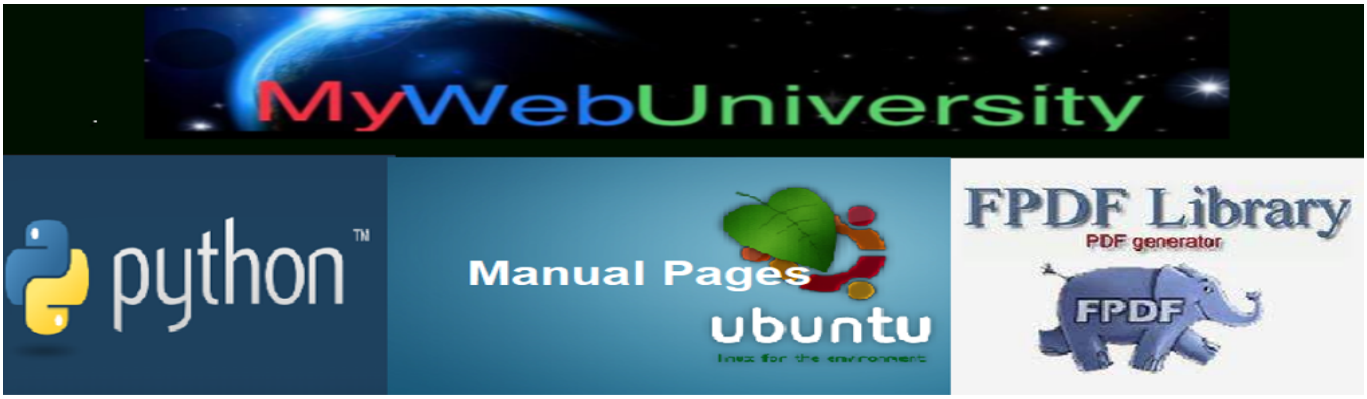

Rocky Enterprise Linux 9.2 Manual Pages on command 'realpath.3'

$ man realpath.3

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

NAME

realpath - return the canonicalized absolute pathname

SYNOPSIS

```
#include <limits.h>
#include <stdlib.h>
char *realpath(const char *path, char *resolved_path);
```

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

realpath():

```
_XOPEN_SOURCE >= 500
    || /* Glibc since 2.19: */ _DEFAULT_SOURCE
    || /* Glibc versions <= 2.19: */ _BSD_SOURCE
```

DESCRIPTION

realpath() expands all symbolic links and resolves references to /./, /../ and extra '/' characters in the null-terminated string named by path to produce a canonicalized absolute pathname. The resulting pathname is stored as a null-terminated string, up to a maximum of PATH_MAX bytes, in the buffer pointed to by resolved_path. The resulting path will have no symbolic link, /./ or /../ components.

If resolved_path is specified as NULL, then realpath() uses malloc(3) to allocate a buffer of up to PATH_MAX bytes to hold the resolved pathname, and returns a pointer to this buf? fer. The caller should deallocate this buffer using free(3).

RETURN VALUE

If there is no error, realpath() returns a pointer to the resolved_path.

Otherwise, it returns NULL, the contents of the array resolved_path are undefined, and er?

rno is set to indicate the error.

ERRORS

EACCES Read or search permission was denied for a component of the path prefix.

EINVAL path is NULL. (In glibc versions before 2.3, this error is also returned if re?

solved_path is NULL.)

EIO An I/O error occurred while reading from the filesystem.

ELOOP Too many symbolic links were encountered in translating the pathname.

ENAMETOOLONG

A component of a pathname exceeded NAME_MAX characters, or an entire pathname ex?

ceeded PATH_MAX characters.

ENOENT The named file does not exist.

ENOMEM Out of memory.

ENOTDIR

A component of the path prefix is not a directory.

ATTRIBUTES

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

??????????????????????????????????????

?Interface ? Attribute ? Value ?

??????????????????????????????????????

?realpath() ? Thread safety ? MT-Safe ?

??????????????????????????????????????

CONFORMING TO

4.4BSD, POSIX.1-2001.

POSIX.1-2001 says that the behavior if resolved_path is NULL is implementation-defined.

POSIX.1-2008 specifies the behavior described in this page.

NOTES

In 4.4BSD and Solaris, the limit on the pathname length is MAXPATHLEN (found in

<sys/param.h>). SUSv2 prescribes PATH_MAX and NAME_MAX, as found in <limits.h> or pro?

vided by the pathconf(3) function. A typical source fragment would be

```
#ifdef PATH_MAX
  path_max = PATH_MAX;
#else
```

```
        path_max = pathconf(path, _PC_PATH_MAX);
        if (path_max <= 0)
          path_max = 4096;
      #endif
```

(But see the BUGS section.)

GNU extensions

If the call fails with either EACCES or ENOENT and resolved_path is not NULL, then the prefix of path that is not readable or does not exist is returned in resolved_path.

BUGS

The POSIX.1-2001 standard version of this function is broken by design, since it is impossible to determine a suitable size for the output buffer, resolved_path. According to POSIX.1-2001 a buffer of size PATH_MAX suffices, but PATH_MAX need not be a defined constant, and may have to be obtained using pathconf(3). And asking pathconf(3) does not really help, since, on the one hand POSIX warns that the result of pathconf(3) may be huge and unsuitable for mallocing memory, and on the other hand pathconf(3) may return -1 to signify that PATH_MAX is not bounded. The resolved_path == NULL feature, not standardized in POSIX.1-2001, but standardized in POSIX.1-2008, allows this design problem to be avoided.

SEE ALSO

realpath(1), readlink(2), canonicalize_file_name(3), getcwd(3), pathconf(3), sysconf(3)

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/.