New Technical Notes

Macintosh ®

Developer Support

FL 35 - Determining Which File System Is Active

Files

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This Technical Note discusses how to determine which file system a particular volume is running.

Changes since June 1990: Removed text about IDs $0001-$0016 being AppleShare volumes; other file systems use this range too.

Under certain circumstances it is necessary to determine which file system is currently running on a particular volume. For example, on a 64K ROM machine, your application (i.e., especially disk recovery utilities or disk editors, etc.) may need to check for MFS versus HFS. Note that this is usually not necessary, because all ROMs, except the original 64K ROMs, include HFS. If your application only runs on 128K ROMs or newer, you do not need to check for HFS versus MFS. You may need to check if a particular volume is in High Sierra, ISO 9660, or audio CD format.

Before performing these file system checks, be sure to call `_SysEnvirons`, to make sure the machine on which you are running has ROMs which know about the calls you need.

To check for HFS on 64K ROM machines, check the low-memory global `FSFCBLen` (at location `$3F6`). This global is one word in length (two bytes) and is equal to -1 if MFS is active and a positive number (currently `$5E`) if HFS is active. From Pascal, the following would perform the check:

```
CONST
  FSFCBLen = $3F6;    {address of the low-memory global}

VAR
  HFS: ^INTEGER;

  ...
  HFS:= POINTER(FSFCBLen);
  IF HFS^ > 0 THEN
      {we're running HFS}
  ELSE
      {we're running MFS}
  END;
```

If an application determines that it is running under HFS, it should not assume that all mounted volumes are HFS. To check individual volumes for HFS, call `_PBHGetVInfo` and check the directory signature (the `ioVSigWord` field of an `HParamBlockRec`). A directory signature

of $D2D7 means the volume is an MFS volume, while a directory signature of $4244 means the volume is an HFS volume.

To find out if a volume uses a file system other than HFS or MFS, call `_PBHGetVInfo` and check the file system ID (the `ioVFSID` field of an `HParamBlockRec`). A file system ID of $0000 means the volume is either HFS or MFS. A file system ID of $4242 means the volume is a High Sierra volume, while a file system ID of $4147 is an ISO 9660 volume, and a file system ID of $4A48 is an audio CD volume. AppleShare and other file systems use a dynamic technique of obtaining the first unused file system ID; therefore, low-numbered IDs cannot be associated with any particular file system.

When dealing with High Sierra and ISO 9660 formats, do not assume that the volumes are CD-ROM discs. Support for these file systems is done with the External File System hook in the File Manager, so any block-based media could potentially be in these formats. It is possible to have a High Sierra formatted floppy disk, although it would be useless except for testing purposes.

Further Reference:

- *Inside Macintosh*, Volume IV, File Manager
- Technical Note FL 25 — ISO 9660 & High Sierra CD-ROM Formats
- Technical Note OV 16 — _Gestalt & _SysEnvirons - a Never Ending Story