NAME

sigvec, sigblock, sigsetmask, siggetmask, sigmask − BSD signal API

LIBRARY

Standard C library (*libc*, *−lc*)

SYNOPSIS

#include <signal.h>

int sigvec(int *sig***, const struct sigvec ****vec***, struct sigvec ****ovec***);**

int sigmask(int *signum***);**

int sigblock(int *mask***);**
int sigsetmask(int *mask***);**
int siggetmask(void);

Feature Test Macro Requirements for glibc (see **feature_test_macros**(7)):

All functions shown above:
Since glibc 2.19:
_DEFAULT_SOURCE
glibc 2.19 and earlier:
_BSD_SOURCE

DESCRIPTION

These functions are provided in glibc as a compatibility interface for programs that make use of the historical BSD signal API. This API is obsolete: new applications should use the POSIX signal API (**sigaction**(2), **sigprocmask**(2), etc.).

The **sigvec**() function sets and/or gets the disposition of the signal *sig* (like the POSIX **sigaction**(2)). If*vec* is not NULL, it points to a *sigvec* structure that defines the new disposition for *sig*. If*o vec* is not NULL, it points to a *sigvec* structure that is used to return the previous disposition of *sig*. To obtain the current disposition of *sig* without changing it, specify NULL for *vec*, and a non-null pointer for *ovec*.

The dispositions for **SIGKILL** and **SIGSTOP** cannot be changed.

The *sigvec* structure has the following form:

```
struct sigvec {
    void (*sv_handler)(int); /* Signal disposition */
    int    sv_mask;          /* Signals to be blocked in handler */
    int    sv_flags;         /* Flags */
};
```

The *sv_handler* field specifies the disposition of the signal, and is either: the address of a signal handler function; **SIG_DFL**, meaning the default disposition applies for the signal; or **SIG_IGN**, meaning that the signal is ignored.

If *sv_handler* specifies the address of a signal handler, then *sv_mask* specifies a mask of signals that are to be blocked while the handler is executing. In addition, the signal for which the handler is invoked is also blocked. Attempts to block**SIGKILL** or **SIGST OP** are silently ignored.

If *sv_handler* specifies the address of a signal handler, then the *sv_flags* field specifies flags controlling what happens when the handler is called. This field may contain zero or more of the following flags:

SV_INTERRUPT
If the signal handler interrupts a blocking system call, then upon return from the handler the system call is not restarted: instead it fails with the error **EINTR**. If this flag is not specified, then system calls are restarted by default.

SV_RESETHAND
Reset the disposition of the signal to the default before calling the signal handler. If this flag is not specified, then the handler remains established until explicitly removed by a later call to **sigvec**() or until the process performs an **execve**(2).

SV_ONSTACK
Handle the signal on the alternate signal stack (historically established under BSD using the obsolete **sigstack**() function; the POSIX replacement is **sigaltstack**(2)).

The **sigmask**() macro constructs and returns a "signal mask" for *signum*. For example, we can initialize the *vec.sv_mask* field given to **sigvec**() using code such as the following:

```
vec.sv_mask = sigmask(SIGQUIT) | sigmask(SIGABRT);
            /* Block SIGQUIT and SIGABRT during
               handler execution */
```

The **sigblock**() function adds the signals in *mask* to the process's signal mask (like POSIX *sigprocmask(SIG_BLOCK)*), and returns the process's previous signal mask. Attempts to block **SIGKILL** or **SIGSTOP** are silently ignored.

The **sigsetmask**() function sets the process's signal mask to the value given in *mask* (like POSIX *sigprocmask(SIG_SETMASK)*), and returns the process's previous signal mask.

The **siggetmask**() function returns the process's current signal mask. This call is equivalent to *sigblock(0)*.

RETURN VALUE

The **sigvec**() function returns 0 on success; on error, it returns −1 and sets *errno* to indicate the error.

The **sigblock**() and **sigsetmask**() functions return the previous signal mask.

The **sigmask**() macro returns the signal mask for *signum*.

ERRORS

See the ERRORS under **sigaction**(2) and **sigprocmask**(2).

VERSIONS

Starting with glibc 2.21, the GNU C library no longer exports the **sigvec**() function as part of the ABI. (To ensure backward compatibility, the glibc symbol versioning scheme continues to export the interface to binaries linked against older versions of the library.)

ATTRIBUTES

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

Interface	Attribute	Value
sigvec(), **sigmask**(), **sigblock**(), **sigsetmask**(), **siggetmask**()	Thread safety	MT-Safe

STANDARDS

All of these functions were in 4.3BSD, except **siggetmask**(), whose origin is unclear. These functions are obsolete: do not use them in new programs.

NOTES

On 4.3BSD, the **signal**() function provided reliable semantics (as when calling **sigvec**() with *vec.sv_mask* equal to 0). On System V, **signal**() provides unreliable semantics. POSIX.1 leaves these aspects of **signal**() unspecified. See**signal**(2) for further details.

In order to wait for a signal, BSD and System V both provided a function named **sigpause**(3), but this function has a different argument on the two systems. See **sigpause**(3) for details.

SEE ALSO

kill(2), **pause**(2), **sigaction**(2), **signal**(2), **sigprocmask**(2), **raise**(3), **sigpause**(3), **sigset**(3), **signal**(7)