

IEEE Standards Interpretations for IEEE Std 1003.1™-2001 IEEE Standard for Information Technology - Portable Operating System Interface (POSIX®)

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Interpretation Request #23

Topic: feupdate raising saved exceptions **Relevant Sections:** feupdateenv()

We are requesting clarification on the following: The description of feupdateenv() states "The feupdateenv() function shall attempt to save the currently raised floating-point exceptions in its automatic storage, attempt to install the floating-point environment represented by the object pointed to by envp, and then attempt to raise the saved floating-point exceptions. The argument envp shall point to an object set by a call to feholdexcept() or fegetenv(), or equal a floating-point environment macro." Regarding the statement "and then attempt to raise the saved floating-point exceptions." what floating-point exceptions get raised? (1) Those that were originally saved away in the automatic storage or (2) those that are indicated by envp? Please clarify which floating point exceptions get raised.

Interpretation Response

The standard clearly states the requirements for feupdateenv() that the floating-point exceptions that should be raised are those that are saved, and conforming implementations must conform to this.

Rationale for Interpretation

In effect, feupdateenv is like (ignoring unsuccessful calls):
`int now; now = fetestexcept(FE_ALL_EXCEPT); /* save current exceptions */ fesetenv(envp); /* restore environment */ feraiseexcept(now); /* re-raise current exceptions */`