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# Rocky Enterprise Linux 9.2 Manual Pages on command 'posix_fallocate.3'

***$ man posix_fallocate.3***

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

NAME

posix_fallocate - allocate file space

SYNOPSIS

```
#include <fcntl.h>

int posix_fallocate(int fd, off_t offset, off_t len);
```

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

posix_fallocate():

_POSIX_C_SOURCE >= 200112L

DESCRIPTION

The function posix_fallocate() ensures that disk space is allocated for the file referred to by the file descriptor fd for the bytes in the range starting at offset and continuing for len bytes. After a suc? cessful call to posix_fallocate(), subsequent writes to bytes in the specified range are guaranteed not to fail because of lack of disk space.

If the size of the file is less than offset+len, then the file is in? creased to this size; otherwise the file size is left unchanged.

## RETURN VALUE

posix_fallocate() returns zero on success, or an error number on fail?
ure. Note that errno is not set.

## ERRORS

EBADF fd is not a valid file descriptor, or is not opened for writing.

EFBIG offset+len exceeds the maximum file size.

EINTR A signal was caught during execution.

EINVAL offset was less than 0, or len was less than or equal to 0, or
the underlying filesystem does not support the operation.

ENODEV fd does not refer to a regular file.

ENOSPC There is not enough space left on the device containing the file
referred to by fd.

EOPNOTSUPP
The filesystem containing the file referred to by fd does not
support this operation. This error code can be returned by C
libraries that don't perform the emulation shown in NOTES, such
as musl libc.

ESPIPE fd refers to a pipe.

## VERSIONS

posix_fallocate() is available since glibc 2.1.94.

## ATTRIBUTES

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

| Interface | Attribute | Value |
|---|---|---|
| posix_fallocate() | Thread safety | MT-Safe (but see NOTES) |

## CONFORMING TO

POSIX.1-2001.

POSIX.1-2008 says that an implementation shall give the EINVAL error if
len was 0, or offset was less than 0. POSIX.1-2001 says that an imple?
mentation shall give the EINVAL error if len is less than 0, or offset

was less than 0, and may give the error if len equals zero.

## NOTES

In the glibc implementation, posix_fallocate() is implemented using the
fallocate(2) system call, which is MT-safe.  If the underlying filesys?
tem  does not support fallocate(2), then the operation is emulated with
the following caveats:

* The emulation is inefficient.
* There is a race condition where concurrent writes from another thread
  or process could be overwritten with null bytes.
* There is a race condition where concurrent file size increases by an?
  other thread or process could result in a file whose size is  smaller
  than expected.
* If  fd has been opened with the O_APPEND or O_WRONLY flags, the func?
  tion fails with the error EBADF.

In general, the emulation is not MT-safe.  On Linux,  applications  may
use  fallocate(2)  if  they  cannot tolerate the emulation caveats.  In
general, this is only recommended if the application plans to terminate
the  operation if EOPNOTSUPP is returned, otherwise the application it?
self will need to implement a fallback with all the  same  problems  as
the emulation provided by glibc.

## SEE ALSO

fallocate(1), fallocate(2), lseek(2), posix_fadvise(2)

## COLOPHON

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