

NAME

atp - Apple touchpad driver

SYNOPSIS

To compile this driver into the kernel, place the following lines into your kernel configuration file:

```
device atp  
device hid  
device usb
```

Alternatively, to load the driver as a module at boot time, place the following line in loader.conf(5):

```
atp_load="YES"
```

DESCRIPTION

The **atp** driver provides support for the Apple Internal Trackpad device found in many Apple laptops. Older (Fountain/Geysler) and the newer (Wellspring) trackpad families are all supported through a unified driver.

The driver simulates a three-button mouse using multi-finger tap detection. Single finger tap generates a left-button click; two-finger tap maps to the middle button; whereas a three-finger tap gets treated as a right button click.

There is support for 2-finger horizontal scrolling, which translates to page-back/forward events; vertical multi-finger scrolling emulates the mouse wheel.

A double-tap followed by a drag is treated as a selection gesture; a virtual left-button click is assumed for the lifespan of the drag.

atp supports dynamic reconfiguration using sysctl(8); through nodes under **hw.usb.atp**. Pointer sensitivity can be controlled using the sysctl tunable **hw.usb.atp.scale_factor**. Smaller values of *scale_factor* result in faster movement. A simple high-pass filter is used to reduce contributions from small movements; the threshold for this filter may be controlled by **hw.usb.atp.small_movement**. The maximum tolerable duration of a touch gesture is controlled by **hw.usb.atp.touch_timeout** (in microseconds); beyond this period, touches are considered to be slides. (This conversion also happens when a finger stroke accumulates at least **hw.usb.atp.slide_min_movement** movement (in mickeys). The maximum time (in microseconds) to allow an association between a double- tap and drag gesture may be controlled by **hw.usb.atp.double_tap_threshold**. Should one want to disable tap detection and rely only upon physical button presses, set the following sysctl to a value of 2 **hw.usb.atp.tap_minimum**.

HARDWARE

The **atp** driver provides support for the following Product IDs:

- ⊕ PowerBooks, iBooks (IDs: 0x020e, 0x020f, 0x0210, 0x0214, 0x0215, 0x0216)
- ⊕ Core Duo MacBook & MacBook Pro (IDs: 0x0217, 0x0218, 0x0219)
- ⊕ Core2 Duo MacBook & MacBook Pro (IDs: 0x021a, 0x021b, 0x021c)
- ⊕ Core2 Duo MacBook3,1 (IDs: 0x0229, 0x022a, 0x022b)
- ⊕ 12 inch PowerBook and iBook (IDs: 0x030a, 0x030b)
- ⊕ 15 inch PowerBook (IDs: 0x020e, 0x020f, 0x0215)
- ⊕ 17 inch PowerBook (ID: 0x020d)
- ⊕ Almost all recent Macbook-Pros and Airs (IDs: 0x0223, 0x0223, 0x0224, 0x0224, 0x0225, 0x0225, 0x0230, 0x0230, 0x0231, 0x0231, 0x0232, 0x0232, 0x0236, 0x0236, 0x0237, 0x0237, 0x0238, 0x0238, 0x023f, 0x023f, 0x0240, 0x0241, 0x0242, 0x0243, 0x0244, 0x0245, 0x0246, 0x0247, 0x0249, 0x024a, 0x024b, 0x024c, 0x024d, 0x024e, 0x0252, 0x0252, 0x0253, 0x0253, 0x0254, 0x0254, 0x0259, 0x025a, 0x025b, 0x0262, 0x0262, 0x0263, 0x0264, 0x0290, 0x0291, 0x0292)

To discover the product-id of a touchpad, search for 'Trackpad' in the output of `lshal(1)` and look up the property **usb_device.product_id**.

FILES

atp creates a blocking pseudo-device file, `/dev/atp0`, which presents the mouse as a *sysmouse* or *mousesystems* type device--see `moused(8)` for an explanation of these mouse types.

SEE ALSO

`sysmouse(4)`, `usb(4)`, `loader.conf(5)`, `xorg.conf(5)` (*ports/x11/xorg*), `moused(8)`, `sysctl(8)`

AUTHORS

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