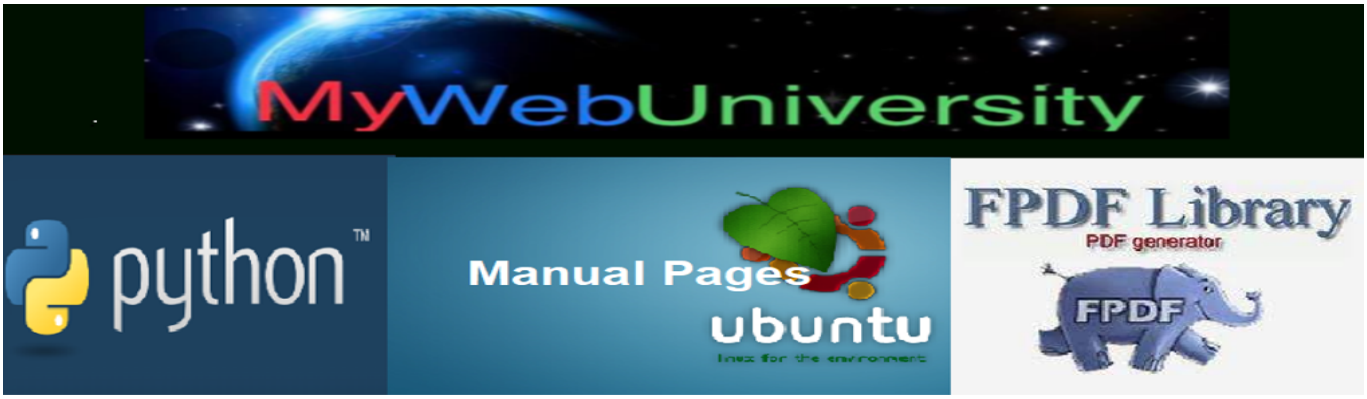

Rocky Enterprise Linux 9.2 Manual Pages on command 'strerror.3'

$ man strerror.3

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

NAME

strerror, strerrorname_np, strerrordesc_np, strerror_r, strerror_l - return string de?

scribing 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 se? lect the appropriate language. (For example, if errnum is EINVAL, the returned descrip? tion 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 de? scribes the error code passed in the argument errnum, with the difference that the re? turned string is not translated according 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 feature test macros settings shown in the SYNOPSIS; otherwise the GNU-specific 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 er? ror 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 strerror_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() functions return the ap? propriate error description string, or an "Unknown error nnn" message if the error number is unknown.

On success, strerrorname_np() and strerrordesc_np() return the appropriate error descrip? tion string. If errnum is an invalid error number, these functions return NULL.

The XSI-compliant strerror_r() function returns 0 on success. On error, a (positive) er? ror 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 strerror() or strerror_l() shall leave errno unchanged, and note that, since no function return value is reserved to indicate an error, an application 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 description string.

VERSIONS

The strerror_l() function first appeared in glibc 2.6.

ATTRIBUTES

For an explanation of the terms used in this section, see attributes(7).

Interface	Attribute	Value
strerror()	Thread safety	MT-Unsafe race:strerror
strerrorname_np(), strerrordesc_np()	Thread safety	MT-Safe
strerror_r(), strerror_l()	Thread safety	MT-Safe

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 strerrordesc_np() are non? standard 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 function result in the event of an error. On some systems, strerror() returns NULL if the error number is unknown. On other systems, strerror() 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 error when calling strerror_r().

strerrorname_np() and strerrordesc_np() are thread-safe and async-signal-safe.

SEE ALSO

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

COLOPHON

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