NAME

fegetenv, **feholdexcept**, **fesetenv**, **feupdateenv** - floating-point environment save and restore

LIBRARY

Math Library (libm, -lm)

SYNOPSIS

#include <fenv.h>

#pragma STDC FENV_ACCESS ON

int
fegetenv(*fenv_t *envp*);

int
feholdexcept(*fenv_t *envp*);

int
fesetenv(*const fenv_t *envp*);

int
feupdateenv(*const fenv_t *envp*);

DESCRIPTION

The floating-point environment includes exception flags and masks, the current rounding mode, and other architecture-specific settings. However, it does not include the floating-point register file.

The **fegetenv**() function stores the current floating-point environment in the object pointed to by *envp*, whereas **feholdexcept**() saves the current environment, then clears all exception flags and masks all floating-point exceptions.

The **fesetenv**() function restores a previously saved environment. The **feupdateenv**() function restores a saved environment as well, but it also raises any exceptions that were set in the environment it replaces.

The **feholdexcept**() function is often used with **feupdateenv**() or **fesetenv**() to suppress spurious exceptions that occur as a result of intermediate computations. An example in fenv(3) demonstrates how to do this.

RETURN VALUES

The **fegetenv**(), **feholdexcept**(), **fesetenv**(), and **feupdateenv**() functions return 0 if they succeed, and

non-zero otherwise.

SEE ALSO

feclearexcept(3), fenv(3), feraiseexcept(3), fesetenv(3), fetestexcept(3), fpgetmask(3), fpgetprec(3), fpsetmask(3), fpsetprec(3)

STANDARDS

The **fegetenv**(), **feholdexcept**(), **fesetenv**(), and **feupdateenv**() functions conform to ISO/IEC 9899:1999 ("ISO C99").

HISTORY

These routines first appeared in FreeBSD 5.3.