CyberPower

USER'S MANUAL

Power Management Software

PowerPanel for Linux

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SAVE THESE INSTRUCTIONS

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

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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:

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

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

Configuration Files of the Daemon

The configuration files and their functions are described below:

/etc/pwrstatd.conf	The configuration file of pwrstatd, including the options for shutting down or hibernating UPS when the power event occurs.
/etc/pwrstatd-lowbatt.sh	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.
/etc/pwrstatd-powerfail.sh	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.
/etc/pwrstatd-email.sh	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.

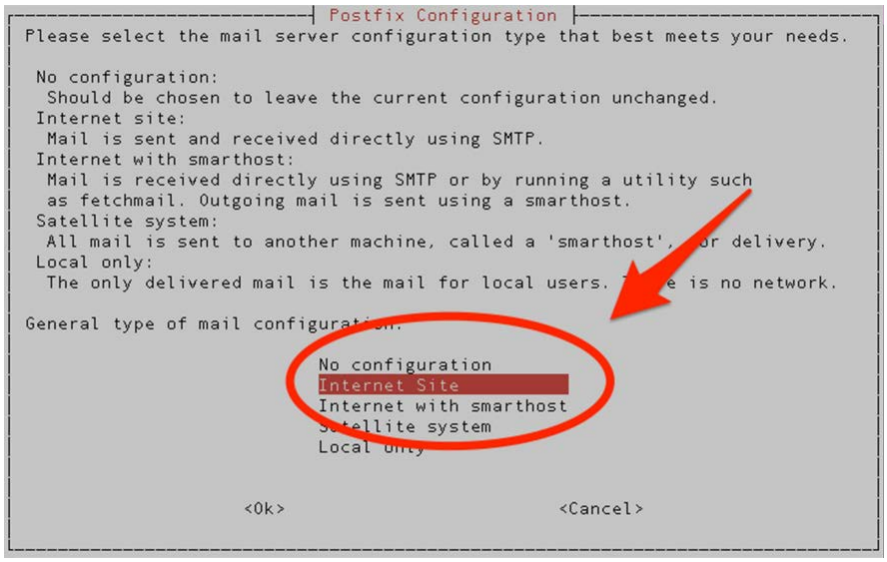
2. **Why is the UPS unable to establish communication with PowerPanel for Linux?**
   a. Ensure the UPS model is supported by PowerPanel for Linux.
   b. Ensure a USB or Serial cable is connected to the UPS and computer. Directly connecting the UPS to a computer without a USB Hub is also helpful.
   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 **ttyS0** 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.

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