

NAME

statvfs, fstatvfs – get filesystem statistics

LIBRARY

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

SYNOPSIS

```
#include <sys/statvfs.h>
```

```
int statvfs(const char *restrict path, struct statvfs *restrict buf);
```

```
int fstatvfs(int fd, struct statvfs *buf);
```

DESCRIPTION

The function **statvfs()** returns information about a mounted filesystem. *path* is the pathname of any file within the mounted filesystem. *buf* is a pointer to a *statvfs* structure defined approximately as follows:

```
struct statvfs {
    unsigned long  f_bsize;      /* Filesystem block size */
    unsigned long  f_frsize;     /* Fragment size */
    fsblkcnt_t     f_blocks;     /* Size of fs in f_frsize units */
    fsblkcnt_t     f_bfree;      /* Number of free blocks */
    fsblkcnt_t     f_bavail;     /* Number of free blocks for
                                   unprivileged users */
    fsfilcnt_t     f_files;      /* Number of inodes */
    fsfilcnt_t     f_ffree;      /* Number of free inodes */
    fsfilcnt_t     f_favail;     /* Number of free inodes for
                                   unprivileged users */
    unsigned long  f_fsid;       /* Filesystem ID */
    unsigned long  f_flag;       /* Mount flags */
    unsigned long  f_namemax;    /* Maximum filename length */
};
```

Here the types *fsblkcnt_t* and *fsfilcnt_t* are defined in *<sys/types.h>*. Both used to be *unsigned long*.

The field *f_flag* is a bit mask indicating various options that were employed when mounting this filesystem. It contains zero or more of the following flags:

ST_MANDLOCK

Mandatory locking is permitted on the filesystem (see **fcntl(2)**).

ST_NOATIME

Do not update access times; see **mount(2)**.

ST_NODEV

Disallow access to device special files on this filesystem.

ST_NODIRATIME

Do not update directory access times; see **mount(2)**.

ST_NOEXEC

Execution of programs is disallowed on this filesystem.

ST_NOSUID

The set-user-ID and set-group-ID bits are ignored by **exec(3)** for executable files on this filesystem

ST_RDONLY

This filesystem is mounted read-only.

ST_RELATIME

Update atime relative to mtime/ctime; see **mount(2)**.

ST_SYNCHRONOUS

Writes are synched to the filesystem immediately (see the description of **O_SYNC** in **open(2)**).

It is unspecified whether all members of the returned struct have meaningful values on all filesystems.

fstatvfs() returns the same information about an open file referenced by descriptor *fd*.

RETURN VALUE

On success, zero is returned. On error, -1 is returned, and *errno* is set to indicate the error.

ERRORS

EACCES

(**statvfs()**) Search permission is denied for a component of the path prefix of *path*. (See also **path_resolution(7)**.)

EBADF

(**fstatvfs()**) *fd* is not a valid open file descriptor.

EFAULT

Buf or *path* points to an invalid address.

EINTR

This call was interrupted by a signal; see **signal(7)**.

EIO

An I/O error occurred while reading from the filesystem.

ELOOP

(**statvfs()**) Too many symbolic links were encountered in translating *path*.

ENAMETOOLONG

(**statvfs()**) *path* is too long.

ENOENT

(**statvfs()**) The file referred to by *path* does not exist.

ENOMEM

Insufficient kernel memory was available.

ENOSYS

The filesystem does not support this call.

ENOTDIR

(**statvfs()**) A component of the path prefix of *path* is not a directory.

EOVERFLOW

Some values were too large to be represented in the returned struct.

ATTRIBUTES

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

Interface	Attribute	Value
statvfs() , fstatvfs()	Thread safety	MT-Safe

STANDARDS

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

Only the **ST_NOSUID** and **ST_RDONLY** flags of the *f_flag* field are specified in POSIX.1. To obtain definitions of the remaining flags, one must define **_GNU_SOURCE**.

NOTES

The Linux kernel has system calls **statfs(2)** and **fstatfs(2)** to support this library call.

Before glibc 2.13, **statvfs()** populated the bits of the *f_flag* field by scanning the mount options shown in */proc/mounts*. However, starting with Linux 2.6.36, the underlying **statfs(2)** system call provides the necessary information via the *f_flags* field, and since glibc 2.13, the **statvfs()** function will use information from that field rather than scanning */proc/mounts*.

The glibc implementations of

```
pathconf(path, _PC_REC_XFER_ALIGN);
pathconf(path, _PC_ALLOC_SIZE_MIN);
```

```
pathconf(path, _PC_REC_MIN_XFER_SIZE);
```

respectively use the *f_frsize*, *f_frsize*, and *f_bsize* fields returned by a call to **statvfs()** with the argument *path*.

SEE ALSO

statfs(2)