Rocky Enterprise Linux 9.2 Manual Pages on command 'strerror_l.3'

$ man strerror_l.3

STRERROR(3) Linux Programmer's Manual STRERROR(3)

NAME

strerror, strerrorname_np, strerrordesc_np, strerror_r, strerror_l - return string describing error number

SYNOPSIS

```
#include <string.h>

char *strerror(int errnum);

const char *strerrorname_np(int errnum);

const char *strerrordesc_np(int errnum);

int strerror_r(int errnum, char *buf, size_t buflen);
        /* XSI-compliant */

char *strerror_r(int errnum, char *buf, size_t buflen);
        /* GNU-specific */

char *strerror_l(int errnum, locale_t locale);
```

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

strerrorname_np(), strerrordesc_np():

_GNU_SOURCE

strerror_r():

The XSI-compliant version is provided if:

(_POSIX_C_SOURCE >= 200112L) && ! _GNU_SOURCE

Otherwise, the GNU-specific version is provided.

DESCRIPTION

The strerror() function returns a pointer to a string that describes the error code passed in the argument errnum, possibly using the LC_MESSAGES part of the current locale to select the appropriate lan? guage. (For example, if errnum is EINVAL, the returned description will be "Invalid argument".) This string must not be modified by the application, but may be modified by a subsequent call to strerror() or strerror_l(). No other library function, including perror(3), will modify this string.

Like strerror(), the strerrordesc_np() function returns a pointer to a string that describes the error code passed in the argument errnum, with the difference that the returned string is not translated accord? ing to the current locale.

The strerrorname_np() function returns a pointer to a string containing the name of the error code passed in the argument errnum. For example, given EPERM as an argument, this function returns a pointer to the string "EPERM".

strerror_r()

The strerror_r() function is similar to strerror(), but is thread safe.

This function is available in two versions: an XSI-compliant version specified in POSIX.1-2001 (available since glibc 2.3.4, but not POSIX-compliant until glibc 2.13), and a GNU-specific version (available since glibc 2.0). The XSI-compliant version is provided with the fea? ture test macros settings shown in the SYNOPSIS; otherwise the GNU-spe? cific version is provided. If no feature test macros are explicitly defined, then (since glibc 2.4) _POSIX_C_SOURCE is defined by default with the value 200112L, so that the XSI-compliant version of str? error_r() is provided by default.

The XSI-compliant strerror_r() is preferred for portable applications.

It returns the error string in the user-supplied buffer buf of length

buflen.

The GNU-specific strerror_r() returns a pointer to a string containing the error message. This may be either a pointer to a string that the function stores in buf, or a pointer to some (immutable) static string (in which case buf is unused). If the function stores a string in buf, then at most buflen bytes are stored (the string may be truncated if buflen is too small and errnum is unknown). The string always includes a terminating null byte ('\0').

strerror_l()

strerror_l() is like strerror(), but maps errnum to a locale-dependent error message in the locale specified by locale. The behavior of str? error_l() is undefined if locale is the special locale object LC_GLOBAL_LOCALE or is not a valid locale object handle.

RETURN VALUE

The strerror(), strerror_l(), and the GNU-specific strerror_r() func? tions return the appropriate error description string, or an "Unknown error nnn" message if the error number is unknown.

On success, strerrorname_np() and strerrordesc_np() return the appro? priate error description string. If errnum is an invalid error number, these functions return NULL.

The XSI-compliant strerror_r() function returns 0 on success. On er? ror, a (positive) error number is returned (since glibc 2.13), or -1 is returned and errno is set to indicate the error (glibc versions before 2.13).

POSIX.1-2001 and POSIX.1-2008 require that a successful call to str? error() or strerror_l() shall leave errno unchanged, and note that, since no function return value is reserved to indicate an error, an ap? plication that wishes to check for errors should initialize errno to zero before the call, and then check errno after the call.

ERRORS

EINVAL The value of errnum is not a valid error number.

ERANGE Insufficient storage was supplied to contain the error descrip? tion string.

VERSIONS

The strerror_l() function first appeared in glibc 2.6.

ATTRIBUTES

For an explanation of the terms used in this section, see at?

tributes(7).

??

?Interface ? Attribute ? Value ?

??

?strerror() ? Thread safety ? MT-Unsafe race:strerror ?

??

?strerrorname_np(), ? Thread safety ? MT-Safe ?

?strerrordesc_np() ? ? ?

??

?strerror_r(), ? Thread safety ? MT-Safe ?

?strerror_l() ? ? ?

??

CONFORMING TO

strerror() is specified by POSIX.1-2001, POSIX.1-2008, C89, and C99.

strerror_r() is specified by POSIX.1-2001 and POSIX.1-2008.

strerror_l() is specified in POSIX.1-2008.

The GNU-specific functions strerror_r(), strerrorname_np(), and str?

errordesc_np() are nonstandard extensions.

POSIX.1-2001 permits strerror() to set errno if the call encounters an

error, but does not specify what value should be returned as the func?

tion result in the event of an error. On some systems, strerror() re?

turns NULL if the error number is unknown. On other systems, str?

error() returns a string something like "Error nnn occurred" and sets

errno to EINVAL if the error number is unknown. C99 and POSIX.1-2008

require the return value to be non-NULL.

NOTES

The GNU C Library uses a buffer of 1024 characters for strerror().

This buffer size therefore should be sufficient to avoid an ERANGE er?

ror when calling strerror_r().

strerrorname_np() and strerrordesc_np() are thread-safe and async-sig?
nal-safe.

SEE ALSO

err(3), errno(3), error(3), perror(3), strsignal(3), locale(7)

COLOPHON

This page is part of release 5.10 of the Linux man-pages project. A description of the project, information about reporting bugs, and the latest version of this page, can be found at https://www.kernel.org/doc/man-pages/.