

**NAME**

scanf, fscanf, vscanf, vfscanf – input FILE format conversion

**LIBRARY**

Standard C library (*libc*, *-lc*)

**SYNOPSIS**

```
#include <stdio.h>

int scanf(const char *restrict format, ...);
int fscanf(FILE *restrict stream,
           const char *restrict format, ...);

#include <stdarg.h>

int vscanf(const char *restrict format, va_list ap);
int vfscanf(FILE *restrict stream,
            const char *restrict format, va_list ap);
```

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

```
vscanf(), vfscanf():
    _ISOC99_SOURCE || _POSIX_C_SOURCE >= 200112L
```

**DESCRIPTION**

The **scanf()** family of functions scans input like **sscanf(3)**, but read from a *FILE*. It is very difficult to use these functions correctly, and it is preferable to read entire lines with **fgets(3)** or **getline(3)** and parse them later with **sscanf(3)** or more specialized functions such as **strtol(3)**.

The **scanf()** function reads input from the standard input stream *stdin* and **fscanf()** reads input from the stream pointer *stream*.

The **vfscanf()** function is analogous to **vfprintf(3)** and reads input from the stream pointer *stream* using a variable argument list of pointers (see **stdarg(3)**). The **vscanf()** function is analogous to **vprintf(3)** and reads from the standard input.

**RETURN VALUE**

On success, these functions return the number of input items successfully matched and assigned; this can be fewer than provided for, or even zero, in the event of an early matching failure.

The value **EOF** is returned if the end of input is reached before either the first successful conversion or a matching failure occurs. **EOF** is also returned if a read error occurs, in which case the error indicator for the stream (see **ferror(3)**) is set, and *errno* is set to indicate the error.

**ERRORS****EAGAIN**

The file descriptor underlying *stream* is marked nonblocking, and the read operation would block.

**EBADF**

The file descriptor underlying *stream* is invalid, or not open for reading.

**EILSEQ**

Input byte sequence does not form a valid character.

**EINTR**

The read operation was interrupted by a signal; see **signal(7)**.

**EINVAL**

Not enough arguments; or *format* is NULL.

**ENOMEM**

Out of memory.

**ATTRIBUTES**

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

Interface	Attribute	Value
scanf(), fscanf(), vscanf(), vfscanf()	Thread safety	MT-Safe locale

**STANDARDS**

These functions conform to C99 and POSIX.1-2001.

**SEE ALSO**

**fgets(3)**, **getline(3)**, **sscanf(3)**