NAME

sys/types.h − data types

SYNOPSIS

#include <sys/types.h>

DESCRIPTION

The <*sys/types.h*> header shall include definitions for at least the following types:

blkcnt_t
Used for file block counts.

blksize_t
Used for block sizes.

clock_t
Used for system times in clock ticks or CLOCKS_PER_SEC; see <*time.h*> .

clockid_t
Used for clock ID type in the clock and timer functions.

dev_t Used for device IDs.

fsblkcnt_t
Used for file system block counts.

fsfilcnt_t
Used for file system file counts.

gid_t Used for group IDs.

id_t Used as a general identifier; can be used to contain at least a **pid_t**, **uid_t**, or **gid_t**.

ino_t Used for file serial numbers.

key_t Used for XSI interprocess communication.

mode_t
Used for some file attributes.

nlink_t
Used for link counts.

off_t Used for file sizes.

pid_t Used for process IDs and process group IDs.

pthread_attr_t
Used to identify a thread attribute object.

pthread_barrier_t
Used to identify a barrier.

pthread_barrierattr_t
Used to define a barrier attributes object.

pthread_cond_t
Used for condition variables.

pthread_condattr_t
Used to identify a condition attribute object.

pthread_key_t
Used for thread-specific data keys.

pthread_mutex_t
Used for mutexes.

pthread_mutexattr_t
Used to identify a mutex attribute object.

pthread_once_t
Used for dynamic package initialization.

pthread_rwlock_t
Used for read-write locks.

pthread_rwlockattr_t
Used for read-write lock attributes.

pthread_spinlock_t
Used to identify a spin lock.

pthread_t
Used to identify a thread.

size_t Used for sizes of objects.

ssize_t Used for a count of bytes or an error indication.

suseconds_t
Used for time in microseconds.

time_t Used for time in seconds.

timer_t
Used for timer ID returned by *timer_create*().

trace_attr_t
Used to identify a trace stream attributes object.

trace_event_id_t
Used to identify a trace event type.

trace_event_set_t
Used to identify a trace event type set.

trace_id_t
Used to identify a trace stream.

uid_t Used for user IDs.

useconds_t
Used for time in microseconds.

All of the types shall be defined as arithmetic types of an appropriate length, with the following exceptions:

key_t

pthread_attr_t

pthread_barrier_t
pthread_barrierattr_t

pthread_cond_t
pthread_condattr_t
pthread_key_t
pthread_mutex_t
pthread_mutexattr_t

pthread_once_t
pthread_rwlock_t
pthread_rwlockattr_t

pthread_spinlock_t

trace_attr_t
trace_event_id_t

trace_event_set_t

trace_id_t

Additionally:

* **mode_t** shall be an integer type.
* **nlink_t**, **uid_t**, **gid_t**, and **id_t** shall be integer types.
* **blkcnt_t** and **off_t** shall be signed integer types.
* **fsblkcnt_t**, **fsfilcnt_t**, and **ino_t** shall be defined as unsigned integer types.
* **size_t** shall be an unsigned integer type.
* **blksize_t**, **pid_t**, and **ssize_t** shall be signed integer types.
* **time_t** and **clock_t** shall be integer or real-floating types.

The type **ssize_t** shall be capable of storing values at least in the range [-1, {SSIZE_MAX}]. The type **useconds_t** shall be an unsigned integer type capable of storing values at least in the range [0, 1000000]. The type **suseconds_t** shall be a signed integer type capable of storing values at least in the range [-1, 1000000].

The implementation shall support one or more programming environments in which the widths of **blksize_t**, **pid_t**, **size_t**, **ssize_t**, **suseconds_t**, and **useconds_t** are no greater than the width of type **long**. The names of these programming environments can be obtained using the *confstr*() function or the *getconf* utility.

There are no defined comparison or assignment operators for the following types:

pthread_attr_t

pthread_barrier_t
pthread_barrierattr_t

pthread_cond_t
pthread_condattr_t
pthread_mutex_t
pthread_mutexattr_t
pthread_rwlock_t
pthread_rwlockattr_t

pthread_spinlock_t

trace_attr_t

The following sections are informative.

APPLICATION USAGE

None.

RATIONALE

None.

FUTURE DIRECTIONS

None.

SEE ALSO

<time.h>, the System Interfaces volume of IEEE Std 1003.1-2001, *confstr*(), the Shell and Utilities volume of IEEE Std 1003.1-2001, *getconf*

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