

NAME

sigsetjmp, **siglongjmp**, **setjmp**, **longjmp**, **_setjmp**, **_longjmp**, **longjmperror** - non-local jumps

LIBRARY

Standard C Library (libc, -lc)

SYNOPSIS

#include <setjmp.h>

int

sigsetjmp(*sigjmp_buf env*, *int savemask*);

void

siglongjmp(*sigjmp_buf env*, *int val*);

int

setjmp(*jmp_buf env*);

void

longjmp(*jmp_buf env*, *int val*);

int

_setjmp(*jmp_buf env*);

void

_longjmp(*jmp_buf env*, *int val*);

void

longjmperror(*void*);

DESCRIPTION

The **sigsetjmp**(), **setjmp**(), and **_setjmp**() functions save their calling environment in *env*. Each of these functions returns 0.

The corresponding **longjmp**() functions restore the environment saved by their most recent respective invocations of the **setjmp**() function. They then return so that program execution continues as if the corresponding invocation of the **setjmp**() call had just returned the value specified by *val*, instead of 0.

Pairs of calls may be intermixed, i.e., both **sigsetjmp**() and **siglongjmp**() and **setjmp**() and **longjmp**() combinations may be used in the same program, however, individual calls may not, e.g. the *env*

argument to **setjmp()** may not be passed to **siglongjmp()**.

The **longjmp()** routines may not be called after the routine which called the **setjmp()** routines returns.

All accessible objects have values as of the time **longjmp()** routine was called, except that the values of objects of automatic storage invocation duration that do not have the *volatile* type and have been changed between the **setjmp()** invocation and **longjmp()** call are indeterminate.

The **setjmp()/longjmp()** pairs save and restore the signal mask while **_setjmp()/_longjmp()** pairs save and restore only the register set and the stack. (See **sigprocmask(2)**.)

The **sigsetjmp()/siglongjmp()** function pairs save and restore the signal mask if the argument *savemask* is non-zero, otherwise only the register set and the stack are saved.

ERRORS

If the contents of the *env* are corrupted, or correspond to an environment that has already returned, the **longjmp()** routine calls the routine **longjmperror(3)**. If **longjmperror()** returns the program is aborted (see **abort(3)**). The default version of **longjmperror()** prints the message "longjmp botch" to standard error and returns. User programs wishing to exit more gracefully should write their own versions of **longjmperror()**.

SEE ALSO

sigaction(2), **sigaltstack(2)**, **signal(3)**

STANDARDS

The **setjmp()** and **longjmp()** functions conform to ISO/IEC 9899:1990 ("ISO C90"). The **sigsetjmp()** and **siglongjmp()** functions conform to IEEE Std 1003.1-1988 ("POSIX.1").

HISTORY

The **setjmp()** and **longjmp()** functions first appeared in the Programmer's Workbench (PWB/UNIX).