

verot.net - How to set up an alarm system for Thinkpad laptops, using the laptop's accelerometer, hdaps and python with a KDE desktop

[thinkpad_antitheft.htm](#)

This script was originally written by [Janitha Karunaratne](#). I have simply adapted it for Kubuntu (KDE in fact), as the script was initially working with Gnome. See a [demo video](#) of Janitha's script.

Install *hdaps*

First you need to install [hdaps](#), the Linux driver for monitoring the accelerometer known as [IBM Active Protection System](#).

With ubuntu, it is rather easy. Note that from Hardy, there is another version of *hdaps*, using *tp_smapi*.

Install the packages:

```
sudo apt-get install hdaps-utils hdapsd
```

Load the module into the kernel:

```
sudo modprobe hdaps
```

Test is everything is working:

```
hdaps-gl
```

If yes, then add *hdaps* in */etc/modules*.

```
sudo vi /etc/modules
```

The script

Start this script when you want to lock your screen and activate the anti-theft alarm. Once armed, try to tilt the laptop. A sound will be played as you tilt it, and will become louder as you tilt it even more. Eventually, you will tilt it so much that the alarm sound will go on. The only way to stop the alarm sound is to log in.

Note that you need to edit the start of the script to put your own sound files. I use *play*, part of *SoX* to play the WAV files.

Download the script [here](#), or get it below:

```
#!/usr/bin/python
# Janitha's Thinkpad Anti Theft Script
# janitha at janitha dot com
#
# modified for KDE support by Colin Verot
```

```

import fileinput
import os
import time
import sys
hdaps = "/sys/devices/platform/hdaps/position"
threshold_alert = 10
threshold_alarm = 50
sound_armed = "~/scripts/antitheft/armed.wav"
sound_alert = "~/scripts/antitheft/alert.wav"
sound_alarm = "~/scripts/antitheft/alarm.wav"
#####
os.system("/usr/bin/kdesktop_lock --forcelock &")
time.sleep(1)
os.system("play " + sound_armed + " 2> /dev/null")
file = open(hdaps)
value = file.readline()
bx = int(value.partition("(")[2].partition(",")[0])
by = int(value.partition(",")[2].partition(")")[0])
print bx
print by
file.close()
x = bx
y = by
while x > bx-threshold_alarm and x < bx+threshold_alarm and y > by-threshold_alarm and y < by+threshold_alarm:
    time.sleep(0.05)
    # Read HDAPS values
    file = open(hdaps)
    value = file.readline()
    x = int(value.partition("(")[2].partition(",")[0])
    y = int(value.partition(",")[2].partition(")")[0])
    file.close()
    if x < bx-threshold_alert or x > bx+threshold_alert or y < by-threshold_alert or y > by+threshold_alert:
        diff = abs(bx-x) + abs(by-y)
        gain_diff = (int((diff*100.0) / (threshold_alarm))*2) / 20 - 1
        print "alert",gain_diff
        cmd = "play" + " --volume " + `gain_diff` + " " + sound_alert + " 2>
/dev/null"
        os.system(cmd)
        if ''.join(os.popen('ps aux').readlines()).find('kdesktop_lock')
sys.exit(0)
while 1:
    if ''.join(os.popen('ps aux').readlines()).find('kdesktop_lock')
sys.exit(0)
print "Alarm!"
os.system("play " + " --volume 3 " + sound_alarm + " 2> /dev/null")
time.sleep(1)

```