility Power
Utility Voltage..... 111 V
Output Voltage..... 110 V
Battery Capacity..... 100 %
Remaining Runtime..... 60 min.
Load..... 0 Watt(0 %)
Test Result..... Passed at 2022/03/15 09:35:35
Last Power Event..... Blackout at 2022/03/14 09:03:32 for 2 min
```

Note 7

Some of the listed items above will only be displayed when the UPS model supports the related functions.

4 Troubleshooting

1. How does the UPS communicate with PowerPanel for Linux?

- a. PowerPanel for Linux communicates with the UPS via USB port or Serial port.
- b. The UPS uses the USB HID/Power Class architecture; The UPS has DB-9 connector for RS-232 or Dry-Contact communication.

2. Why is the UPS unable to establish communication with PowerPanel for Linux?

- a. Ensure the UPS model is supported by PowerPanel for Linux.
- b. Ensure a USB or Serial cable is connected to the UPS and computer. Directly connecting the UPS to a computer without a USB Hub is also helpful.
- c. Try to unplug the USB cable from the UPS and plugging it back in again.
- d. Ensure HID device can be found in the directory **/dev/hiddev**, **/dev/usb/hiddev**, and **/dev/usb/hid/hiddev**, such as **hiddev0** if the USB cable is being used. Ensure HID device can be found in the directory **/dev**, such as **ttySO** if the serial cable is being used.

3. Why PowerPanel for Linux cannot be installed or uninstalled?

- a. Run the installation or uninstallation with **sudo/root**.
- b. The Linux system may not be compatible with PowerPanel for Linux. Please refer to the file **doc/deploy-guide** for more information.

4. Why does pwrstat not work?

- a. Ensure **pwrstatd** is working.
- b. Ensure the option **prohibit-client-access** is set as *no* in the **pwrstatd** configuration file.

5. Why can't the pwrstatd daemon detect a UPS with a H2C USB adapter?

- a. Ensure the Linux system has the **libusb library**. It can be found in the directory **/usr/lib**.
- b. Ensure the soname of libusb is **libusb-0.1.so.4**.
- c. If the soname version of libusb is prior to libusb-0.1.so.4, please go to the website, **rpmfind** or **sourceforge**, to download the libusb rpm package and install it. The URLs of the mentioned websites are:
 - *rpmfind*: <http://rpmfind.net>
 - *sourceforge*: <http://sourceforge.net>

6. How to install e-mail package?

Take Ubuntu for example.

- a. Type the following commands:

```
sudo apt-get update
sudo apt-get install mailutils
```
- b. Choose **Internet Site** as the type of mail configuration.



- c. Users may refer to Note 6 in chapter 1.2 for details.

CyberPower

Cyber Power Systems, Inc.

www.cyberpower.com

For USA and Canada:

4241 12th Ave East, Suite 400
Shakopee, MN 55379
Toll-free: (877) 297-6937

For all other regions:

Please visit our website for local contact information.

CyberPower and the CyberPower logo are trademarks of Cyber Power Systems, Inc., and/or affiliates, which are registered in many countries and regions. All other trademarks are the property of their respective owners.