

**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).