

NAME

getcwd, getwd, get_current_dir_name - get current working directory

SYNOPSIS

```
#include <unistd.h>

char *getcwd(char *buf, size_t size);

char *getwd(char *buf);

char *get_current_dir_name(void);
```

Feature Test Macro Requirements for glibc (see [feature_test_macros\(7\)](#)):

```
get_current_dir_name():
    _GNU_SOURCE
```

```
getwd():
```

Since glibc 2.12:

```
    _BSD_SOURCE ||
    ( _XOPEN_SOURCE >= 500 ||
      _XOPEN_SOURCE && _XOPEN_SOURCE_EXTENDED) &&
    !(_POSIX_C_SOURCE >= 200809L || _XOPEN_SOURCE >= 700)
```

Before glibc 2.12:

```
    _BSD_SOURCE || _XOPEN_SOURCE >= 500 ||
    _XOPEN_SOURCE && _XOPEN_SOURCE_EXTENDED
```

DESCRIPTION

These functions return a null-terminated string containing an absolute pathname that is the current working directory of the calling process. The pathname is returned as the function result and via the argument *buf*, if present.

The `getcwd()` function copies an absolute pathname of the current working directory to the array pointed to by *buf*, which is of length *size*.

If the length of the absolute pathname of the current working directory, including the terminating null byte, exceeds *size* bytes, NULL is returned, and *errno* is set to **ERANGE**; an application should check for this error, and allocate a larger buffer if necessary.

As an extension to the POSIX.1-2001 standard, glibc's `getcwd()` allocates the buffer dynamically using [malloc\(3\)](#) if *buf* is NULL. In this case, the allocated buffer has the length *size* unless *size* is zero, when *buf* is allocated as big as necessary. The caller should [free\(3\)](#) the returned buffer.

`get_current_dir_name()` will [malloc\(3\)](#) an array big enough to hold the absolute pathname of the current working directory. If the environment variable **PWD** is set, and its value is correct, then that value will be returned. The caller should [free\(3\)](#) the returned buffer.

`getwd()` does not [malloc\(3\)](#) any memory. The *buf* argument should be a pointer to an array at least **PATH_MAX** bytes long. If the length of the absolute pathname of the current working directory, including the terminating null byte, exceeds **PATH_MAX** bytes, NULL is returned, and *errno* is set to **ENAMETOOLONG**. (Note that on some systems, **PATH_MAX** may not be a compile-time constant; furthermore, its value may depend on the filesystem, see [pathconf\(3\)](#).) For portability and security reasons, use of `getwd()` is deprecated.

RETURN VALUE

On success, these functions return a pointer to a string containing the pathname of the current working directory. In the case of `getcwd()` and `getwd()` this is the same value as *buf*.

On failure, these functions return NULL, and *errno* is set to indicate the error. The contents of the array pointed to by *buf* are undefined on error.

ERRORS

EACCES

Permission to read or search a component of the filename was denied.

EFAULT

buf points to a bad address.

EINVAL

The *size* argument is zero and *buf* is not a null pointer.

EINVAL

getwd(): *buf* is NULL.

ENAMETOOLONG

getwd(): The size of the null-terminated absolute pathname string exceeds **PATH_MAX** bytes.

ENOENT

The current working directory has been unlinked.

ERANGE

The *size* argument is less than the length of the absolute pathname of the working directory, including the terminating null byte. You need to allocate a bigger array and try again.

CONFORMING TO

getcwd() conforms to POSIX.1-2001. Note however that POSIX.1-2001 leaves the behavior of **getcwd()** unspecified if *buf* is NULL.

getwd() is present in POSIX.1-2001, but marked LEGACY. POSIX.1-2008 removes the specification of **getwd()**. Use **getcwd()** instead. POSIX.1-2001 does not define any errors for **getwd()**.

get_current_dir_name() is a GNU extension.

NOTES

Under Linux, the function **getcwd()** is a system call (since 2.1.92). On older systems it would query */proc/self/cwd*. If both system call and *proc* filesystem are missing, a generic implementation is called. Only in that case can these calls fail under Linux with **EACCES**.

These functions are often used to save the location of the current working directory for the purpose of returning to it later. Opening the current directory (.) and calling [fchdir\(2\)](#) to return is usually a faster and more reliable alternative when sufficiently many file descriptors are available, especially on platforms other than Linux.

SEE ALSO

[chdir\(2\)](#), [fchdir\(2\)](#), [open\(2\)](#), [unlink\(2\)](#), [free\(3\)](#), [malloc\(3\)](#)

COLOPHON

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