

Apple Touchpad Driver (appletouch)

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appletouch is a Linux kernel driver for the USB touchpad found on post February 2005 and October 2005 Apple Aluminium Powerbooks.

This driver is derived from Johannes Berg's appletrackpad driver [1], but it has been improved in some areas:

- appletouch is a full kernel driver, no userspace program is necessary
- appletouch can be interfaced with the synaptics X11 driver, in order to have touchpad acceleration, scrolling, etc.

Credits go to Johannes Berg for reverse-engineering the touchpad protocol, Frank Arnold for further improvements, and Alex Harper for some additional information about the inner workings of the touchpad sensors. Michael Hanselmann added support for the October 2005 models.

Usage

In order to use the touchpad in the basic mode, compile the driver and load the module. A new input device will be detected and you will be able to read the mouse data from `/dev/input/mice` (using `gpm`, or `X11`).

In `X11`, you can configure the touchpad to use the synaptics `X11` driver, which will give additional functionalities, like acceleration, scrolling, 2 finger tap for middle button mouse emulation, 3 finger tap for right button mouse emulation, etc. In order to do this, make sure you're using a recent version of the synaptics driver (tested with 0.14.2, available from [2]), and configure a new input device in your `X11` configuration file (take a look below for an example). For additional configuration, see the synaptics driver documentation:

```
Section "InputDevice"
    Identifier      "Synaptics Touchpad"
    Driver          "synaptics"
    Option          "SendCoreEvents"       "true"
    Option          "Device"                "/dev/input/mice"
    Option          "Protocol"              "auto-dev"
    Option          "LeftEdge"              "0"
    Option          "RightEdge"             "850"
    Option          "TopEdge"               "0"
    Option          "BottomEdge"            "645"
    Option          "MinSpeed"              "0.4"
    Option          "MaxSpeed"              "1"
    Option          "AccelFactor"           "0.02"
    Option          "FingerLow"             "0"
    Option          "FingerHigh"            "30"
    Option          "MaxTapMove"            "20"
    Option          "MaxTapTime"            "100"
    Option          "HorizScrollDelta"      "0"
    Option          "VertScrollDelta"       "30"
    Option          "SHMConfig"             "on"
EndSection

Section "ServerLayout"
    ...
    InputDevice     "Mouse"
    InputDevice     "Synaptics Touchpad"
    ...
EndSection
```

Fuzz problems

The touchpad sensors are very sensitive to heat, and will generate a lot of noise when the temperature changes. This is especially true when you power-on the laptop for the first time.

The appletouch driver tries to handle this noise and auto adapt itself, but it is not perfect. If finger movements are not recognized anymore, try reloading the driver.

You can activate debugging using the 'debug' module parameter. A value of 0 deactivates any debugging, 1 activates tracing of invalid samples, 2 activates full tracing (each sample is being traced):

```
modprobe appletouch debug=1
```

or:

```
echo "1" > /sys/module/appletouch/parameters/debug
```

[1] <http://johannes.sipsolutions.net/PowerBook/touchpad/>

[2] http://web.archive.org/web/*/http://web.telila.com/~u89404340/touchpad/index.html

