

NAME

times - process times

LIBRARY

Standard C Library (libc, -lc)

SYNOPSIS

```
#include <sys/times.h>
```

```
clock_t
```

```
times(struct tms *tp);
```

DESCRIPTION

This interface is obsoleted by getrusage(2) and gettimeofday(2).

The **times()** function returns the value of time in CLK_TCK's of a second since the system startup time. The current value of CLK_TCK, the frequency of the statistics clock in ticks per second, may be obtained through the sysconf(3) interface.

It also fills in the structure pointed to by *tp* with time-accounting information.

The *tms* structure is defined as follows:

```
struct tms {
    clock_t tms_utime;
    clock_t tms_stime;
    clock_t tms_cutime;
    clock_t tms_cstime;
};
```

The elements of this structure are defined as follows:

tms_utime The CPU time charged for the execution of user instructions.

tms_stime The CPU time charged for execution by the system on behalf of the process.

tms_cutime The sum of the *tms_utimes* and *tms_cutimes* of the child processes.

tms_cstime The sum of the *tms_stimes* and *tms_cstimes* of the child processes.

All times are in CLK_TCK's of a second.

The times of a terminated child process are included in the *tms_cutime* and *tms_cstime* elements of the parent when one of the wait(2) functions returns the process ID of the terminated child to the parent. If an error occurs, **times()** returns the value $((clock_t)-1)$, and sets *errno* to indicate the error.

ERRORS

The **times()** function may fail and set the global variable *errno* for any of the errors specified for the library routines *getrusage(2)* and *gettimeofday(2)*.

SEE ALSO

time(1), *getrusage(2)*, *gettimeofday(2)*, *wait(2)*, *sysconf(3)*, *clocks(7)*

STANDARDS

The **times()** function conforms to IEEE Std 1003.1-1988 ("POSIX.1").