



NAME

sys/time.h - time types


SYNOPSIS

[XSI]  #include <sys/time.h> 

DESCRIPTION

The <sys/time.h> header shall define the **timeval** structure, which shall include at least the following members:

time_t	tv_sec	Seconds.
suseconds_t	tv_usec	Microseconds.


[OB]  The <sys/time.h> header shall define the **itimerval** structure, which shall include at least the following members:

struct timeval	it_interval	Timer interval.
struct timeval	it_value	Current value.



The <sys/time.h> header shall define the **time_t** and **suseconds_t** types as described in [<sys/types.h>](#).

The <sys/time.h> header shall define the **fd_set** type as described in [<sys/select.h>](#).

[OB]  The <sys/time.h> header shall define the following symbolic constants for the *which* argument of [getitimer\(\)](#) and [setitimer\(\)](#):

ITIMER_REAL	Decrements in real time.
ITIMER_VIRTUAL	Decrements in process virtual time.
ITIMER_PROF	Decrements both in process virtual time and when the system is running on behalf of the process.



The <sys/time.h> header shall define the following as described in [<sys/select.h>](#): [FD_CLR\(\)](#) [FD_ISSET\(\)](#) [FD_SET\(\)](#) [FD_ZERO\(\)](#) FD_SETSIZE

The following shall be declared as functions and may also be defined as macros. Function prototypes shall be provided.

[OB] 

```
int  getitimer(int, struct itimerval *);
int  gettimeofday(struct timeval *restrict, void *restrict);
int  setitimer(int, const struct itimerval *restrict,
               struct itimerval *restrict);
```



```
int  select(int, fd_set *restrict, fd_set *restrict, fd_set *restrict,  
            struct timeval *restrict);  
int  utimes(const char *, const struct timeval [2]);
```

Inclusion of the <sys/time.h> header may make visible all symbols from the [<sys/select.h>](#) header.

The following sections are informative.

APPLICATION USAGE

None.

RATIONALE

None.

FUTURE DIRECTIONS

None.

SEE ALSO

[<sys/select.h>](#), [<sys/types.h>](#)

XSH [futimens](#), [getitimer](#), [gettimeofday](#), [pselect](#)

CHANGE HISTORY

First released in Issue 4, Version 2.

Issue 5

The type of `tv_usec` is changed from `long` to `suseconds_t`.

Issue 6

The **restrict** keyword is added to the prototypes for [gettimeofday\(\)](#), [select\(\)](#), and [setitimer\(\)](#).

The note is added that inclusion of this header may also make symbols visible from [<sys/select.h>](#).

The [utimes\(\)](#) function is marked LEGACY.

Issue 7

This reference page is clarified with respect to macros and symbolic constants.

End of informative text.

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