Thinkfan

From ThinkWiki

Contents

Introduction

thinkfan (http://thinkfan.sourceforge.net/) is a simple fan controller software for Linux. This article describes the installation and configuration for Debian and Ubuntu.

Conditions

From

- Ubuntu 10.04 "Lucid Lynx" or
- Debian 6.0 "Squeeze"

thinkfan is included in the repositories of the distribution.

Supports all ThinkPad models where the kernel module **thinkpad_acpi** can be loaded. Exceptions are:

- SL series: no support for thinkpad_acpi
- L-edge series, X100e: requires kernel 2.6.35 with Ubuntu 10.10 or 10.04 with tp kernel 2.6.32

Installation

Install Package

You install the package

- **thinkfan**

either in the package manager or terminal

```
sudo apt-get install thinkfan
```

Note: `sudo` is only needed for Ubuntu, Debian calls you at all commands instead of from a root shell.

thinkpad_acpi configure

In order for the fan control, has the kernel module **thinkpad_acpi** with the option `fan_control = 1` will be charged. This is the file **/ etc / modprobe.d / thinkfan.conf** to mess with root privileges

```
gksudo gedit / etc / modprobe.d / thinkfan.conf
```

and enter the following

```
options thinkpad_acpi fan_control = 1
```

Then you load the new module

```
sudo modprobe-rv thinkpad_acpi
sudo modprobe-v thinkpad_acpi
```

Automatic start

Thinkfan to activate automatically at system startup, the file **/ etc / default / thinkfan** as root and edit the following line in the `no` with a `yes` to replace:

```
START = yes
```

Temperature thresholds set

thinkfan has no GUI. The temperature thresholds of the text file **/ etc / thinkfan.conf** configured. The predefined thresholds should work with any ThinkPad. Upon request, the file can be edited with root privileges. Example of a customized file (for X200):

```
(0, 0, 42)
(1, 40, 47)
(2, 45, 52)
(3, 50, 57)
```

```
(4, 55, 62)
(5, 60, 67)
(6, 65, 72)
(7, 70, 77)
(127, 75, 32767) # this line provides full fan speed
```

Each line consists of three values - the meaning is (from left to right):

- Fan level 0 (off) - 7 (max.)
- Is temperature at which point in the descending direction of the fan level by 1 veringert
- Is temperature when reached in the ascending direction of the fan level increased by 1

Note is taken into account only the highest value found in the system of temperature sensors.

After setting the threshold, the daemon can be started manually thinkfan

```
sudo / etc / init.d / start thinkfan
```

Temperature sensors provided with offsets

As described above, is directed thinkfan always according to the highest temperature from the existing sensors. If you want to weigh less or more individual sensors, it provides them with an offset. You take a line from the sensor threshold settings. The example of the value of 2, 9 and 10 Sensor every 5 ° C removed:

```
sensor / proc / acpi / ibm / thermal (0, -5, 0, 0, 0, 0, 0, 0, -5, -5)
```

Warning: Offsets should only be used with due caution and must verify the settings by test mode (see below).

Temperatures show

For ThinkPads shows the values of all temperature sensors with

```
cat / proc / acpi / ibm / thermal
```

at. The first value is always the CPU. The allocation of additional sensors depends on the model. Details can be found here (http://www.thinkwiki.org/wiki/Thermal_sensors) .

Test operation

To observe the effect of the settings directly, you first stop the daemon running in the background thinkfan

```
sudo / etc / init.d / stop thinkfan
```

Then thinkfan started in the foreground by

```
sudo-s thinkfan
```

It appears the following continuous output (example)

```
WARNING: Using default temperature inputs from / proc / acpi / ibm / thermal.
WARNING: You have not provided any correction values for any sensor, and your fan will only start a
Config as read from / etc / thinkfan.conf:
Fan level Low High
 0 0 55
 1 48 60
 2 50 61
 3 52 63
 4 56 65
 5 59 66
 7 63 32767

sleeptime = 5, temp = 50, last_temp = 0, biased_temp = 50 -> level = 1
sleeptime = 5, temp = 60 = 59 last_temp, biased_temp = 60 -> level = 2
sleeptime = 5, temp = 61 = 60 last_temp, biased_temp = 61 -> level = 3
sleeptime = 5, temp = 52 = 53 last_temp, biased_temp = 52 -> level = 2
sleeptime = 5, temp = 50, last_temp = 51, biased_temp = 50 -> level = 1
```

Use Ctrl + C, the test can be completed.

Troubleshooting

No function on X220, T420 (s) for Ubuntu 11.04 / kernel 2.6.38

Note: This section does not apply to the L420.

Symptom: when manually starting thinkfan by

```
sudo / etc / init.d / start thinkfan
```

displays the following output

```
/ Proc / acpi / ibm / thermal: No such file or directory
```

Cause: the file **/ proc / acpi / ibm / thermal** does not exist anymore in the affected models. The temperature sensors are moved to another location in sysfs thinkfan and she does not recognize.

Solution to determine the available temperature sensors is the first packet

- **lm-sensors**

to install. Then you will start to recognize the command

```
sudo sensors-detect
```

All requests for the program (up to the last) can be confirmed with <Enter> (YES).

The last question of the program, *"Do you want to add these lines automatically to / etc / modules: (yes / NO)"* you answered `yes` <Enter>.

As a next step, you load the kernel detected by sensors-detect modules

```
start sudo module-init-tools # Ubuntu
sudo / etc / init.d / module-init-tools start # Debian
```

or alternatively with a reboot.

Now the temperature sensors available with the following command displays:

```
find / sys / devices-type f-name "* temp _input"
```

The output lines are preceded by increases with `sensor` in **/ etc thinkfan.conf /** on (before the temperature thresholds).

Example (T420s):

```
sensor / sys/devices/platform/coretemp.0/temp1_input
sensor / sys/devices/platform/coretemp.2/temp1_input
sensor / sys/devices/virtual/hwmon/hwmon0/temp1_input
```

The current values of the temperature sensors can be with

```
sensors
```

. Show

Left

- Project Homepage (http://thinkfan.sourceforge.net/)

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- Thinkpad forum (http://thinkpad-forum.de/threads/90602-T41-Ubuntu-10.04-L%C3%BCftersteurung?p=839913&viewfull=1#post839913) - Installation Guide) by Jetronic (3rd Post
- Thinkpad forum (http://thinkpad-forum.de/threads/113946-Ubuntu-mit-neuem-X220-%C3%BCber-WLAN?p=1086988&viewfull=1#post1086988) - the starting point for the workaround from unattached (57th Post)
- ThinkPad-Forum (http://thinkpad-forum.de/threads/114638-Thinkfan-bei-neuen-Thinkpads-benutzen?p=1094434&viewfull=1#post1094434) - Information about sensors-detect by Miko (7th post)

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