NAME

filesystems − Linux filesystem types: ext, ext2, ext3, ext4, hpfs, iso9660, JFS, minix, msdos, ncpfs nfs, ntfs, proc, Reiserfs, smb, sysv, umsdos, vfat, XFS, xiafs

DESCRIPTION

When, as is customary, the **proc** filesystem is mounted on */proc*, you can find in the file */proc/filesystems* which filesystems your kernel currently supports; see **proc**(5) for more details. There is also a legacy **sysfs**(2) system call (whose availability is controlled by the **CONFIG_SYSFS_SYSCALL** kernel build configuration option since Linux 3.15) that enables enumeration of the currently available filesystem types regardless of */proc* availability and/or sanity.

If you need a currently unsupported filesystem, insert the corresponding kernel module or recompile the kernel.

In order to use a filesystem, you have to *mount* it; see **mount**(2) and **mount**(8).

The following list provides a short description of the available or historically available filesystems in the Linux kernel. See the kernel documentation for a comprehensive description of all options and limitations.

ext is an elaborate extension of the **minix** filesystem. It has been completely superseded by the second version of the extended filesystem (**ext2**) and has been removed from the kernel (in Linux 2.1.21).

ext2 is a disk filesystem that was used by Linux for fixed disks as well as removable media. The second extended filesystem was designed as an extension of the extended filesystem (**ext**). See **ext2**(5).

ext3 is a journaling version of the **ext2** filesystem. It is easy to switch back and forth between **ext2** and **ext3**. See**ext3**(5).

ext4 is a set of upgrades to **ext3** including substantial performance and reliability enhancements, plus large increases in volume, file, and directory size limits. See **ext4**(5).

hpfs is the High Performance Filesystem, used in OS/2. This filesystem is read-only under Linux due to the lack of available documentation.

iso9660 is a CD-ROM filesystem type conforming to the ISO 9660 standard.

High Sierra
Linux supports High Sierra, the precursor to the ISO 9660 standard for CD-ROM filesystems. It is automatically recognized within the**iso9660** filesystem support under Linux.

Rock Ridge
Linux also supports the System Use Sharing Protocol records specified by the Rock Ridge Interchange Protocol. They are used to further describe the files in the **iso9660** filesystem to a UNIX host, and provide information such as long filenames, UID/GID, POSIX permissions, and devices. It is automatically recognized within the**iso9660** filesystem support under Linux.

JFS is a journaling filesystem, developed by IBM, that was integrated into Linux 2.4.24.

minix is the filesystem used in the Minix operating system, the first to run under Linux. It has a number of shortcomings, including a 64 MB partition size limit, short filenames, and a single timestamp. It remains useful for floppies and RAM disks.

msdos is the filesystem used by DOS, Windows, and some OS/2 computers. **msdos** filenames can be no longer than 8 characters, followed by an optional period and 3 character extension.

ncpfs is a network filesystem that supports the NCP protocol, used by Novell NetWare. It was removed from the kernel in Linux 4.17.

To use **ncpfs**, you need special programs, which can be found at ⟨ftp://ftp.gwdg.de/pub/linux/misc/ncpfs⟩.

nfs is the network filesystem used to access disks located on remote computers.

ntfs is the filesystem native to Microsoft Windows NT, supporting features like ACLs, journaling, encryption, and so on.

proc is a pseudo filesystem which is used as an interface to kernel data structures rather than reading and interpreting */dev/kmem*. In particular, its files do not take disk space. See **proc**(5).

Reiserfs is a journaling filesystem, designed by Hans Reiser, that was integrated into Linux 2.4.1.

smb is a network filesystem that supports the SMB protocol, used by Windows. See ⟨https://www.samba.org/samba/smbfs/⟩.

sysv is an implementation of the System V/Coherent filesystem for Linux. It implements all of Xenix FS, System V/386 FS, and Coherent FS.

umsdos is an extended DOS filesystem used by Linux. It adds capability for long filenames, UID/GID, POSIX permissions, and special files (devices, named pipes, etc.) under the DOS filesystem, without sacrificing compatibility with DOS.

tmpfs is a filesystem whose contents reside in virtual memory. Since the files on such filesystems typically reside in RAM, file access is extremely fast. See**tmpfs**(5).

vfat is an extended FAT filesystem used by Microsoft Windows95 and Windows NT. **vfat** adds the capability to use long filenames under the MSDOS filesystem.

XFS is a journaling filesystem, developed by SGI, that was integrated into Linux 2.4.20.

xiafs was designed and implemented to be a stable, safe filesystem by extending the Minix filesystem code. It provides the basic most requested features without undue complexity. The**xiafs** filesystem is no longer actively developed or maintained. It was removed from the kernel in Linux 2.1.21.

SEE ALSO

fuse(4), **btrfs**(5), **ext2**(5), **ext3**(5), **ext4**(5), **nfs**(5), **proc**(5), **sysfs**(5), **tmpfs**(5), **xfs**(5), **fsck**(8), **mkfs**(8), **mount**(8)