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## ***Red Hat Enterprise Linux Release 9.2 Manual Pages on 'fread.3p' command***

***\$ man fread.3p***

FREAD(3P)                    POSIX Programmer's Manual                    FREAD(3P)

### PROLOG

This manual page is part of the POSIX Programmer's Manual. The Linux implementation of this interface may differ (consult the corresponding Linux manual page for details of Linux behavior), or the interface may not be implemented on Linux.

### NAME

fread ? binary input

### SYNOPSIS

```
#include <stdio.h>

size_t fread(void *restrict ptr, size_t size, size_t nitems,
             FILE *restrict stream);
```

### DESCRIPTION

The functionality described on this reference page is aligned with the ISO C standard. Any conflict between the requirements described here and the ISO C standard is unintentional. This volume of POSIX.1?2017 defers to the ISO C standard.

The `fread()` function shall read into the array pointed to by `ptr` up to `nitems` elements whose size is specified by `size` in bytes, from the stream pointed to by `stream`. For each object, `size` calls shall be made to the `fgetc()` function and the results stored, in the order read, in an array of unsigned char exactly overlaying the object. The file position indicator for the stream (if defined) shall be advanced by the

number of bytes successfully read. If an error occurs, the resulting value of the file position indicator for the stream is unspecified. If a partial element is read, its value is unspecified.

The `fread()` function may mark the last data access timestamp of the file associated with stream for update. The last data access timestamp shall be marked for update by the first successful execution of `fgetc()`, `fgets()`, `fread()`, `fscanf()`, `getc()`, `getchar()`, `getdelim()`, `getline()`, `gets()`, or `scanf()` using stream that returns data not supplied by a prior call to `ungetc()`.

## RETURN VALUE

Upon successful completion, `fread()` shall return the number of elements successfully read which is less than `nitems` only if a read error or end-of-file is encountered. If `size` or `nitems` is 0, `fread()` shall return 0 and the contents of the array and the state of the stream remain unchanged. Otherwise, if a read error occurs, the error indicator for the stream shall be set, and `errno` shall be set to indicate the error.

## ERRORS

Refer to `fgetc()`.

The following sections are informative.

## EXAMPLES

### Reading from a Stream

The following example transfers a single 100-byte fixed length record from the `fp` stream into the array pointed to by `buf`.

```
#include <stdio.h>
...
size_t elements_read;
char buf[100];
FILE *fp;
...
elements_read = fread(buf, sizeof(buf), 1, fp);
...
```

If a read error occurs, `elements_read` will be zero but the number of bytes read from the stream could be anything from zero to

sizeof(buf)-1.

The following example reads multiple single-byte elements from the fp stream into the array pointed to by buf.

```
#include <stdio.h>

...

size_t bytes_read;

char buf[100];

FILE *fp;

...

bytes_read = fread(buf, 1, sizeof(buf), fp);

...
```

If a read error occurs, bytes\_read will contain the number of bytes read from the stream.

#### APPLICATION USAGE

The ferror() or feof() functions must be used to distinguish between an error condition and an end-of-file condition.

Because of possible differences in element length and byte ordering, files written using fwrite() are application-dependent, and possibly cannot be read using fread() by a different application or by the same application on a different processor.

#### RATIONALE

None.

#### FUTURE DIRECTIONS

None.

#### SEE ALSO

Section 2.5, Standard I/O Streams, feof(), ferror(), fgetc(), fopen(), fscanf(), getc(), gets()

The Base Definitions volume of POSIX.1?2017, <stdio.h>

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