

NAME

readdir_r – read a directory

SYNOPSIS

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

```
int readdir_r(DIR *dirp, struct dirent *entry, struct dirent **result);
```

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

```
readdir_r():
    _POSIX_C_SOURCE
    || /* Glibc versions <= 2.19: */ _BSD_SOURCE || _SVID_SOURCE
```

DESCRIPTION

This function is deprecated; use **readdir(3)** instead.

The **readdir_r()** function was invented as a reentrant version of **readdir(3)**. It reads the next directory entry from the directory stream *dirp*, and returns it in the caller-allocated buffer pointed to by *entry*. For details of the *dirent* structure, see **readdir(3)**.

A pointer to the returned buffer is placed in **result*; if the end of the directory stream was encountered, then NULL is instead returned in **result*.

It is recommended that applications use **readdir(3)** instead of **readdir_r()**. Furthermore, since version 2.24, glibc deprecates **readdir_r()**. The reasons are as follows:

- * On systems where **NAME_MAX** is undefined, calling **readdir_r()** may be unsafe because the interface does not allow the caller to specify the length of the buffer used for the returned directory entry.
- * On some systems, **readdir_r()** can't read directory entries with very long names. When the glibc implementation encounters such a name, **readdir_r()** fails with the error **ENAMETOOLONG** *after the final directory entry has been read*. On some other systems, **readdir_r()** may return a success status, but the returned *d_name* field may not be null terminated or may be truncated.
- * In the current POSIX.1 specification (POSIX.1-2008), **readdir(3)** is not required to be thread-safe. However, in modern implementations (including the glibc implementation), concurrent calls to **readdir(3)** that specify different directory streams are thread-safe. Therefore, the use of **readdir_r()** is generally unnecessary in multithreaded programs. In cases where multiple threads must read from the same directory stream, using **readdir(3)** with external synchronization is still preferable to the use of **readdir_r()**, for the reasons given in the points above.
- * It is expected that a future version of POSIX.1 will make **readdir_r()** obsolete, and require that **readdir(3)** be thread-safe when concurrently employed on different directory streams.

RETURN VALUE

The **readdir_r()** function returns 0 on success. On error, it returns a positive error number (listed under **ERRORS**). If the end of the directory stream is reached, **readdir_r()** returns 0, and returns NULL in **result*.

ERRORS**EBADF**

Invalid directory stream descriptor *dirp*.

ENAMETOOLONG

A directory entry whose name was too long to be read was encountered.

ATTRIBUTES

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

Interface	Attribute	Value
readdir_r()	Thread safety	MT-Safe

CONFORMING TO

POSIX.1-2001, POSIX.1-2008.

SEE ALSO

readdir(3)

COLOPHON

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