

**NAME**

sigemptyset, sigfillset, sigaddset, sigdelset, sigismember – POSIX signal set operations

**LIBRARY**

Standard C library (*libc*, *-lc*)

**SYNOPSIS**

```
#include <signal.h>

int sigemptyset(sigset_t *set);
int sigfillset(sigset_t *set);

int sigaddset(sigset_t *set, int signum);
int sigdelset(sigset_t *set, int signum);

int sigismember(const sigset_t *set, int signum);
```

Feature Test Macro Requirements for glibc (see **feature\_test\_macros(7)**):

```
sigemptyset(), sigfillset(), sigaddset(), sigdelset(), sigismember():
    _POSIX_C_SOURCE
```

**DESCRIPTION**

These functions allow the manipulation of POSIX signal sets.

**sigemptyset()** initializes the signal set given by *set* to empty, with all signals excluded from the set.

**sigfillset()** initializes *set* to full, including all signals.

**sigaddset()** and **sigdelset()** add and delete respectively signal *signum* from *set*.

**sigismember()** tests whether *signum* is a member of *set*.

Objects of type *sigset\_t* must be initialized by a call to either **sigemptyset()** or **sigfillset()** before being passed to the functions **sigaddset()**, **sigdelset()**, and **sigismember()** or the additional glibc functions described below (**sigisemptyset()**, **sigandset()**, and **sigorset()**). The results are undefined if this is not done.

**RETURN VALUE**

**sigemptyset()**, **sigfillset()**, **sigaddset()**, and **sigdelset()** return 0 on success and  $-1$  on error.

**sigismember()** returns 1 if *signum* is a member of *set*, 0 if *signum* is not a member, and  $-1$  on error.

On error, these functions set *errno* to indicate the error.

**ERRORS****EINVAL**

*signum* is not a valid signal.

**ATTRIBUTES**

For an explanation of the terms used in this section, see **attributes(7)**.

Interface	Attribute	Value
<b>sigemptyset()</b> , <b>sigfillset()</b> , <b>sigaddset()</b> , <b>sigdelset()</b> , <b>sigismember()</b> , <b>sigisemptyset()</b> , <b>sigorset()</b> , <b>sigandset()</b>	Thread safety	MT-Safe

**STANDARDS**

POSIX.1-2001, POSIX.1-2008.

**NOTES**

When creating a filled signal set, the glibc **sigfillset()** function does not include the two real-time signals used internally by the NPTL threading implementation. See **nptl(7)** for details.

**glibc extensions**

If the **\_GNU\_SOURCE** feature test macro is defined, then *<signal.h>* exposes three other functions for manipulating signal sets:

```
int sigisemptyset(const sigset_t *set);
```

```
int sigorset(sigset_t *dest, const sigset_t *left,  
             const sigset_t *right);  
int sigandset(sigset_t *dest, const sigset_t *left,  
             const sigset_t *right);
```

**sigisemptyset()** returns 1 if *set* contains no signals, and 0 otherwise.

**sigorset()** places the union of the sets *left* and *right* in *dest*. **sigandset()** places the intersection of the sets *left* and *right* in *dest*. Both functions return 0 on success, and  $-1$  on failure.

These functions are nonstandard (a few other systems provide similar functions) and their use should be avoided in portable applications.

## SEE ALSO

**sigaction(2)**, **sigpending(2)**, **sigprocmask(2)**, **sigsuspend(2)**