

# SingleShare

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## **.c.Overview**

SingleShare is an AppleShare server which, unlike AppleShare, does not need a dedicated Macintosh to run, yet, unlike TOPS, adheres to Apple's protocol standards.

This documentation describes the first release version of SingleShare, version 0.9b11. Version 1.0 is planned for System 7.0 (unless Apple's announced FileShare product isn't better *and* cheaper...).

SingleShare exists because I got annoyed with AppleShare (for needing a dedicated Mac) and TOPS (for using a proprietary protocol, and for being intentionally slow). Moreover, I wanted to know how hard it could possibly be to write an AppleShare and MultiFinder compatible server, so I just did it. (This approach is not generally recommended.)

## **.c.This documentation ...**

... is somewhat technical. Don't panic; the more basic terms are explained below. If you do not understand something, read on; experiment with SingleShare (if it crashes, it's a bug, not your fault); read the offending section again later. Knowledgeable friends from your

local user club might help.

People who already know what I am talking about should probably skip to the next section.

You should already know what folders, applications and documents are; Finder, MultiFinder and System Folder should also mean something; and you should have some basic experience in using some Macintosh applications. If not, re-read the documentation which came with your Macintosh.

The term **volume** is somewhat difficult to explain. From a user's point of view, you cycle through your volumes with the Drive button in the standard file dialog, and the Finder displays them on the right-hand side of your desktop.

A (network) **server**, as a general term, is a computer or application which has something which other computers or applications (also called **clients**) want, and offers access to these services across a network. This documentation describes a server application called **SingleShare**, which offers other users access to your Mac's folders, applications and documents, and is therefore called a **file server**.

SingleShare runs in **background**, which basically means that it does whatever it has to do while you are doing something else on that Macintosh. What you are currently doing on your Macintosh (or, when printing, what your Mac does when you're fetching another cup of coffee) is called **foreground** activity.

SingleShare uses **AFP**, to converse between server and clients. AFP means "**AppleTalk filing protocol**" and was defined by Apple to do exactly this. The clients will use Apple's AppleShare client software, which is distributed with System 6.0.3 on the "System Tools 1" diskette (numbered '3'). For System 6.0.4, use the Installer on the System disk (numbered '1'). Apple's AppleShare client software is not described here – see your Macintosh manual, System Software 6.0 or later, for details.

The term '**you**', in this text, refers to the user of the Macintosh computer on which SingleShare runs. '**Your users**' are the other Macintoshes, or the people working with them, who access your server. You use SingleShare to **publish** folders on your hard disk (or the entire disk, as needed); publishing makes that folder available to your clients, who see each of these folders as a different volume which they can **mount**, or "start using" (very loosely speaking). If they are done using a volume, they **unmount** it, which on the Macintosh is done by dragging the volume's icon (not its window, and *not* the documents inside) to the trash can. If a client wants to stop using your server, (s)he simply has to unmount every volume which was mounted from your server. Clients can use more than one server at a time.

For security reasons, you will probably not want everyone to have access to all your volumes. SingleShare therefore allows you to create **users** and **groups** as a way to discriminate between different users (note the double meaning of the term "users" here. This unfortunately isn't my fault). Each user can belong to up to five groups; one of these is the user's **primary group**. In this version of SingleShare, the primary group is not special in any way, but this will change in version 1.0.

Access to volumes is further limited by **access rights**, which define what the user can do once he or she starts working with your server. AFP defines three different access rights: '**See Folders**', '**See files**', and '**Make Changes**' which can be turned on or off independently. Access with all three access rights turned on is indistinguishable from working with your local hard disk.

If 'Make Changes' is off, then the client has only read access to a volume; if 'See files' is off, then the client has no read access. In this case, if 'Make Changes' is on, the the client

can only create files and write to them, and if not, then the client can not do anything useful at all. If 'See folders' is not allowed, then the client will see a 'flat' volume, without any sub-folders that might be inside.

Finally, the free version of SingleShare is **Freeware** which means that you may use it without having to pay for it. See the section "Usage and Redistribution" near the end of this document for details.

## **.c.Capabilities**

As of version 0.9, SingleShare is not yet a full-featured AppleShare-compatible server.

There are a couple of things missing:

- No directory level access control. You can only set the access rights for the hard disk (or folder) you publish, and every folder inside will inherit these protections. This will change in version 1.0.
- Limited support for "short names", i.e. access from MS-DOS type machines. You can access everything which conforms to DOS naming conventions (one to eight characters, a dot, and at most three more characters). No attempt is made to translate long names to short ones, or (which is harder) vice versa.

- No support for ProDos or AppleShare 2.0. These will be added for version 1.0.
- A final version. This document describes Version 0.9.

There are, on the other hand, also some add-ons:

- You can publish folders as well as hard disks. You can publish a folder more than once, and with different permissions. You can change the 'external' name of the folders you publish.
- You can run the server under MultiFinder, without sacrificing a dedicated Macintosh.
- Users can start applications by double-clicking the appropriate document, even if the application cannot be opened directly because it is in an inaccessible folder.

There are also a couple of things that I did not want to reinvent, but which you might need:

- The Desktop Manager. See below on why you need it, and where to get it.
- Record-level file locking. Apple should put this into the File Manager. If it's present (like when you publish a folder or volume you mounted from Apple's AppleShare server), SingleShare automatically uses it. If not, it will not be an error to lock a range twice or to read/write an area someone else locked. (The latter is also not an error with TOPS, which is another story.)

- The AppleShare Server administrator's user interface. SingleShare uses a somewhat restricted (some might say cryptic) user interface. This is a possible advantage to you because it enables SingleShare to run using as little memory as possible. It is also an advantage for me because I did not have to put in two more months of work, which is another advantage for you because that way SingleShare is as inexpensive as possible. (No, I will not say 'cheap' here.)

## **.c.Prerequisites**

SingleShare needs at least System 6.0.3 (not 6.0.2; 6.0.3 contains some important bug fixes) and AppleShare version 48 or later, as described in Inside Macintosh V.

You need:

- Any Macintosh running System 6.0.3 or later.

- About 100 kBytes of free RAM. This unfortunately means that you will run into some memory problems on Macs with only one MB of memory.
- The Desktop Manager. This is a startup document from Apple which comes on AppleShare server installation disks. Persuade your dealer to give it to you. See below (“The Desktop Manager”) on why you need it and how to install it.
- FEdit or Suitcase, to increase the maximum number of open files (see below).
- If you have a Macintosh Plus (or possibly a Macintosh XL running MacWorks 3.0, although this is completely untested), AppleTalk version 48 or greater. This can be found on AppleShare Server installation disks, and should also be placed in the System folder.
- If you run the server on an AppleTalk internetwork, and there is more than one bridge connected to your local network branch, AppleTalk Version 53 or greater will increase performance. You can get it from TokenTalk or EtherTalk 2.0 installation disks.

SingleShare will run without the Desktop Manager and without increasing the maximum number of open files, but I do not particularly support it; you may experience problems.

I am sorry that I can not simply put the Desktop Manager and AppleTalk 53 into this archive, but Apple Germany won't let me do it.

## .c.Installation

Open the Chooser desk accessory. In the lower right, you can enter your Mac's name; this name will also be used as the initial name of the server. Once SingleShare is up and running, you can change this name; see below.

Open the Control Panel desk accessory. The “General” sub-panel should come up. If the RAM cache is off, turn it on. Select a size between 32 K and about 256 K. More than this may actually slow down your Mac because searching the larger cache for data takes longer.

If you have Suitcase II, open it and click first ‘Settings’, then ‘Power user settings’. The number shown should be at least 20, and more if you plan to admit many users to your server, mount many volumes, have many Suitcase files open, or use many applications at the same time. Alternately, if you have FEdit, select “Open Volume” from the File menu, open your System Disk, select “Edit boot blocks” from the File menu, and change the maximum number of open files to at least 15.

In the Stuffit archive you should find one application and two documents:

- “SingleShare Documentation”: this document.
- “SingleShare Server”: a startup document which also contains the actual code to run the server.
- “SingleShare” is the application for (running and) configuring the server.

Drag these into any folder on your hard disk. If you want to install the “SingleShare Server” startup document, drag it (not the application) into your System Folder.

Next, you should decide how to run SingleShare. There are three possibilities: As an application under MultiFinder, as an application under the Finder, or having your Macintosh install SingleShare on startup. The first method is the best way to run SingleShare if you are using MultiFinder, the last is best if you are using the Finder only.

### As an application (preferred)

Simply open the application “SingleShare”. Then configure your server; see below. **Do not** drag the “SingleShare Server” icon to your System folder; instead, put it into the folder where the SingleShare application is.

You can also use this method when not running MultiFinder; however, obviously you

can then only use desk accessories and not applications while your server is active.

SingleShare will need a MultiFinder partition of about 300 kByte.

**On startup** (not preferred, possibly risky, not possible with the free version)

Drag the “SingleShare Server” icon into your System folder, and restart your Mac.

Then run the SingleShare application to configure the server; see below.

You can use this method of installation when running MultiFinder also; be aware, however, that under System 6.0.3, there is a bug in MultiFinder which may make the server appear very slow to your clients if you are not using Server Mode (see below).

You will need at least 100 kByte of System heap memory for the SingleShare server to run in. The SingleShare application, for configuring the server, can be forced to run in a MultiFinder partition of about 120 kBytes if necessary. Use ‘Get Info’ from the Finder to change this value.

If SingleShare installs successfully, it displays its icon. If not, the icon is crossed out. To find out why, open the SingleShare application, you should get an appropriate error message. If you can run the SingleShare application successfully, you have found a bug.

**.c2.**

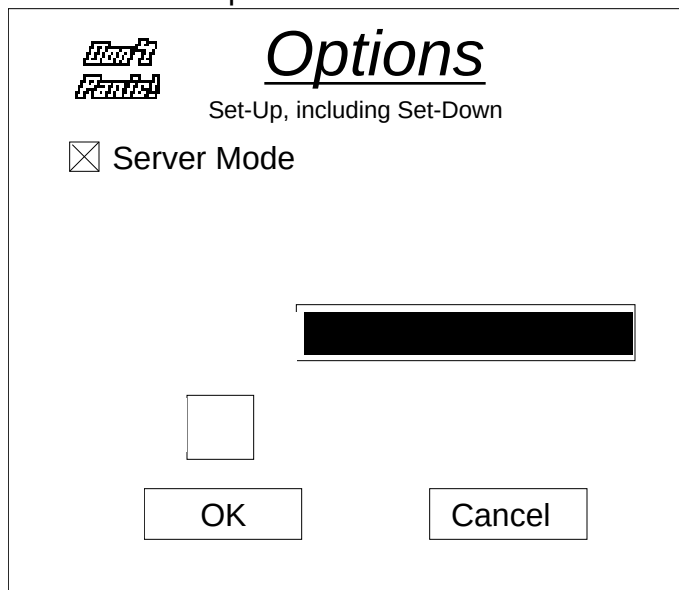
## Configuration

Your configuration will be saved automatically to a document named “SingleShare Settings” whenever you quit the SingleShare application. This document will be created in your System folder if it does not exist. If you do not install SingleShare on startup, you may move this document into the same folder as the SingleShare application. It will stay there.

Be aware that whether you are installing SingleShare on startup or not, you still have to open the SingleShare application to do any configuration. Configuration from the Control Panel is not planned at this stage; when running under MultiFinder, it is not necessary; it would make SingleShare about 20 kBytes bigger, and the added complexity would mean more bugs for me to iron out, and make SingleShare more expensive. SingleShare runs better as an application under MultiFinder anyway.

### **.c2.Basic options;**

Select “Options” from the File menu. You will get something like this dialog box:



“Server Mode” is SingleShare's ‘Increased Performance Switch’. It is generally on. You should turn it off on a Mac Plus, SE, or Portable, if you want to do any interactive graphic work on the server machine, or when you run applications which do not like SingleShare imposing upon them. **Warning:** Turning Server Mode off will severely reduce the response

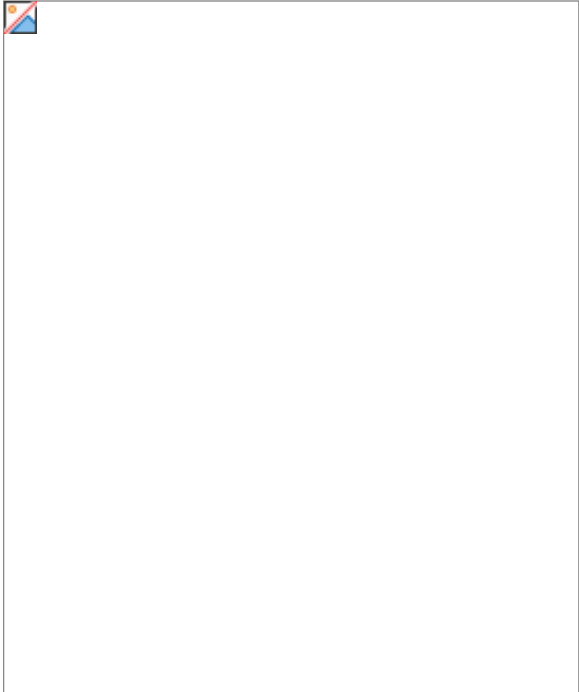
time experienced by your clients if you are working on the server.

The Server Name will default to the name you entered in the Chooser's window. Enter anything you like here. However, people should be able to associate that name either with your Macintosh or with your organization, work group, or whatever.

The maximum number of (concurrent) users is somewhat arbitray. You probably want to keep this as low as possible. It does not make sense to have more than about two or three active users on a Mac Plus or SE. This number is not related to the number of entries in your user database; the latter is not limited.

## .c2.Adding users

Select "New" from the Users menu, or press Command-U. You will get something like this dialog:



Enter the user's name, press Tab and enter a password, press Tab and enter the password again, and click OK or press Enter. The password will display as '•' characters. You probably should not leave the password field blank unless you know what you're doing. Cutting and pasting the password entry will not work; I require it to be typed twice in order to prevent typos.

If you want to select a group for that user, simply select one or more from the pop-up menu. The groups the user belongs to will be checked; the user's primary group is the one shown when the menu is not popped up. You use the menu to switch from one group to the next. The command key determines what happens to the **old** primary group: holding it down will cause that group to be deleted from the user's group list. The group you select from the pop-up menu will always be the new primary group. (Therefore, if you simply select three different groups from the menu, the user will be in all three of them) To quickly deselect a large group list, select "Any".

If you don't quite understand the previous paragraph, experiment. (The groups the user is in will have a check mark in their menu entry.) There is nothing you can do at this point which could seriously damage anything. Or at least I hope so.

The maximum length for the user name is 31 characters; eight are allowed for the password. If you do not enter a password, the password of the primary group is used when this user tries to log in.

"Multiple Logins" means that the user is able to log on more than once. There is no

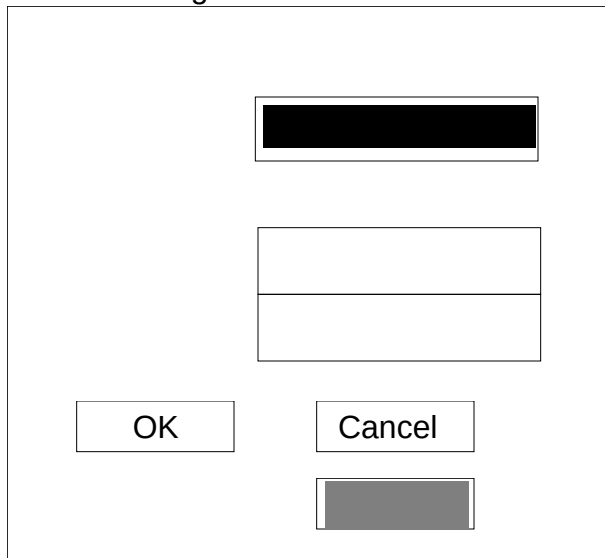
way to distinguish between those users.

If you want to change a user entry, just select it from the User menu. You then may delete it by clicking the Delete button, or simply by holding down the Option key while selecting from the menu. The ownership of folders associated with that user will revert to 'Any'.

The information you enter here will eventually get stored in the 'SingleShare Settings' file. The password information will be scrambled in this file so a casual snooper will be unable to get a quick list. Passwords are still recoverable, but since the old password is not checked for when entering a new one, this should never be necessary.

## .c2.Adding user groups; (optional)

Select "New" from the Groups menu, or press Command-G. You will get something like this dialog:

A dialog box with a white background and a thin black border. At the top is a single-line text input field. Below it is a password input field, represented by a solid black rectangle. Underneath the password field is another single-line text input field. At the bottom left is an 'OK' button. To its right is a 'Cancel' button. Below the 'Cancel' button is a small, empty rectangular box.

Enter the group's name, optionally press Tab and enter a password, and click OK or press Enter. The password will display as '•' characters so nobody who casually snoops around your Mac can see it easily. Cutting and pasting the password entry will not work; I require it to be typed twice in order to prevent typos.

The maximum length for the group name is 31 characters; eight are allowed for the password.

If you want to change a group entry, just select it from the Groups menu. You then may delete it by clicking the Delete button, or simply by holding down the Option key while selecting from the menu. The group membership of users or folders associated with that group will revert to 'Any' if the group you are deleting was the only group they were in.

The group password is used when a user without a password of his or her own tries to log in.

## .c2.

### Publishing folders;

Select "New" from the Folders menu, or press Command-F. You will get something like this dialog (which unfortunately is a little crowded):



If you click “Publish” (which is what the “Update” button is called if you publish a ‘new’ folder), the folder will be published which is currently selected. In the example shown here, that would be the folder called “Programme”, which you’ll publish under the name “Programs” (which is what the German word “Programme” means...).

Enter the name you want this folder or hard disk to be published as. This will default to the name of the folder or hard disk which is going to be published. If you change that name, and change the folder after that, the name will not be updated so you won’t have to type it again. If you want the default name back, select the whole name and press the backspace key.

If you expect to have MS-DOS clients, be aware that volume names with spaces, as well as names not conforming to DOS naming conventions, are dangerous to these machines’ health and might leave them unable to access the folder you are publishing.

You can assign the published folder to a specific user and/or group by selecting the user or group from the pop-up menus. However, combining ‘Everybody’ with any group other than ‘Any’ won’t work. Set the user to ‘Guest’ if you want to do that.

The nine check boxes say who may do what. If “Folders” is unchecked, other users effectively see a flat volume. (If “Make Changes” is turned on they may create folders but it won’t do them any good.) If “Files” (or “Documents”, but that would not fit into the dialog) is unchecked, the published folder is in effect “Write-Only” because the user can copy documents onto your server, but once they are there, he or she can’t see them.

“One or Many Writers” concerns multi-user access to the same document.

“One Writer” says that if anybody opened a document for reading and writing, no one else can access it. “Many Writers” allows this. “Many Writers” is dangerous because the standard Apple file system does not have record locking, which would prevent clobbering a document. You should probably turn this on only if you are re-publishing a folder from a ‘real’ AppleShare server.

If you want to change a folder entry in any way, just select it from the Folders menu. You then may delete it by clicking the Delete button, or simply by holding down the Option



key while selecting from the menu.

Users will not see a published folder if they don't have any access rights to it (i.e. all three check boxes for that user or group are unchecked). Thus it is possible to allow access to any user in a given group except one.

Your clients will not be able to distinguish if you publish an entire hard disk, or a (sub-)folder.

SingleShare will publish the folder whose name appears at the top of the dialog box. To deselect a folder (for instance, if you want to publish an entire hard disk), press the mouse button on it and then drag the mouse to the right.

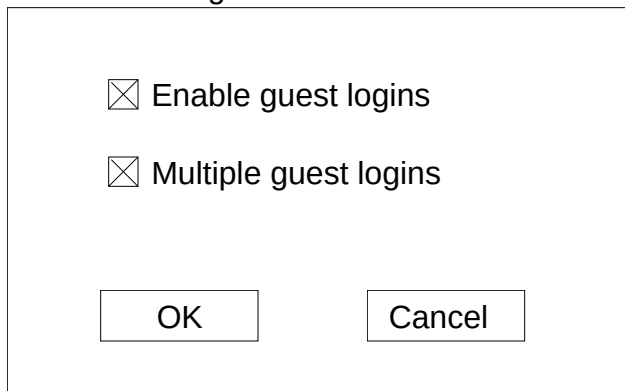
If you unmount a hard disk, the published folders on it will of course no longer be accessible. The menu items for these folders will be grayed out. You can still select them, however, and either switch to a different folder or unpublish them. If you quit SingleShare, those folders won't be saved. Re-inserting the disk will not bring the folder back, because SingleShare does not know if it is really the same volume — it could be a different disk with the same name.

The same thing happens if you eject a volume without unmounting it. Unfortunately I can not let the File manager post a request that you put it back in. (The request would appear on the client's screen which is not the intended result.)

Moving a published folder into another folder is possible. (Use the Finder to do that.) However, if any clients are accessing this folder at that moment, there may be temporary problems until SingleShare becomes aware of the folder's changed location.

## **.c2.Guest access**

Selecting "Guest" from the Users menu will display this dialog box:



☒ Enable guest logins

☒ Multiple guest logins

OK Cancel

This means exactly what it says...

If "Enable guest logins" is checked, users will be able to click the Guest button in the AppleShare log-in dialog, even if you do not let them access any folders. This should be corrected in the next version of SingleShare.

You can alert and log off guests just if they were ordinary users, i.e. hold down Option or Option-Command, respectively.

## **.c.Server state**

You can see which users are currently using your Macintosh in the "Users" menu.

Active users will be *italicized*. If there is more than one user using the same name, the number of concurrent users will appear in front of the name.

The same applies to published folders.

If any items in the Folders menu are grayed out, the disk this folder resides on is or was unavailable. You can still select that folder; in fact you have to do so in order to re-enable access to that folder because SingleShare is unable to find out if the exact same disk

was reinserted.

Right now there's no way to see which user is using which folder. If there is demand for it I could probably add it. However, it is not possible to disconnect a specific folder from one or all users anyway because the protocol does not allow this. (Well, I could still do it but it would be even worse than “The server has been unexpectedly disconnected”; users would not get any information on what is going on except that their applications behave as if they had major bugs.)

## **.c.Performance**

SingleShare is designed to be as fast as possible.

There is of course the question of how to define “as fast as possible”. If SingleShare would totally take over your Macintosh, it would probably be still faster but you couldn't do any work.

There are some performance penalties due to the fact that SingleShare does not own the Mac it is running on, unlike AppleShare. How these affect your use of your Macintosh, and the performance your users get from the server, depends on the “Server Mode” check box in the Options dialog.

When Server Mode is turned on, SingleShare will try to fulfill incoming requests as fast as possible while trying to preserve some interactive usage, especially the ability to move the mouse smoothly. The latter is unfortunately not possible on the Macintosh Plus.

When Server Mode is off, all incoming requests will be deferred until the next time SingleShare gets regular background time.

All things considered, you will probably want to turn on Server Mode unless there is a good reason not to. Unfortunately, there is.

The problem is mouse movement. On the Macintosh Plus, Server Mode will cause the mouse pointer to freeze as users are actively using your server. On the other Macintosh models, the opposite will happen: the pointer will seem to jump all over your screen. You can restrict this jumping-about by selecting Tablet in the Mouse section of the Control Panel.

Regardless of whether Server Mode is active or not, any data going into or out of your Macintosh via LocalTalk will still cause these effects, although somewhat less severely.

With Server Mode active, actual file access times are comparable to other AFP servers. Preliminary tests have shown SingleShare to be about as fast as AppleShare, and faster than TOPS. Directory access might be a bit slower than Apple's server because SingleShare is not a dedicated server, and thus cannot remember the contents of your folders and has to look at the disk for them. This also is the major reason why turning on the disk cache will increase performance.

With Server Mode turned off, response time depends largely on what you are doing on your Macintosh. While holding down the mouse button, and in most applications during printing, no background processing is active: all user access is delayed. Be aware that a delay of more than two minutes may terminate the delayed users' access to your server.

Formatting floppy disks as well as hard disks is to be avoided; your clients will be delayed while the formatting operation is in progress. Working with floppy disks, or even publishing them, is possible. However, any read from or write to a floppy disk disrupts the reception of LocalTalk data. This will cause severe delays for your clients and may even cause them to lose access to your server.

The same happens if your server Macintosh does not get “background time” for a long time. This can be caused, among others, by copying files from diskettes or another server, lengthy calculations, printing in foreground, pressing the mouse button for a long time,

scanning documents, or using remote-access programs like Timbuktu which lock out your Macintosh. “Long time” here means anything longer than one minute. You should turn on Server Mode to minimize any adverse effects this may have.

Server Mode may slow down your Macintosh a bit. A Macintosh Plus will be slowed down somewhat more than a Mac II. (Some internal server parameters are adjusted to compensate for this.) The actual slowdown might not be noticeable, but depends so much on other factors that I am unable to give consistent figures.

## **.c.Shutting down**

If the SingleShare application is active, select “Tell users to log off” from the State menu. Every user will get a dialog box warning him or her that your server is going to be shut down in about five minutes. If you select this option a second time, the notification changes to one minute.

This menu choice also prevents new users from logging on. If you change your mind, simply select “Admit new users” from the State menu.

You can forcibly disconnect any user by holding down the Option and Command keys, and selecting that user in the Users menu. You should warn that user before doing this, by holding down just the Option key, or (s)he may lose work.

Now select “Quit” from the File menu. If any users are still using the server, you will get this dialog box:



If you installed SingleShare on startup, ‘Quit’ will in fact not turn off the server, but only quit the SingleShare application. Select “Shutdown Server” from the file menu (or “Restart” or “Shut down” from the Finder’s Special menu) to turn off the server.

If you want the server to close down, click the “Yes” button. At that point, your Macintosh will not do anything for at most two minutes while your users are notified and given a chance to log out. An additional warning will be sent to all active users at the end of the first minute. You can shorten these minutes by clicking the mouse button.

Turning off Appletalk or changing connections (“Networks” in the Control Panel desk accessory, if you have it) is disallowed when the server is started. You must restart your Macintosh without “SingleShare Server” in your System Folder to do this. This problem will be repaired in the next version of SingleShare.

## **.c.The Desktop Manager**

The Finder historically stores all its icons, comments, and similar information in a file

called “Desktop” which is placed on the root level of every floppy and hard disk, and is made invisible. This has caused a couple of major problems because:

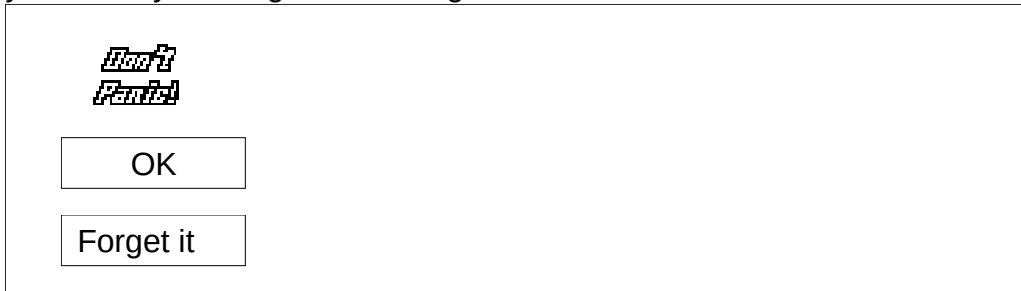
- The “Desktop” file is a resource file. Only one application can open it. Under MultiFinder, that application is the Finder, and no one else has access to the comments and icons stored in it.
- The “Desktop” file is a resource file. With slightly more than 2200 resources, any resource file will blow up and take your Macintosh with it (system-bomb-wise, not literally). This corresponds to about 600 simple applications, or 200 bigger ones with many file types. It is still 600 applications if you copy 60 different applications onto the hard disk ten times, and delete them, as when reorganizing that PD disk library you're so proud of...
- Even before the Desktop file gets full, it gets slow. Very slow. Also, the Finder needs more and more memory when reorganizing it.

All these problems can be avoided by installing the Desktop Manager, which is a startup document that installs its own way of dealing with the Finder information which everyone can use at the same time.

You can get the Desktop manager from a knowledgeable dealer near you. Just mention that you get serious system crashes whenever you copy any new application onto your big hard disk, and that the Desktop Manager is the solution to this problem, and that the hard disk is unuseable otherwise. (All this is perfectly true; I got bitten by this when reorganizing our user group's public domain disk library.) The Desktop Manager can be found on any AppleShare server installation disk and should not cost anything. It will be included in System 7.0 anyway.

## **.c2.Installing the Desktop Manager**

- Try to get version 2, which is about 16 kByte big. Version 1, about 24 kByte, is also fine.
- Install System 6.0.4 if you don't have it yet. Older Finder versions had some minor difficulties with the Desktop manager. SingleShare will not run under anything older than 6.0.3, so if you have to update, get the latest version.
- Drag the DeskTop Manager into your System Folder, and restart your Macintosh.
- Hold down Option and Command before the Finder appears. For every hard disk you have, you will get this dialog box:



(Yes I know, yours probably looks a bit different. I'll get an unmodified US Finder from somewhere. It seems impossible to get US System disks from Apple Germany...)

Click “OK”.

- Enjoy the speed with which the “updating Desktop file” part zips by whenever you copy an application onto your hard disk.

## **.c.Usage and Redistribution**

SingleShare has evolved from the “Lets see how difficult this would be” idea into something which took quite some time to write, debug and test. I originally wanted to give the

SingleShare server away for free, but by now this has become pretty unrealistic.

Therefore, I have decided to distribute SingleShare as *Shareware*. This means that you have to pay for SingleShare only after you tested it and decided that it works for you. Please pay for SingleShare if you want to continue using it. Apart from the moral obligation you might or might not feel, there may be important bug fixes (there's always one more bug, you know) which you'll miss otherwise.

SingleShare costs **\$65**. You will get the right to use SingleShare in one AppleTalk zone, on as many Macs as you want, with up to nine concurrent clients each. Additional licenses for the same AppleTalk internetwork will cost **\$25**. You will also get a free upgrade to the next version; updates after that cost \$10.

You may redistribute SingleShare freely. If you charge money for doing so, beyond the cost of one blank disk, you'll have to ask me for permission first.

Payment may be with check or money order. It will cost me a few dollars to convert these to German marks. Unfortunately, I am unable to accept credit cards...

## **.c2.Bug Reports, Ideas, and Orders**

My address is:

**Matthias Urlichs  
Rainwiesenweg 9  
8501 Schwaig 2  
West Germany**

You can also use my electronic address, which will be much faster:

**urlichs@smurf.sub.org**

(Internet)**urlichs@smurf.sub.org@DASNET#**  
(AppleLink)

You can also use this Internet address from CompuServe, MCI Mail, and a few others. Ask someone knowledgeable on these systems for directions. In urgent cases (only!), it is also possible to send updates that way.

Unfortunately, you can't send money to me that way...

## **.c.Known Problems, Incompatibilities, Gross Hacks**

When installing on startup, there are currently some compatibility problems with Suitcase, Microsoft Mail, and TOPS. These problems are being investigated. (You might experiment with loading different startup documents first. Loading order is determined alphabetically.)

When opened, the SingleShare application looks for the "SingleShare Server" startup document. It must be located in the current System Folder or in the same folder as the application. You can safely rename this document if you install SingleShare on startup, and restart your Macintosh.

If you have installed GateKeeper, you may run into some problems. More specifically, GateKeeper warns you about possible violations by SingleShare and other applications. If this happens, either publish all folders read-only, or run SingleShare from the application, disable Server Mode, and give SingleShare File(Other) privilegess from GateKeeper's control panel.

Newer versions of Boomerang and possibly other Standard File Enhancers disregard the folder which I preset for the 'Update Folder' dialog. This may lead to some confusion when updating folder information. For best results, disable these enhancers under SingleShare.

On the Mac Plus, the SingleShare Server will sometimes cause a crash shortly after loading. I could not yet find the cause for this bug, which might not be caused by SingleShare but by the fact that the MacPlus I was testing on had only 1 MB of RAM. Restarting the machine will sometimes cure the problem. For serious work, you'll need more than one MB of RAM anyway. (Yes I know that this is not a solution.)

Sometimes, a System Error 14 occurs on client machines. This is totally unrelated to SingleShare although you might not believe it. On my test client, this error once occurred directly after turning on the Mac, and opening the Chooser. Reinstalling the System Folder, preferably with System 6.0.4 or later, should solve this problem.

On the Mac Plus, SingleShare will sometimes totally freeze the machine. I am currently looking into this problem. (Unfortunately, MacsBug also stops working in this case. Not nice.)

In general, SingleShare, while hopefully working correctly in itself, lets some more subtle bugs show up which otherwise would be invisible. This includes startup documents. If you experience serious problems, it might be a good idea to reinstall your System Folder from scratch, and put back all your Startup, Chooser, and Control Panel documents step by step. If the problem shows up only when you use a certain startup document, or are working with one special application, please let me know.

There is a bug in the MPW Shell which seriously affects SingleShare. SingleShare does work around this bug, but there might still be problems lurking somewhere inside.

Severe delays may be encountered by your clients while you use Apple File Exchange (AFE) on the server and are translating. These delays should not be fatal to the client except when translating very large documents. If anyone is using your server, and a translation takes longer than about one minute, you should probably cancel it.

A compatibility test with LightSpeedC 2.01 has shown that LSC closes its files when exiting. This, unfortunately, includes files opened by SingleShare behind LSC's back. This problem may also be present in later versions of Think C and Pascal products. Workaround: Only close these applications when no client is using your server. This problem may also effect other development environments.

Sound may get distorted when SingleShare is running, especially in server mode. Do not set the volume of any external speakers too high.

**Do not cross-mount.** (Server A mounts a volume from server B, while Server B mounts a volume from Server A.) This will hang both Macs sooner or later. If you are lucky they will recover after two minutes, but don't hold your breath. Unfortunately, there is no way to detect this case beforehand. The problem is not limited to SingleShare. If you experience such a situation, try pressing the Interrupt button on one of the Macs involved, and wait until the other Mac says something like "The connection has unexpectedly terminated", then press G and Return to continue. If you have a modem, disconnect it from your Macintosh first.

When publishing diskettes, applications and documents might not show their appropriate icons. This is because the Finder on the server still uses the old way to store icons on them, regardless of whether the Desktop Manager is present. SingleShare, however, only knows about the Desktop Manager. The same problem appears when the Desktop Manager is not active on the server, or when publishing CD-ROMs on which there are no DT Manager files (two invisible files named 'Desktop DB' and 'Desktop DF'. You can see them with Disktop or Deskzap, among others).

Multi-User access to documents is unsafe. The problem is called "Record locking" and the appropriate calls are present in the Mac's file manager but do not do anything. Complain

to Apple about this. Chances are good that this will be resolved in System 7.0.

## **.c2.SCSI Problems**

Some hard disk drivers, including Apple's, do not test if the SCSI bus is free before trying to read or write from the hard disk they manage. This may cause SingleShare, in Server Mode, to hang your Macintosh if used together with either a SCSI scanner, an empty "removable hard disk" such as the 45 MByte drives from MassMicro or Jasmine, or Apple's 'Tape Disk' and CD-ROM drivers. If you experience this problem, restart your Macintosh, use Disk First Aid to verify that your hard disks are still OK, and turn off Server Mode. SingleShare tries very hard to avoid this problem, but it might not always succeed. This problem may fix itself when System 7.0 is released.

## **.c.Disclaimer**

Guaranteeing that any non-trivial application is bug free is virtually impossible. Therefore, I am unable to warrant anything about SingleShare, including but not limited to ... *(copy the next two pages off any licensing agreement you get when buying "real" Macintosh software).*

I guarantee, however, that SingleShare does, to my best ability and knowledge, work as described in this documentation, and that I will make every reasonable effort to correct bugs which are reported to me and which can be attributed to SingleShare.

## **.c.Hacker's Special**

If you just have to hack, hold down the Option key while selecting 'Options' from the File menu. Change the flags you see at your own risk, and only if you exactly know what you are doing. Changes will be saved. (Hint: **Don't do it.**)

You also might be interested in what trap patches and other illegal operations SingleShare uses to accomplish its task. Well...

I do look at MultiFinder's globals to prevent MultiFinder from closing files opened by SingleShare from within another application when this application exits. This might be considered illegal; fortunately, MultiFinder stores a version number within its global data which I am testing for. This is the worst hack in SingleShare, but there is no simple workaround.

I also look at the MPW Shell global to determine if the Shell is running, and temporarily patch out MPW's external file system hook. This is necessary because of a severe problem with the MPW Shell; see below.

SingleShare patches the `_Shutdown` trap to display its message, and exits the trap if users are online and you click the No button. I can't just install a shutdown handler because I then had no way to offer a "No" button at this point. (TOPS does it nevertheless, and causes a system crash by calling `_ExitToShell` when you click it.)

Other than that, I believe that my code is reasonably legal and Inside-Mac-compatible. Of course I am using the Deferred Task Manager if it's there, and the Notification and Time managers as well as completion routines, to run. All these asynchronous routines of course impose on other running applications, but there is no clean other way. And yes, I do test if there is enough stack space before doing anything, and not afterwards.

Finally, here is a perfectly legal piece of code, except that if run as a tool under the MPW Shell, the Shell will crash (see the bold line). Complain to Apple about this...

```

PROGRAM Killer(output);
USES
  Types,Files,PaslibIntf;

PROCEDURE xClear (Pos: UNIV LongInt; Len: Integer);
EXTERNAL; (* simple assembler procedure to clear a parameter block *)
VAR
  pb: CInfoPBRec;
  Err: OSErr;
  S: Str31;
BEGIN
  xClear(@PB,sizeof(pb));
  WITH pb DO BEGIN
    ioNamePtr := @S;
    ioDirID := 2;    (* root folder *)
    ioVRefnum := 0;  (* default *)
    ioFDirIndex := -1; (* disregard the contents of S *)
  END;
  Err := PBGetCatInfo(@PB,TRUE);
  WHILE PB.ioResult > 0 DO
    WriteLn('Waiting');PLFlush(output);
  IF PB.ioResult < 0 THEN
    WriteLn('Err ',pb.ioresult:0)
  ELSE
    WriteLn('Name ', s);
  END.

```