



Linux Ubuntu 26.04 Manual Pages on command 'pread.2'

\$ man pread.2

pread(2) System Calls Manual pread(2)

NAME

pread, pwrite - read from or write to a file descriptor at a given offset

LIBRARY

Standard C library (libc, -lc)

SYNOPSIS

```
#include <unistd.h>
```

```
ssize_t pread(size_t count;
```

```
          int fd, void buf[count], size_t count,
```

```
          off_t offset);
```

```
ssize_t pwrite(size_t count;
```

```
          int fd, const void buf[count], 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 offset (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 written.

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 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)`.

STANDARDS

POSIX.1-2024.

HISTORY

POSIX.1-2001.

Added in Linux 2.1.60; the entries in the i386 system call table were added in Linux 2.1.69.

C library support (including emulation using `lseek(2)` on older kernels without the system calls) was added in glibc 2.1.

C library/kernel differences

On Linux, the underlying system calls were renamed in Linux 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)`.

NOTES

The `pread()` and `pwrite()` system calls are especially useful in multithreaded 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.

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)`