

proffix

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User's Manual for version 2.1

revision 2.1.1

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Introduction

What You Can and Cannot Do With Profix

The Profix System allows DOS 3.3 to work with ProDOS compatible mass storage devices such as the ProFile and the UniDisk 3.5. Profix 2.1.1 is a versatile program which supports 140, 280, 392 and 400K volumes, up to seven ProDOS hard disks with two drives each, and logical/physical mapping of volumes for ease of use. It also speeds up disk access time.

Since Profix is an extension of DOS 3.3, it does nothing for Pascal or CP/M. If a disk cannot be copied or accessed by DOS 3.3, Profix will not work with it. Some program disks must be booted for the program to work; these disks will not work with Profix. And, finally, Profix will not work with programs that overwrite the first bank of the 16K Ramcard. In short, if a program will not run under normal DOS 3.3, it cannot be used with Profix.

A simple test to determine if your program will work with Profix is to CATALOG the disk containing the program. If you can catalog a disk, you can usually copy the program to a hard disk. But, if your program does not allow you to use different volumes, you will be limited to the size of the volume on which the program resides.

Profix lets you store your DOS 3.3 files and operate your DOS 3.3 programs on an otherwise incompatible hard disk. There is no need to convert your programs to ProDOS, so you save time and increase storage capacity. Even though Profix uses your ProDOS device for DOS 3.3 storage, it will not interfere with any ProDOS or Pascal areas you might be using. This means that you can use your ProDOS device for ProDOS, Pascal, and DOS 3.3 storage at the same time.

TUTORIAL:

Getting Started

To use Profix with your ProDOS device, you must first configure your device to make it compatible with the Profix driver program. To do this, and more, a simple system of menus and programs has been created.

Insert your Profix disk into your floppy disk drive and turn on the computer, or re-boot if it is already on. Booting refers to the process initiated by turning a computer on or by typing PR#6 if it is already on. You can also press the [Control][Open Apple][Reset] to boot the disk. When the disk drive stops, the following options appear on the screen:

```
[C]ONFIGURATION
[S]UMMARY
[U]TILITIES
[B]ACKUP / RESTORE
[1]40K COPY
[Q]UIT
```

This is the **MAIN MENU**. From here, you can control, inspect, and alter the configuration of your ProDOS device. The function of each menu item is discussed in detail later in the manual, but a short description follows for those of you who do not plan to read the entire manual.

[C]onfiguration: The configuration program must be run before you try to do anything with Profix. It lets you install volumes on any ProDOS devices connected to your computer.

[S]ummary: The summary program gives a detailed summary of the Profix volumes on each ProDOS device connected to your computer.

[U]tilities: The utilities program performs volume maintenance. With it you can remove, re-initialize, or alter the write protection status of any volume you have configured.

[B]ackup/Restore: This is a backup/restore utility for volumes larger than 140K.

[1]40K Copy: This is a 140K volume copier similar to COPYA on a DOS 3.3 System Master.

[Q]uit: Choosing 'Q' for Quit , after you've configured your hard disk, will load the Profix driver into memory, and exit the Profix system. Then, you are free to use your ProDOS device with DOS 3.3.

About Slots, Drives and Volumes.

When you choose an option from the main menu, one of the first things you are asked is the slot and drive number of the device you want to work with. When you boot the Profix disk, Profix searches through your computer and assigns a letter to each ProDOS device it finds. It prints these letters and the slot/drive combinations associated with them near the top of the screen. To specify a slot and drive, all you need to do is press the appropriate letter.

Example: If you have ProDOS devices in slots 2 and 4, Profix displays

A:S2,D1 B:S4,D1

near the top of the screen.

The letters assigned by Profix can only be used within the Profix programs themselves. When you Quit Profix and use DOS 3.3, you have to specify slot and drive as usual.

What is a Volume?

A volume on a hard disk is similar to a floppy disk. Since DOS 3.3 will not allow more than 400K of storage space on a diskette, a hard drive is relatively useless unless it can be split up into smaller sections. These sections are called volumes. With Profix, your ProDOS device is split up into volumes to make it compatible with DOS 3.3.

Before you configure your ProDOS device, it is wise to calculate your storage needs. Profix volumes come in four sizes: 140, 280, 392 and 400K. The 140K volumes are ideal for storing programs and are easy to backup. The 280 and 400K volumes are useful for storing many large files that will not fit on a smaller 140K volume, and the 392K volumes are useful if you want to maximize storage on a UniDisk 3.5. Since you can add or delete volumes from your ProDOS device at any time, it is not necessary to put the maximum amount of volumes onto your ProDOS device all at once. Still, you should evaluate your current needs and install an appropriate number of volumes. Then, if you want to use ProDOS or Pascal with your device, there will still be enough room remaining to do so.

Volume Accessing

Profix divides your ProDOS device into volumes. Each volume is similar to a diskette. Volumes are accessed through DOS 3.3 with the V parameter. Just as you type 'CATALOG,S6,D2' to catalog a diskette in the second drive in slot 6, you type 'CATALOG,S5,D1,V5' to catalog the fifth volume on your hard disk in slot 5 and drive 1. The V parameter can be added to most DOS commands.

EXAMPLE: To run the binary file named ABCDEF on your hard disk in slot 5 where the file is on volume 15, type 'BRUN ABCDEF,S5,V15'.

Profix is capable of accessing up to 102 volumes on a single device (this requires a 15 megabyte drive), or linked devices (any combination of drives of any size.). And, unlike DOS 3.3, the volumes can be up to 400K in size. This is a 180% increase in storage capacity over 140K volumes, the size of a normal Apple floppy disk.

Warning: When using Profix, DOS 3.3 will return an I/O ERROR if you try to access a hard drive as drive two (e.g., CATALOG,Sn,Vn,D2) unless you actually have a second drive in the slot you access. If this happens, you will have to CATALOG,D1, or access drive one in some other way before you will be able to continue.

Physical and Logical Volumes

Profix uses a unique way of accessing volumes on the ProDOS device, called **logical** mapping. Because of logical mapping, Profix can access more disk space through one slot than is normally possible. The volume you ask to access is called the logical volume. Profix looks at the slot and drive you specify, and accesses the slot and drive where that volume actually resides. The actual volume is called the **physical** volume.

With logical mapping, you can trick your computer into thinking that you have several drives (and more storage space) in one slot. For example, a 5meg Profile is only capable of holding thirty-four 140k volumes. But, using logical mapping, if you had, for example, two 5meg devices, you could access them together as if they were in the same slot and were one big device with 68 volumes. You can access up to 102 volumes spread over several slots as one device by using logical mapping.

Note: When using the UniDisk 3.5, logical mapping is not recommended.

When you are asked for a logical slot, respond with the letter representing the slot and drive where you want the volume mapped to. When you are asked for a physical slot, respond with the letter representing the slot and drive where you want the storage space for the volume allocated.

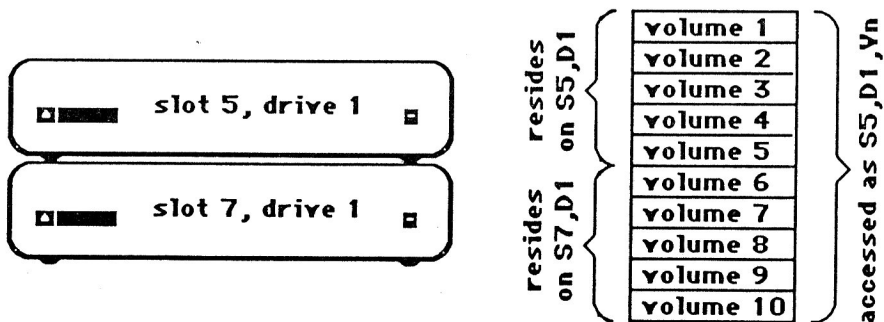
Physical slot: The slot that the hard drive is in.
(Your volume resides on this drive)

Logical slot: The slot that you specify to access the hard drive.
(DOS 3.3 thinks your volume is on this drive)

Example: You have hard disks in slots 5 and 7 that can only hold five volumes each. You want to have 10 140k volumes mapped into slot 5. With Profix, you install 5 volumes with slot 5 as logical and physical slot, then install 5 more with slot 5 as the logical slot, and slot 7 as the physical slot. Because all of these volumes have S5 as their logical slot, all are accessed through slot 5 by adding ,S5 to your DOS commands.

Physical/Logical Diagram

If you configure ten volumes with logical slot 5, drive 1, and have five with physical slot 5, drive 1, and five with physical slot 7, drive 1, the following will be true:



The Configuration Program

The Configuration program configures your ProDOS device for use with Profix. To Configure your ProDOS device, boot with the Profix system disk and select 'C' from the menu. The configuration program scans your computer looking for ProDOS devices. It lists the slot/drive combinations near the top of the screen. For example, if you have UniDisk 3.5's in slots 5 and 2, it will display: A:S2,D1 B:S5,D1.

The first thing the program asks you is if you want to add a volume. If you type 'N', you will be returned to the main menu. If you type 'Y', you will be asked to specify a logical slot. Enter the number of the logical slot you want to use. You must type the letter corresponding to one of the drives listed on the screen. When you have done this, Profix will configure that device so that it can accept volumes.

The next prompt asks you to specify a size for the volume. Choose 'A' for 140K, 'B' for 280K, 'C' for 392K, or 'D' for 400K. Then, specify a Physical volume. Remember, when you specify a physical volume, you are telling Profix where to physically locate the volume. If there is not enough room on the physical drive to install the volume you requested, Profix will alert you and let you try again. Otherwise, Profix will ask you if you want to go ahead and configure this volume. If you type 'N' for 'no', the program will start over.

To configure the volume, type 'Y'. Profix will display information about the volume and install it. When Profix completes the configuration, it will ask you to press the [Return] key. Pressing the [Return] key restarts the configuration program so that you can continue adding volumes.

Note: When installing a volume, the Configuration program expects a contiguous block of storage space of the size you chose. It is possible that Profix will not install a volume even if ProDOS reports that there is enough space left on the drive. If this happens, you will have to compact the ProDOS files on your drive by copying them off, reformatting the drive, and then copying them back on. If you already have DOS 3.3 volumes configured, remember to back them up as well.

If an error occurs, Profix will display an error number on the screen. Error numbers and their meanings are listed in the back of this manual. If you get an error, check the following:

- Is the ProDOS device on?
- If using a UniDisk 3.5, is the disk inserted and write-enabled?
- Does the ready light on the ProDOS device (if it has one) show that it is ready?
- Is the ProDOS device connected to your computer?
- Are the cables connected properly?
- If using logical mapping, are both drives on?

If none of this explains the error, there is a possibility that a hardware error has occurred. Consult your hard disk manual or your dealer.

If you already have ProDOS or Pascal files on your ProDOS device but plan to use the entire drive with Profix, run the ProDOS Filer program to reformat your hard drive before you try to configure it for use with Profix. This erases the ProDOS and Pascal areas. If you have ProDOS or Pascal files on your ProDOS device, and you want to keep them, don't reformat.

Configuration For a Single ProDOS Device.

If you only have one ProDOS device, the logical and physical slots will always be the same. There will only be one slot/drive combination displayed at the top of the screen. When you are asked to specify a logical or physical slot, specify that slot.

Configuration For Multiple ProDOS Devices.

If you have more than one ProDOS device, or have a ProDOS device with more than one drive (such as the TeamMate drive, or two UniDisk 3.5 drives in the same slot), then you have more options to choose from when you do your configuration. Prefix allows you to specify which drive(s) will be logical, and which will be physical. When you are asked to specify the logical slot, you should type the letter associated with the drive you want DOS 3.3 to think it is accessing. The physical drive is the drive that will actually be accessed. If you do not want to worry about logical and physical volumes, you can use the same slot/drive for both logical and physical.

The advantage in using the logical and physical specifications is you can link two or more hard drives together as one larger logical drive and have DOS treat them as if they are one drive. To do this, select the logical drive. Install as many volumes on this drive as you need. If you run out of space, change your physical drive specification to another drive, leaving the logical specification the same. The new volume will be written to the physical drive but accessed as the logical drive.

The Summary Program

Now that you have configured your ProDOS device, you can run the Summary program ('S' on the menu) to see what you have done. The summary program supplies you with a printed listing of the volumes on each ProDOS device connected to your computer. A sample listing is shown on the next page.

PROFIX SUMMARY

DEVICE A: S4, D1 ← slot and drive corresponding to this listing.

3 ACTIVE VOLUMES. ← the number of volumes configured on this device.

VOLUME 1 140K, 35 TRACKS, 16 SECTORS. ← size of volume
MAPPED TO S4, D1. WRITE ENABLED. ← physical drive

VOLUME 2 400K, 50 TRACKS, 32 SECTORS.
MAPPED TO S4, D1. WRITE ENABLED.

VOLUME 3 140K, 35 TRACKS, 16 SECTORS. ← protection status
MAPPED TO S5, D1. WRITE PROTECTED.

SPACE LEFT ON DISK: 16502 BLOCKS

This program can come in handy if you decide to re-configure your assortment of ProDOS devices, and you forget what volumes are on what drives. The summary program tells you where each volume actually resides, and also gives information concerning the status of each volume.

Profix Utilities

The Profix Utilities program allows you to do three things: re-format a volume, remove a volume, or change the write protection status of a volume. This program will ask you for a logical drive specification. When you've entered this number, the program will tell you how many volumes are on the drive. Enter the volume number of the volume you want to work with. After you've specified a legal volume number, the program will display this prompt:

A:FORMAT, B:REMOVE, C:WRITE PROTECT/(ENABLE) ?

Formatting a volume is analogous to initializing a floppy diskette, except DOS is not written onto the volume. NOTE: We recommend that you run the Profix Utilities program if you want to format a volume on a ProDOS device. You can use DOS's INIT command, but it is possible to get an I/O ERROR doing so.

Removing a volume will un-configure a volume and return the space occupied by that volume back to ProDOS.

Example: If you remove the fourth of ten volumes on a logical drive, the space occupied by the fourth volume will be deallocated. All data on that volume will be lost. This will increase the free space for ProDOS or Pascal. After removing it, you will no longer be able to access the fourth volume with Profix — you will get a VOLUME MISMATCH ERROR if you try. The other nine volumes (1-3 and 5-10) will not be affected.

If, after removing volumes, you configure more volumes on the same logical drive, the program will re-use the numbers of the volumes you removed. The configuration program will fill the holes left by removing volumes. It assigns new volume numbers only after all the holes have been filled. In the example above, the next volume configured would be volume 4.

Write Protecting/Enabling a Profix volume is like using a write protect tab on a floppy disk. The Utilities program displays WRITE PROTECT or WRITE ENABLE as one of your options, depending on the current status of the volume. It is impossible to save or delete files on a write-protected volume. Write enabling it will make it possible to save or delete again.

Backup/Restore

The backup and restore program will backup your 280, 392 and 400K volumes onto multiple diskettes. **Note:** this program does not backup individual files! It backs up the entire volume. This program is described later in the manual as the program *COPYX*.

140K Copy

This program copies 140K volumes to floppies. It is described later in the manual as *COPYP 2.0*.

Quit

When you select 'Q' for quit from the main menu, the program terminates and leaves your computer in BASIC under DOS 3.3. The Profix driver program has been loaded. Any DOS 3.3 configured volumes on your ProDOS device(s) are available for your use.

Using Profix:

Once your ProDOS devices are configured for use with Profix, all you need to do to use them is start up with the Profix System diskette and select the 'Q' option to quit. This installs Profix in your machine.

If you find it inconvenient to start up with the Profix System disk all the time, you can use FID and copy the file 'PROFIX 2.0' from the Profix System disk onto one of your own disks to create a turnkey system. Then, all you have to do is BRUN PROFIX 2.0 to load Profix.

Note: By now, you may have noticed some inconsistencies in version numbers. *Profix 2.0* is a file name. *Profix 2.1.1* is the current revision of Profix. Do not let this worry you.

Example: If you want to set up a turnkey system that boots from a floppy disk and runs a program called 'QWERTY' on volume 10 of a ProFile in slot 5, you would initialize a floppy disk with DOS 3.3 and a hello program like this:

```
10 TEXT : HOME
20 PRINT CHR$(4);"BRUN PROFIX 2.0"
30 PRINT CHR$(4);"RUN QWERTY,S5,V10"
```

Then copy PROFIX 2.0 to the floppy disk. When you startup with this disk, it will load Profix and run QWERTY from the ProFile.

Switcher

Switching from ProDOS to Profix

There is a file on your Profix disk called 'SWITCHER'. Use this file to share your ProDOS device with DOS 3.3 and ProDOS. Run the CONVERT program on your ProDOS User's Disk and convert the file SWITCHER over to your ProDOS device. If you have the Catalyst installed on your device, you might want to add SWITCHER to the Catalyst menu. See the Catalyst manual for more information.

After you've done this, you are free to start up with ProDOS and use ProDOS applications. When you want to switch from ProDOS to Profix, there is no need to reboot -- just BRUN SWITCHER or select it from the Catalyst menu. It will place you in the DOS 3.3 operating environment with Profix loaded.

In short, the Switcher is a program that allows you to switch from the ProDOS environment to a DOS 3.3 environment. With this program on the ProDOS part of your ProDOS device, you can easily switch into DOS 3.3 to access your Profix volumes.

ProDOS files

There are three files on the Profix sytem disk that should be converted to ProDOS before use. Use the CONVERT program on your ProDOS users disk to convert SWITCHER, SWITCHFIX, and SYSBIN. Read on to find out what these files do.

SYSBIN

The SYSBIN program converts files from type SYS to type BIN and vice versa. A SYS file is a ProDOS system file and has a special way of loading and executing. A BIN file is a standard binary file. Switcher is a BIN file when it is first converted to ProDOS. Some applications of switcher require the file SWITCHER to become a SYS file. To change it, use SYSBIN. Switchfix (described below) expects Switcher to be of type BIN. If you need to run switchfix, use SYSBIN again to convert switcher to type BIN.

Switchfix

Switchfix is a switcher configuration program. It allows you to create a turnkey system in a DOS 3.3 environment on your ProDOS drive. This program will ask you for a slot, drive, and volume number for a file to be RUN, BRUN, or EXECed when switcher is executed. If you do not want to execute a file, just select F (for FP). After configuring the switcher, it is ready to go. When executed, it will automatically look for the slot, drive, and volume you selected and will execute your file (if you selected that option). Switcher can be reconfigured an infinite number of times.

Note: The Switcher program must be a BIN file at the time that you run switchfix. Also, it must be named SWITCHER, not SWITCHER.SYSTEM or PRODOS.

Three Ways to Startup Directly From a ProDOS Device:

With the SWITCHER program, you can startup directly from a hard drive or UniDisk 3.5 and find yourself in DOS 3.3 with Profix active. Here are three ways to install a turnkey DOS 3.3 system on a ProDOS drive:

1) Plain vanilla switcher. Switcher is a handy program to have around if you plan to use ProDOS a lot. When you BRUN SWITCHER, you will be thrown into a DOS 3.3 environment. So, there is no need to boot the Profix system disk to enter Profix. The switcher on the Profix system disk is configured as a plain vanilla switcher. If you need to reconfigure switcher this way, run the switchfix program, enter slot, drive, and volume numbers, and select 'F' (for FP) when asked. To boot directly into DOS 3.3, save the following short program as STARTUP on the ProDOS part of your drive:

```
10 PRINT CHR$(4);"BRUN SWITCHER"
```

2) SWITCHER.SYSTEM. When a ProDOS device is booted, the file PRODOS is the first one loaded into memory. After that, ProDOS scans the main directory and executes the first file that has a suffix of .SYSTEM. Usually, this is BASIC.SYSTEM, but you can substitute it with the switcher by doing the following:

- a. RUN SWITCHFIX
- b. Configure switcher to your liking.
- c. RENAME SWITCHER,SWITCHER.SYSTEM
- d. RUN SYSBIN
- e. Select the option to change to SYS file.
- f. Enter the name of the file (SWITCHER.SYSTEM in this case).
- g. Make sure that SWITCHER.SYSTEM is the first file in the main directory that has the .SYSTEM suffix. If it isn't, remove the suffix .SYSTEM from any other filenames.

Now, when you boot from this device, you will be sent into a DOS 3.3 environment, and switcher will do what you configured it to do with the switchfix program.

3) PRODOS. If you do not plan to use ProDOS on your drive, or have a microfloppy, you will want to use this option. Follow the steps given above, but rename SWITCHER to PRODOS (after deleting the real PRODOS if it existed). Now, when you boot from this device, the switcher (named PRODOS) will be loaded and executed.

If you want to boot into DOS 3.3 from your microfloppies, you will want to use either this, or the above method. The switcher file uses 29 blocks in addition to 9 blocks of overhead. This leaves you with 1562 blocks (or 781k) free for Profix.

Note: If you use procedures 2 or 3, you will have to boot ProDOS from a floppy disk to access the ProDOS portion of your drive.

COPYING VOLUMES:

COPYP 2.0

COPYP is a copy program similar to COPYA, except you can specify volume numbers as well as specifying slot and drive numbers. To use this or any other copy program with Profix, make sure that the Profix driver program (PROFIX 2.0) has been executed. When you run COPYP, specify the original slot, drive and volume, and then the copy slot, drive and volume.

If you are copying from the ProDOS device to a floppy disk, you should specify the volume number of the volume you want to copy as the original volume. Specify zero as the copy (floppy) volume. If you are copying from a floppy to a Profix volume, specify zero as the original volume. Use the number of the volume you want the copy written to as the copy volume.

NOTE: COPYP can only be used to copy to or from 140k volumes. Do not use it on larger volumes.

COPYX

COPYX is the large volume version of COPYP. Although it looks different, it functions in much the same way. Use COPYX to make backups of volumes larger than 140K. You will be asked whether you want to Backup, or Restore. A backup is a copy from the hard disk to floppies. A restore is a copy from floppies to the hard disk. After specifying backup or restore, specify the profix volume information and the floppy disk information. You can exit the copy any time by pressing ESCape.

The COPYX program will use as many disks as are necessary to copy the volume you select. If you copy volumes larger than 140k, COPYX will periodically ask you to insert a new disk. You can calculate the number of disks needed to be $x/140k$, where x is the size of your volume in kilobytes. This becomes: 140k = 1 disk, 280k = 2 disks, 392k and 400k = 3 disks. You can use COPYX to make 140k backups, but COPYP 2.0 is much faster.

It is a good idea to label your diskettes with the numbers 1-3 so you can insert the disks in the right order. This is important: when you do a restore, COPYX checks the disks to see if you inserted them in the right order.

FID

FID can be used with Profix. To use FID, you must follow some special instructions.

1. BRUN FID.
2. Select the option that lets you quit (9).
3. CATALOG the volume that you want to access as the original volume.
4. Type 'CALL 2051' to re-enter FID.
5. Enter the slot and drive number. FID does not accept volume numbers. Profix remembers the last volume accessed, so the volume you CATALOGed is the volume that it will use.

Use this procedure to copy programs between 400k volumes, 140k volumes, and floppy disks.

Example: To copy from S4,D1,V17 to a floppy in S6,D1: BRUN FID;quit FID; CATALOG S4,D1,V17; CALL 2051, and proceed to copy files.

Other Copy Programs

Profix is **not** compatible with all copy programs. If you want to know whether a particular program will work with Profix, check the following:

- It cannot use the first bank of the ramcard.
- It must run under DOS 3.3.
- It must do a sector by sector copy, not a nibble copy.
- It needs some provision for using volume numbers.

If your program can do all of these things, then, there is the possibility that it might work with Profix. Of course, you will not be able to use your program with volumes larger than 140K unless it is specifically written to handle them.

MORE ADVANCED TOPICS:

EXEC Files for Configuration

After you get used to using your Profix system, you **will** probably find it rather boring to have to configure each volume by hand. An easy way to **configure** many volumes at the same time is to use an EXEC file. There is a sample EXEC file on your Profix disk titled CFG.140.X. If you EXEC this file, it will attempt to configure 34 140k volumes on drive A. By loading this file into a word processor and examining it, you will be able to **figure out** how to make your own EXEC files to configure your drive the way you want it.

Sample file:

```
RUN PRO/CON  
YAAAY  
YAAAY  
YABAY  
N
```

The above file will configure two 140k volumes and one 280k volume on drive A. The first line is a command that runs the configuration part of the Profix system. The next four lines are all commands for the configuration program. The commands all have five parts and a carriage return. Every letter on each command line is a response to one of the prompts the configuration program displays.

<u>Letter Position#</u>	<u>Prompt</u>
1	DO YOU WANT TO CONTINUE?
2	LOGICAL SLOT
3	A=140K B=280K C=392K D=400K
4	PHYSICAL SLOT
5	CONTINUE?
RETURN	PRESS ANY KEY TO CONTINUE

Judging from the file and table above, the first and second commands tell the configuration program it's OK to configure 140k volumes with logical and physical slots on device A. The third command would do the same, except it configures a 280K volume. The last command is a response to the "DO YOU WANT TO CONTINUE?" prompt. The command is "N" for no, and terminates execution of the configuration program.

Modifying BASIC Programs For Use With Profix

The major difference between using a floppy disk and using a ProDOS device with Profix is the presence of the volume command. DOS 3.3 supports volumes; Profix takes advantage of this to allow you to use your DOS 3.3 programs on a ProDOS device without having to convert to ProDOS.

When BASIC programs do disk access, they usually employ a PRINT statement such as: PRINT CHR\$(4); "OPEN DATAFILE". Sometimes, there are parameters associated with the DOS command within the PRINT statement specifying drives or slots. An example of this would be: PRINT CHR\$(4); "OPEN DATAFILE,S6,D1". These statements work just fine under Profix. If you want your programs to have a larger storage area available to them, then you may want to add volume parameters to your DOS commands.

EXAMPLE: You have a 400k volume as volume 3 on a Profile in slot 5. You want to take advantage of the increased volume size for file storage. You would change:

```
100 PRINT CHR$(4); "OPEN TEXTFILE,S6,D1"
```

to:

```
100 PRINT CHR$(4); "OPEN TEXTFILE,S5,D1,V3"
```

This tells your program to open the file on the 400k volume.

DOS 3.3 supports volume commands, but not for all DOS commands. Below is a list of DOS commands you can use with the V parameter:

APPEND, BLOAD, BRUN, BSAVE, CATALOG, CHAIN, DELETE, EXEC, FP, INIT, LOAD, LOCK, OPEN, RENAME, RUN, SAVE, UNLOCK, VERIFY.

Notice the commands READ, WRITE and CLOSE do not allow the volume parameter. If you have a program that works with a Corvus or Davong hard disk, you have been following a specific procedure to switch from one volume to another while files are open. This procedure **will not** work with Profix. To change volumes under Profix, POKE the volume number you want into the location determined by: slot# +1144 (or \$478 + slot in hexadecimal). Then your program will function as before.

Additional Notes

The Removable Media Problem

With the introduction of the new UniDisk 3.5, comes a small problem for the user. Problem: What happens when you remove a microfloppy and insert a different one? When Profix first accesses a drive, it reads in a Profix Directory Block (PDB). It then uses the data in this block to determine how to access each volume. When you insert a new disk, Profix doesn't know that it needs to read a new PDB, so it gets confused. With hard disks, this wasn't a problem, because disks could not be removed (without voiding your warranty).

Luckily, the problem of what happens when you access a different floppy with Profix is easily solved. **When you remove a microfloppy and insert a new one, you must specify a slot or drive with the next DOS command you give.** For example, if you insert a new disk and want to catalog a volume on it, you must specify the slot or drive even if it hasn't changed. Example: CATALOG,D1. Specifying a slot or drive **forces** Profix to read a new PDB. If you do not specify a volume, Profix will access the new disk with the old PDB. This can cause great damage to your data!

How to Speed Up Applesoft Programs

When you specify a slot or drive parameter with a DOS command, Profix reads in a new PDB. This takes time (not much, but it is noticeable on slower drives). If you have a program that does a lot of disk access, you may want to remove as many of the S and D parameters as you can. This will make disk access faster.

Compatibility Notes

INIT Compatibility

Profix 2.1.1 supports initialization by DOS 3.3 provided you follow some simple guidelines. Since there are several sizes of volumes, DOS 3.3 needs to know what size volume you are trying to initialize. To inform DOS 3.3 about the volume size, simply access the volume you want to initialize **before** you initialize it.

EXAMPLE: To initialize volume 3 in slot 5, do any one of the following:

- a. CATALOG, V3, S5 and then INIT HELLO, V3, S5.
- b. LOAD HELLO, V3, S5 and then INIT HELLO, V3, S5.
- c. (any other DOS command), V3, S5 and INIT HELLO, V3, S5.

For example, you are working with a 400K volume (volume 4 for example), and you want to initialize volume 3 which is configured for 140K. If you type INIT HELLO, V3, S5 without accessing volume 3 first, DOS 3.3 would try to format it as a 400K volume. This would result in an I/O ERROR. If you had been working with a 140K volume and tried to initialize a 400K volume without accessing it first, DOS 3.3 would format it as a 140K volume, and you would lose 260K of storage space. Therefore, it is important that you access a volume before initializing it.

There are circumstances under which this rule does not apply:

- 1) All your volumes are the same size, then you can initialize without first accessing the volume .
- 2) The volume you want to initialize is the same size as the one you've been working with. You can initialize the new volume without accessing it first.

The INIT command should only be used for formatting diskettes or volumes. DOS 3.3 cannot be correctly written to a diskette or volume during initialization, so any disk you initialize while Profix is in memory will not boot properly. If you want to initialize a disk with "good" DOS, you must reboot and initialize before you start using Profix. It is recommended the INIT command be used only for Profix volumes, since they cannot be booted anyway.

Integer BASIC Compatibility

Integer BASIC can be used with Profix 2.1.1. Profix works if you have an Apple][with Integer ROMs or if you have Integer BASIC in the RAMCARD. It may or may not work with Integer

ROMCARDS, depending on your computer's memory configuration. If you want to use the `LOADER.OBJ0` program on your DOS 3.3 System Master to load `INTBASIC` into memory, you will have to do the following:

```
]BLOAD LOADER.OBJ0
]CALL -151
*1038:83
*103B:83
3D0G
]BSAVE LOADER.OBJ0,A$1000,L$444
```

This patch is necessary if you want to use Load Integer Basic after Profix is already in memory.

Pre-packaged Software Compatibility

Unprotected software working under DOS 3.3 probably works with Profix. To use commercial software with Profix, do the following:

- 1) BRUN the program 'PROFIX 2.0' to load the Profix driver program into memory.
- 2) RUN or BRUN the software.

If you plan to copy your software onto your ProDOS device, you might want to create a turnkey system (as outlined earlier in this manual). Otherwise, you will have to start up with the Profix diskette and select the Quit option which loads the Profix driver program.

UniDisk 3.5 Compatibility

If you plan on configuring microfloppies with Profix, you must make sure that they have been formatted with ProDOS first. A new, blank microfloppy will not work with Profix. Also, if you format a microfloppy with a program other than Apple's Filer, the results will be unpredictable. Formatting a microfloppy (or any ProDOS device) with the Filer program uses up at least nine blocks of disk space. This leaves you with 781 blocks that you can use for Profix on a microfloppy. (It also explains why you cannot install two 400k volumes.) To avoid problems, **always** format new microfloppies with the Filer program on your ProDOS users disk.

Pascal compatibility

Now that it is possible to format an entire ProDOS device for Pascal, Profix has been modified to ignore 100% Pascal devices. You need not worry about destroying your Pascal data on such drives. The Profix configuration program will only recognize ProDOS drives.

ProntoDOS Compatibility.

Profix is compatible with ProntoDOS! ProntoDOS and Profix work together as an unbeatable DOS combination when you remember a few simple tips:

- Do not move ProntoDOS into the language card.
- Do not select the address and length display option in ProntoDOS.

If you abide by these rules, ProntoDOS and Profix will work together, and at a much faster rate:

<u>Semi-scientific test results</u>			
<u>Times are in seconds</u>			
<u>Operation</u>	<u>DOS</u>	<u>ProntoDOS</u>	
BSAVE to UniDisk 3.5	108.4	98.5	
BLOAD from UniDisk 3.5	52.8	20.1	
BSAVE to Profile 10meg	57.5	30.7	
BLOAD from Profile 10meg	36.1	6.6	

As you can see, ProntoDOS makes a big difference. Note: it is possible that some of the other optional features of ProntoDOS (in addition to the one mentioned) interfere with Profix. If your ProntoDOS configuration will not work with Profix, try another configuration.

ProntoDOS is a trademark of Beagle Bros. Software, Inc.

Technical Notes For Programmers:

- The Profix driver loads at \$4000 and is \$500 in length.
- It relocates to \$D000 in bank 1 of the ramcard. (That's the one you access with \$C088-\$C08F)
- If you plan on running under auxiliary RAM with Profix, you do so at your own risk.
- When Profix has been installed on a drive, DO NOT alter block 1 of that drive!!
- Profix makes several patches to DOS at \$B6B3 and other places.
- The set of scratch pad locations at \$478,X are used by Profix to store volume information. Using these locations is not recommended, but shouldn't result in any serious damage.
- Programmers should make sure the location \$B7F7 always contains the slot of a floppy disk controller. If this location contains the slot of a ProDOS device, the Apple][+ will lock up.
- To change volumes under Profix, POKE the volume number you want into the location determined by: slot# +1144 (or \$478 + slot in hexadecimal).

ERROR NUMBERS:

- 2 or 3 RANGE ERROR
- 4 DISK OR VOLUME IS WRITE PROTECTED
- 5 END OF DATA
- 6 FILE NOT FOUND
- 7 VOLUME MISMATCH
- 8 I/O ERROR
- 9 DISK FULL
- 10 FILE LOCKED
- 11 SYNTAX ERROR
- 12 NO BUFFERS AVAILABLE
- 13 FILE TYPE MISMATCH
- 14 PROGRAM TOO LARGE
- 15 NOT DIRECT COMMAND

The errors most likely to occur with normal use are shown outlined.

Other Error Messages:

Range error. This occurs if you try to access a volume with a number larger than the number of the last volume on your ProDOS device.

Write protected. This occurs if you try to save or delete a file from a volume you have write protected. If you want to save or delete, use the Profix utilities program to write enable the volume.

Volume mismatch. This occurs when you try to access a volume that does not exist and has a volume number less than the number of volumes configured. (In other words, if you don't get a range error, you will get a volume mismatch error.)

I/O error. You will get this error if you try to initialize a 140K volume as a 400K volume (or any small volume as a larger one).



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