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## **Red Hat Enterprise Linux Release 9.2 Manual Pages on 'sys\_types.h.0p' command**

### **\$ man sys\_types.h.0p**

sys\_types.h(0P) POSIX Programmer's Manual sys\_types.h(0P)

#### PROLOG

This manual page is part of the POSIX Programmer's Manual. The Linux implementation of this interface may differ (consult the corresponding Linux manual page for details of Linux behavior), or the interface may not be implemented on Linux.

#### NAME

sys/types.h ? data types

#### SYNOPSIS

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

#### DESCRIPTION

The <sys/types.h> header shall define 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.

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

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

pthread\_t

timer\_t

trace\_attr\_t

trace\_event\_id\_t

trace\_event\_set\_t

trace\_id\_t

Additionally:

- \* mode\_t shall be an integer type.
- \* dev\_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.
- \* `clock_t` shall be an integer or real-floating type. `time_t` shall be an integer type.

The type `ssize_t` shall be capable of storing values at least in the range `[-1, {SSIZE_MAX}]`.

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`, and `suseconds_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`
- `timer_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 POSIX.1?2017, `confstr()`

The Shell and Utilities volume of POSIX.1?2017, `getconf`

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