NAME

hsfs – High Sierra & ISO 9660 CD-ROM filesystem

DESCRIPTION

HSFS is a filesystem type that allows users access to files on High Sierra or ISO 9660 format CD-ROM disks from within the SunOS operating system. Once mounted, a HSFS filesystem provides standard SunOS read-only file system operations and semantics. That is, users can read files and list files in a directory on a High Sierra or ISO 9660 CD-ROM, and applications can use standard UNIX system calls on these files and directories.

This filesystem also contains support for the Rock Ridge Extensions. If the extensions are contained on the CD-ROM, then the filesystem will provide all of the filesystem semantics and file types of UFS, except for writability and hard links.

HSFS filesystems are mounted either with the command:

mount –**F hsfs** –**o ro** *device-special directory-name*

or

mount /hsfs

if a line similar to

/dev/dsk/c0t6d0s0 – **/hsfs hsfs** – **no ro**

is in your **/etc/vfstab** file (and **/hsfs** exists).

Normally, if Rock Ridge extensions exist on the CD-ROM, the filesystem will automatically use those extensions. If you do not want to use the Rock Ridge extensions, use the ''nrr'' (No Rock Ridge) mount option. The mount command would then be:

mount –**F hsfs** –**o ro,nrr** *device-special directory-name*

Files on a High Sierra or ISO 9660 CD-ROM disk have names of the form *filename.ext;version*, where *filename* and the optional *ext* consist of a sequence of uppercase alphanumeric characters (including ''_''), while the *version* consists of a sequence of digits, representing the version number of the file. HSFS converts all the uppercase characters in a file name to lowercase, and truncates the '';'' and version information. If more than one version of a file is present on the CD-ROM, only the file with the highest version number is accessible.

Conversion of uppercase to lowercase characters may be disabled by using the –**o nomaplcase** option to **mount**(1M). (See **mount_hsfs**(1M)).

If the CD-ROM contains Rock Ridge extensions, the file names and directory names may contain any character supported under UFS. The names may also be upper and/or lower case and will be case sensitive. File name lengths can be as long as those of UFS.

Files accessed through HSFS have mode 555 (owner, group and world readable and executable), uid 0 and gid 3. If a directory on the CD-ROM has read permission, HSFS grants execute permission to the directory, allowing it to be searched.

With Rock Ridge extensions, files and directories can have any permissions that are supported on a UFS filesystem; however, despite any write permissions, the file system is read-only, with EROFS returned to any write operations.

High Sierra and ISO 9660 CD-ROMs only support regular files and directories, thus HSFS only supports these file types. A Rock Ridge CD-ROM can support regular files, directories and symbolic links, as well as device nodes, such as block, character and FIFO.

EXAMPLES

If there is a file

BIG.BAR

on a High Sierra or ISO 9660 format CD-ROM it will show up as

big.bar

when listed on a HSFS filesystem.

If there are three files

BAR.BAZ;1

BAR.BAZ;2

BAR.BAZ;3

on a High Sierra or ISO 9660 format CD-ROM, only the file **BAR.BAZ;3** will be accessible; it will be listed as

bar.baz

SEE ALSO

mount(1M), **mount_hsfs**(1M), **vfstab**(4)

N. V. Phillips and Sony Corporation, *System Description Compact Disc Digital Audio*, ("Red Book").

N. V. Phillips and Sony Corporation, *System Description of Compact Disc Read Only Memory*, ("Yellow Book").

IR "Volume and File Structure of CD-ROM for Information Interchange" , ISO 9660:1988(E).

DIAGNOSTICS

hsfs: Warning: the file system... does not conform to the ISO-9660 spec
The specific reason appears on the following line. You might be attempting to mount a CD-ROM containing a different filesystem, such as UFS.

hsfs: Warning: the file system... contains a file [with an] unsupported type
The **hsfs** file system does not support the format of some file or directory on the CD-ROM, for example a record structured file.

hsfs: hsnode table full, %d nodes allocated
There are not enough HSFS internal data structure elements to handle all the files currently open. This problem may be overcome by adding a line of the form

set hsfs:nhsnode=*number*

to the **/etc/system** system configuration file and rebooting. See **system**(4).

WARNINGS

Do not physically eject a CD-ROM while the device is still mounted as a HSFS filesystem.

Under MS-DOS (for which CD-ROMs are frequently targeted), files with no extension may be represented either as *filename.* or *filename* (that is, with or without a trailing period). These names are not equivalent under UNIX systems. For example, the names

BAR.

and

BAR

are not names for the same file under the UNIX system. This may cause confusion if you are consulting documentation for CD-ROMs originally intended for MS-DOS systems.

Use of the **–o notraildot** option to **mount**(1M) makes it optional to specify the trailing dot. (See **mount_hsfs**(1M)).

NOTES

No translation of any sort is done on the contents of High Sierra or ISO 9660 format CD-ROMs; only directory and file names are subject to interpretation by HSFS.