

NAME

attimer - i8254 Programmable Interval Timer (AT Timer) driver

SYNOPSIS

This driver is a mandatory part of x86 kernels.

The following tunables are settable from the loader(8):

hint.attimer.X.clock

controls support for the event timer functionality. Setting this value to 0 disables it. The default value is 1.

hint.attimer.X.timecounter

controls support for the time counter functionality. Setting this value to 0 disables it. The default value is 1.

hw.i8254.freq

allows overriding the default counter frequency. The same value is also available at run-time via the *machdep.i8254_freq* sysctl.

DESCRIPTION

This driver uses i8254 Programmable Interval Timer (AT Timer) hardware to supply the kernel with one timecounter and one event timer, and to generate sound tones for the system speaker. This hardware includes three channels. Each channel includes a 16 bit counter which decreases with a known, platform-dependent frequency. Counters can operate in several different modes, including periodic and one-shot. The output of each channel has platform-defined wiring: one channel is wired to the interrupt controller and may be used as event timer, one channel is wired to the speaker and used to generate sound tones, and one timer is reserved for platform purposes.

The **attimer** driver uses a single hardware channel to provide both time counter and event timer functionality. To make this possible, the respective counter must be running in periodic mode. As a result, the one-shot event timer mode is supported only when time counter functionality is disabled.

The event timer provided by the driver is irrelevant to CPU power states.

SEE ALSO

apic(4), atrtc(4), eventtimers(4), hpet(4), timecounters(4)