



## ***Red Hat Enterprise Linux Release 9.2 Manual Pages on 'pread.2' command***

### ***\$ man pread.2***

PREAD(2)                      Linux Programmer's Manual                      PREAD(2)

#### NAME

pread, pwrite - read from or write to a file descriptor at a given off?  
set

#### SYNOPSIS

```
#include <unistd.h>

ssize_t pread(int fd, void *buf, size_t count, off_t offset);

ssize_t pwrite(int fd, const void *buf, size_t count, off_t offset);
```

Feature Test Macro Requirements for glibc (see feature\_test\_macros(7)):

```
pread(), pwrite():

    _XOPEN_SOURCE >= 500

    || /* Since glibc 2.12: */ _POSIX_C_SOURCE >= 200809L
```

#### DESCRIPTION

pread() reads up to count bytes from file descriptor fd at offset off?  
set (from the start of the file) into the buffer starting at buf. The  
file offset is not changed.

pwrite() writes up to count bytes from the buffer starting at buf to  
the file descriptor fd at offset offset. The file offset is not  
changed.

The file referenced by fd must be capable of seeking.

#### RETURN VALUE

On success, pread() returns the number of bytes read (a return of zero  
indicates end of file) and pwrite() returns the number of bytes writ?

ten.

Note that it is not an error for a successful call to transfer fewer bytes than requested (see `read(2)` and `write(2)`).

On error, -1 is returned and `errno` is set to indicate the cause of the error.

## ERRORS

`pread()` can fail and set `errno` to any error specified for `read(2)` or `lseek(2)`. `pwrite()` can fail and set `errno` to any error specified for `write(2)` or `lseek(2)`.

## VERSIONS

The `pread()` and `pwrite()` system calls were added to Linux in version 2.1.60; the entries in the i386 system call table were added in 2.1.69. C library support (including emulation using `lseek(2)` on older kernels without the system calls) was added in glibc 2.1.

## CONFORMING TO

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

## NOTES

The `pread()` and `pwrite()` system calls are especially useful in multi-threaded applications. They allow multiple threads to perform I/O on the same file descriptor without being affected by changes to the file offset by other threads.

### C library/kernel differences

On Linux, the underlying system calls were renamed in kernel 2.6: `pread()` became `pread64()`, and `pwrite()` became `pwrite64()`. The system call numbers remained the same. The glibc `pread()` and `pwrite()` wrapper functions transparently deal with the change.

On some 32-bit architectures, the calling signature for these system calls differ, for the reasons described in `syscall(2)`.

## BUGS

POSIX requires that opening a file with the `O_APPEND` flag should have no effect on the location at which `pwrite()` writes data. However, on Linux, if a file is opened with `O_APPEND`, `pwrite()` appends data to the end of the file, regardless of the value of offset.

## SEE ALSO

lseek(2), read(2), readv(2), write(2)

## 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/>.

Linux

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