

**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
<b>pthread_attr_setaffinity_np()</b> , <b>pthread_attr_getaffinity_np()</b>	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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