

NAME

`pthread_attr_setaffinity_np`, `pthread_attr_getaffinity_np` - set/get CPU affinity attribute in thread attributes object

SYNOPSIS

```
#define _GNU_SOURCE /* See feature\_test\_macros\(7\)
*/
#include <pthread.h>

int pthread_attr_setaffinity_np(pthread_attr_t *attr,
    size_t cpusetsize, const cpu_set_t *cpuset);
int pthread_attr_getaffinity_np(const pthread_attr_t *attr,
    size_t cpusetsize, cpu_set_t *cpuset);
```

Compile and link with `-pthread`.

DESCRIPTION

The `pthread_attr_setaffinity_np()` function sets the CPU affinity mask attribute of the thread attributes object referred to by `attr` to the value specified in `cpuset`. This attribute determines the CPU affinity mask of a thread created using the thread attributes object `attr`.

The `pthread_attr_getaffinity_np()` function returns the CPU affinity mask attribute of the thread attributes object referred to by `attr` in the buffer pointed to by `cpuset`.

The argument `cpusetsize` is the length (in bytes) of the buffer pointed to by `cpuset`. Typically, this argument would be specified as `sizeof(cpu_set_t)`.

For more details on CPU affinity masks, see [sched_setaffinity\(2\)](#). For a description of a set of macros that can be used to manipulate and inspect CPU sets, see [CPU_SET\(3\)](#).

RETURN VALUE

On success, these functions return 0; on error, they return a nonzero error number.

ERRORS

EINVAL

(`pthread_attr_setaffinity_np()`) `cpuset` specified a CPU that was outside the set supported by the kernel. (The kernel configuration option `CONFIG_NR_CPUS` defines the range of the set supported by the kernel data type used to represent CPU sets.)

EINVAL

(`pthread_attr_getaffinity_np()`) A CPU in the affinity mask of the thread attributes object referred to by `attr` lies outside the range specified by `cpusetsize` (i.e., `cpuset/cpusetsize` is too small).

ENOMEM

(`pthread_attr_setaffinity_np()`) Could not allocate memory.

VERSIONS

These functions are provided by glibc since version 2.3.4.

ATTRIBUTES

For an explanation of the terms used in this section, see [attributes\(7\)](#).

Interface	Attribute	Value
<code>pthread_attr_setaffinity_np()</code> , <code>pthread_attr_getaffinity_np()</code>	Thread safety	MT-Safe

CONFORMING TO

These functions are nonstandard GNU extensions; hence the suffix `"_np"` (nonportable) in the names.

NOTES

In glibc 2.3.3 only, versions of these functions were provided that did not have a `cpusetsize` argument. Instead the CPU set size given to the underlying system calls was always `sizeof(cpu_set_t)`.

SEE ALSO

[sched_setaffinity\(2\)](#), [pthread_attr_init\(3\)](#), [pthread_setaffinity_np\(3\)](#), [cpuset\(7\)](#), [pthreads\(7\)](#)

COLOPHON

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