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Technical Note FL20

File Sharing and Shared Folders

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This Note describes modifications to the existing File Manager routines, `PBGetCatInfo`, `PBHGetDirAccess`, `PBHSetDirAccess`, `PBHSetFLock` and `PBHRstFLock`, when used on volumes prepared by Macintosh System 7 File Sharing.

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Introduction

There are several differences between System 7 File Sharing and AppleShare 2.0.1. This Note describes what those differences mean when calling `PBGetCatInfo`, `PBHGetDirAccess`, `PBHSetDirAccess`, `PBHSetFLock` and `PBHRstFLock` on local volumes that return `bHasPersonalAccessPrivileges` to `PBHGetVolParms`.

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Share Points, Shared Areas, Locked Folders and PBGetCatInfo

The first notable difference between AppleShare 2.0.1 and File Sharing is that File Sharing allows both folders and volumes to be exported or shared over an AppleTalk network (only volumes could be shared with AppleShare 2.0.1). A folder or volume can be shared by selecting the "Share this item and its contents" check box in the Finder's Sharing dialog. A folder or volume shared in this way is called a "share point" and its Finder icon (if it's a folder) is shown in Figure 1. The share point and all folders under it in the directory structure have access privileges and those access privileges can be set by the local user.



Figure 1. Folder that is a Share Point

The server's owner is a user with "All Privileges" and can remotely access all sharable volumes and folders on the Macintosh no matter what access privileges are set. The owner of an AppleShare 2.0.1 server is the server administrator. The owner of a File Sharing server is the owner of the Macintosh system as set by the Sharing Setup control panel. All other users of a server are considered regular users. Figure 2 shows the Finder icon of a folder that is a share point mounted by some regular user.



Figure 2. Folder that is a Share Point Mounted by a Regular User

Folders under a share point are already in a shared area and cannot be share points. However, those folders have access privileges so the visual feedback given by the Finder is the icon shown in Figure 3.



Figure 3. Folder in a Shared Area of the Folder Hierarchy

To allow applications to see share points and folders in shared areas, new bit definitions have been added to the `ioFlAttrib` bitmap returned by the File Manager call `PBGetCatInfo` when the information returned is for a folder. Bit 4 of `ioFlAttrib` is always set for folders. If a folder is a share point, bit 5 of `ioFlAttrib` is set. If a folder that's a share point is mounted, bit 3 of `ioFlAttrib` is set. If a folder is in a shared area of the folder hierarchy, bit 2 of `ioFlAttrib` is set. If a folder is locked, bit 0 of `ioFlAttrib` is set. Folders can be locked or unlocked with the `PBHSetFLock` or `PBHRstFLock` calls. Figure 4 shows the `ioFlAttrib` bitmap for folders as returned by `PBGetCatInfo` under the System 7 File Manager.

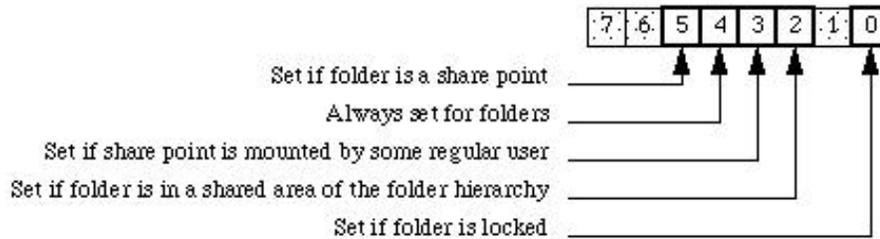


Figure 4. `ioFlAttrib` for a Folder

Note:

These bits are READ-ONLY for folders. Do not try to set these bits with the `PBSetCatInfo` call.

Note:

As noted in *Inside Macintosh, Volume VI*, `PBCatSearch` searches only on bits 0 and 4. The additional bits returned in `ioFlAttrib` by `PBGetCatInfo` cannot be used by `PBCatSearch`.

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Shared Folders and Blank Access Privileges

Another difference between AppleShare 2.0.1 and File Sharing is that File Sharing supports a new user access privilege called blank access privileges. A folder with blank access privileges set ignores the other access privilege bits and uses the access privilege bits of its parent. On the local Macintosh, folders in a shared area default to blank access privileges (until set otherwise) and new folders created in a shared area are given blank access privileges. Folders created over AppleShare are given the same access privileges as the parent folder (or volume) and are owned by the user that created them.

Blank access privileges are useful because folders' access privileges now behave in a way which users expect them to. When a folder with blank access privileges is moved around within a folder hierarchy, it always reflects the access privileges of its containing folder. However, once the blank access privileges bit has been cleared for a folder, its access privileges "stick" to that folder, and remain unchanged no matter where the folder is moved. Volumes that support blank access privileges have the `bHasBlankAccessPrivileges` bit set in `vMAttrib` longword of the volume parameter data returned by the `PBHGetVolParms` call. Folders with blank access privileges can be identified with the `PBHGetDirAccess` call. `PBHSetDirAccess` allows you to set blank access privileges. When bit 28 of `ioACAccess` is set, blank access privileges are set for a folder. The entire access privileges longword with the new bit for blank access privileges is shown in Figure 5.

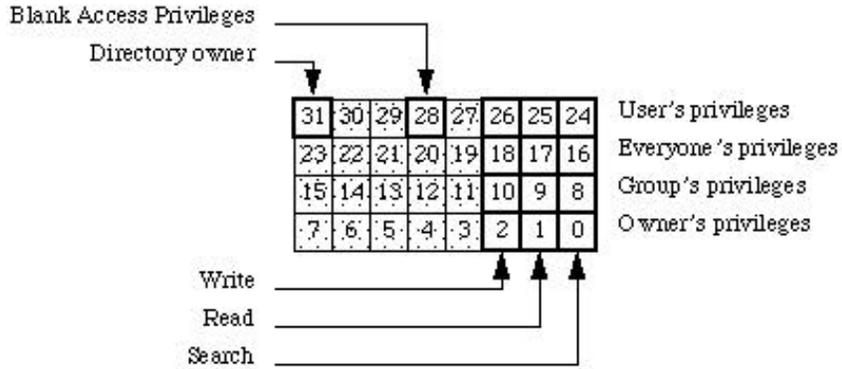


Figure 5-Access Privileges in `ioACAccess`

Note:

Only the blank access privileges bit (bit 28) in the high byte of `ioACAccess` may be set when calling `PBHSetDirAccess`. You cannot set the directory owner bit or the user's privileges of a folder.

The blank access privileges bit is not returned in the `ioACUser` field by the `PBGetCatInfo` routine.

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References

Inside Macintosh , Volume IV, The File Manager

Inside Macintosh , Volume V, File Manager Extensions In a Shared Environment

Inside Macintosh , Volume VI, The File Manager

Inside AppleTalk , AppleTalk Filing Protocol

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