

# readdir() — Read an Entry from a Directory

## Standards

Standards / Extensions	C or C++	Dependencies
POSIX.1 XPG4 XPG4.2 Single UNIX Specification, Version 3	both	

## Format

```
#define POSIX_SOURCE
#include <dirent.h>
```

```
struct dirent *readdir(DIR *dir);
```

## General Description

Returns a pointer to a `dirent` structure describing the next directory entry in the directory stream associated with *dir*.

A call to `readdir()` overwrites data produced by a previous call to `readdir()` or `__readdir2()` on the same directory stream. Calls for different directory streams do not overwrite each other's data.

Each call to `readdir()` updates the `st_atime` (access time) field for the directory.

A `dirent` structure contains the character pointer *d\_name*, which points to a string that gives the name of a file in the directory. This string ends in a terminating NULL, and has a maximum of `NAME_MAX` characters.

Save the data from `readdir()`, if required, before calling `closedir()`, because `closedir()` frees the data.

If the contents of a directory have changed since the directory was opened (files added or removed); a call should be made to `rewinddir()` so that subsequent `readdir()` requests can read the new contents.

## Special Behavior for XPG4

If entries for dot or dot-dot exist, one entry will be returned for dot and one entry will be returned for dot-dot; otherwise they will not be returned.

After a call to `fork()`, either the parent or child (but not both) may continue processing the directory stream using `__readdir2()`, `readdir()`, `rewinddir()`, or `seekdir()`. If both the parent and child processes use these functions, the result is undefined.

## Special Behavior for XPG4.2

If the entry names a symbolic link, the value of `d_ino` member in *dirent* structure is unspecified.

## Returned Value

If successful, `readdir()` returns a pointer to a `dirent` structure describing the next directory entry in the directory stream. When `readdir()` reaches the end of the directory stream, it returns a NULL pointer.

If unsuccessful, `readdir()` returns a NULL pointer and sets `errno` to one of the following values:

## Error Code

### Description

EBADF

*dir* does not yield an open directory stream.

EINVAL

The buffer was too small to contain any directories.

ENOENT

**Added for XPG4.2:** The current position of the directory stream is invalid.

E\_OVERFLOW

One of the values in the structure to be returned cannot be represented correctly.