NAME

boottime, **time_second**, **time_uptime** - system time variables

SYNOPSIS

#include <sys/time.h>

extern struct timeval boottime;
extern time_t time_second;
extern time_t time_uptime;

DESCRIPTION

The *boottime* variable holds the estimated system boot time. This time is initially set when the system boots, either from the RTC, or from a time estimated from the system's root filesystem. When the current system time is set, stepped by ntpd(8), or a new time is read from the RTC as the system resumes, *boottime* is recomputed as new_time - uptime. The sysctl(8) *kern.boottime* returns this value.

The *time_second* variable is the system's "wall time" clock to the second.

The *time_uptime* variable is the number of seconds since boot.

The bintime(9), getbintime(9), microtime(9), getmicrotime(9), nanotime(9), and getnanotime(9) functions can be used to get the current time more accurately and in an atomic manner. Similarly, the binuptime(9), getbinuptime(9), microuptime(9), getmicrouptime(9), nanouptime(9), and getnanouptime(9) functions can be used to get the time elapse since boot more accurately and in an atomic manner. The *boottime* variable may be read and written without special precautions. It is adjusted when the phase of the system time changes.

SEE ALSO

clock_settime(2), ntp_adjtime(2), settimeofday(2), bintime(9), binuptime(9), getbintime(9), getbinuptime(9), getmicrotime(9), getmicrouptime(9), getnanotime(9), getnanouptime(9), microtime(9), microuptime(9), nanotime(9), nanouptime(9)

Poul-Henning Kamp, "Timecounters: Efficient and precise timekeeping in SMP kernels", *Proceedings of EuroBSDCon 2002, Amsterdam*, /usr/share/doc/papers/timecounter.ascii.gz.

Marshall Kirk McKusick and George V. Neville-Neil, *The Design and Implementation of the FreeBSD Operating System*, *Addison-Wesley*, 57-61,65-66, July 2004.