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
pthread_attr_setaffinity_np(), **pthread_attr_getaffinity_np**()	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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