

Dr. Ken's CFFA3000 Apple IIGS Tutorial

Introduction

Background

Before I received my first CFFA3000 card, I was using a MicroDrive Turbo in my main IIGS system. The "Turbo" does not have a USB connector nor can you run programs directly from their archival file (e.g., GAME.DSK). But the Turbo does have two CompactFlash slots. I configured my system so that one CompactFlash card stayed in the system all the time and was configured as a single 2 GB HFS volume. This volume is used to store the hundreds of files I maintain on that system. The second CompactFlash slot contains a 128 MB CompactFlash card, configured as four 32 MB ProDOS volumes, one of which has GSOS (ProDOS 6.0.1) installed. It is from that volume that my IIGS boots into GSOS. I use the other three 32 MB volumes to transfer files between my PC and IIGS, and that CompactFlash card resides on a CF Extender which brings the card outside the IIGS body proper, as you can see from the photo below.



The MicroDrive Turbo installed in my IIGS with one CompactFlash card accessible via a CF Extender.

That system gave me one very large (2 GB) HFS volume to store files on, four 32 MB volumes from which I could run GSOS as well as transfer files easily between my IIGS and PC, and gave me full access to the two 5.25" floppy and two 3.5 floppy drives I maintain on that system. (Yes, I am a dinosaur and I do enjoy running floppy disks from time to time!) That setup gave me everything I needed.

When I got my first CFFA3000 card, I wanted to replicate that setup as closely as possible. That is, I wanted one large "solid state hard drive" to store large quantities of files on, have an easy way to transfer files from PC to IIGS and back using a thumbdrive rather than a CompactFlash card, and have access to ALL of my physical drives. So why get a CFFA3000 card? Because I wanted all that AND the ability to run programs (primarily games) from archival .DSK and .PO files without having to unarchive them and make real floppy disks.

I had a LOT of questions that the documentation that came with the CFFA3000 card didn't satisfy. And when I asked my questions online from other CFFA3000 users, the over-riding feedback was that I should abandon the hard drive volume paradigm and simply run .DSK and .PO archival files on the card. That would have been fine if all I wanted to do was to play games, but playing games is the least I do with my IIGS.

This tutorial is gear specifically for those who, like me, wish to fast boot GSOS off a virtual solid-state hard drive volume, have a large solid-state hard drive to store files on, and have access to all of the real, physical floppy drives as well as to the CFFA3000's virtual 5.25 floppy drives simultaneously.

Preparation

This document assumes you are familiar with the Apple IIGS and it's basic setup and concentrates on the CFFA3000 card installed.

The hardware we will be using in this tutorial is:

Apple IIGS with at least one 3.5 and one 5.25 floppy
disk drives connected

CFFA3000 card

CompactFlash card

USB Thumbdrive

USB Extension cable

We will be configuring our Apple IIGS such that all real floppy disk drives as well as both the Smartport and virtual floppy drives of the CFFA3000 are available on the Apple IIGS GSOS desktop. The CompactFlash will be used as a solid-state hard drive volume and the USB thumbdrive will contain the GSOS (ProDOS 6.0.1) disk image from which our system will boot.

Preparing the CompactFlash and USB Thumbdrive

The USB Thumbdrive images are contained in a zip file accompanying this tutorial. Unpack the zip file and copy the contents to your USB thumbdrive.

A variety of disk image files for various hard drive sizes (from 8 MB to 2 GB) are available on Apple2Online.com for downloading¹. Select the file size appropriate for your CompactFlash card, unzip it and copy the contents to your CompactFlash card.

You are now ready for the hardware installation in your Apple IIGS.

¹If your CompactFlash card isn't quite large enough to accept these standard sizes (your CF card might have some small bit of overhead), I've included "tiny bit smaller" volume sizes: 1.8 GB; 0.9 GB; 510 MB; 254 MB; 126 MB; 62 MB; 30 MB; 15 MB. So, for example, if your 2 GB CF card will not accept the 2 GB image (hfs2GB.po) then you might try the smaller file hfs18GB.po which is configured as a 1.8 GB volume.

Part I

Quick Hardware Setup

1. Open your IIGS and install the CFFA3000 card in Slot 2.
2. Install the Compact Flash memory card (CF card) you prepared in the previous section into the CFFA3000 card.
3. Thread the USB extension cable through the open back panel slot and connect it to the CFFA3000 card as shown in Figure 1.1 below.
4. Connect the USB thumb drive you prepared in the previous section to the other end of the USB extension cable.
5. Check the switches on top of the CFFA3000 card to ensure that Switch 7 is in the ON position (closest to the circuit board), as shown in Figure 1.2. Note that all other switches are set to their OFF position.
6. Replace the top of your IIGS.



Figure 1.1. CFFA3000 card installed in slot 2 with USB extension cable attached and threaded out through the back of the IIGS case.

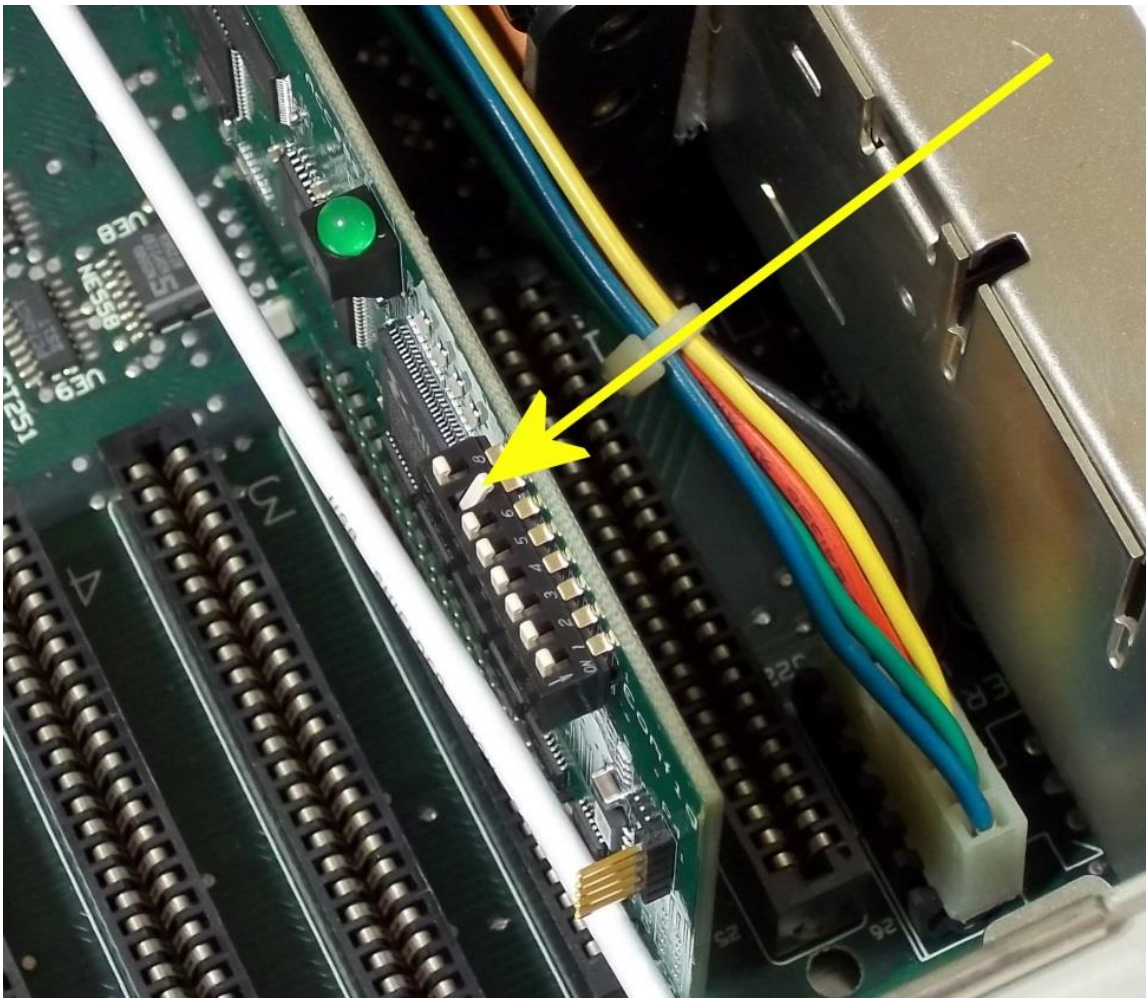


Figure 1.2. Location of the DIP switch that needs to be set on the CFFA3000 card.

Booting Your System For the First Time

1. Turn your Apple IIGS' power ON and immediately access the Desk Accessories by pressing Open Apple-Control-Escape (Figure 1.3).

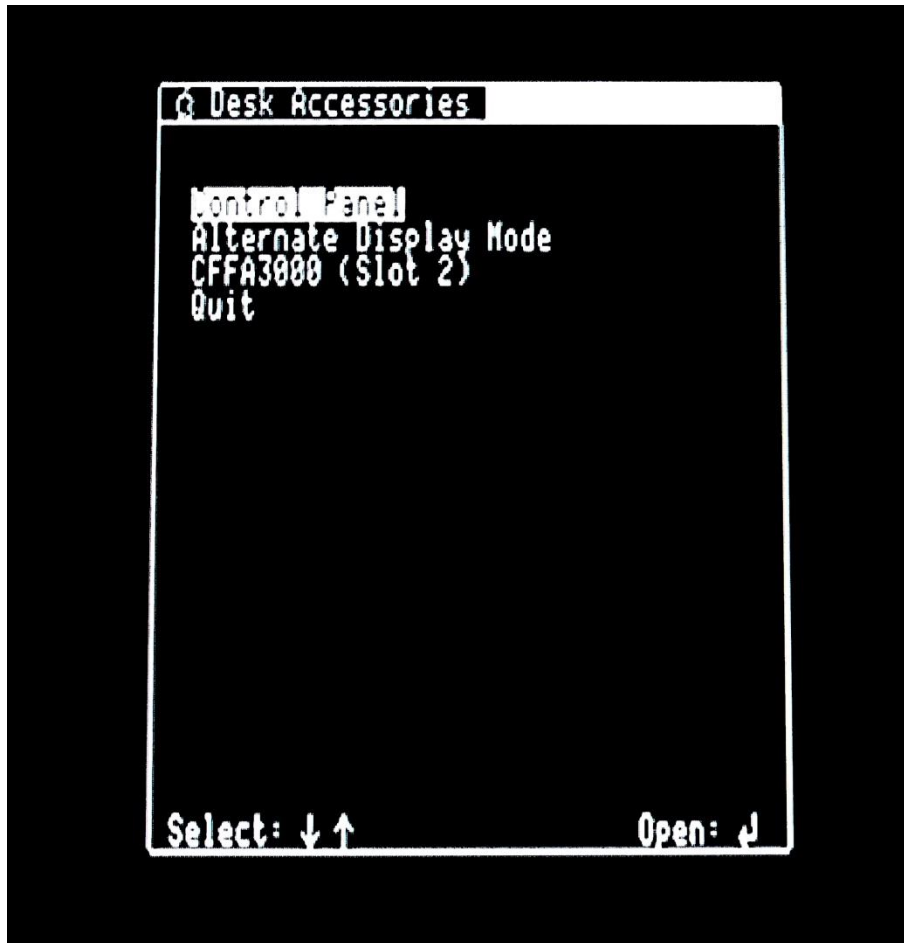


Figure 1.3. Desk Accessories panel.

2. From the Desk Accessories panel, select Control Panel and press RETURN.
3. From the Control Panel (Figure 1.4) select Slots and press RETURN.

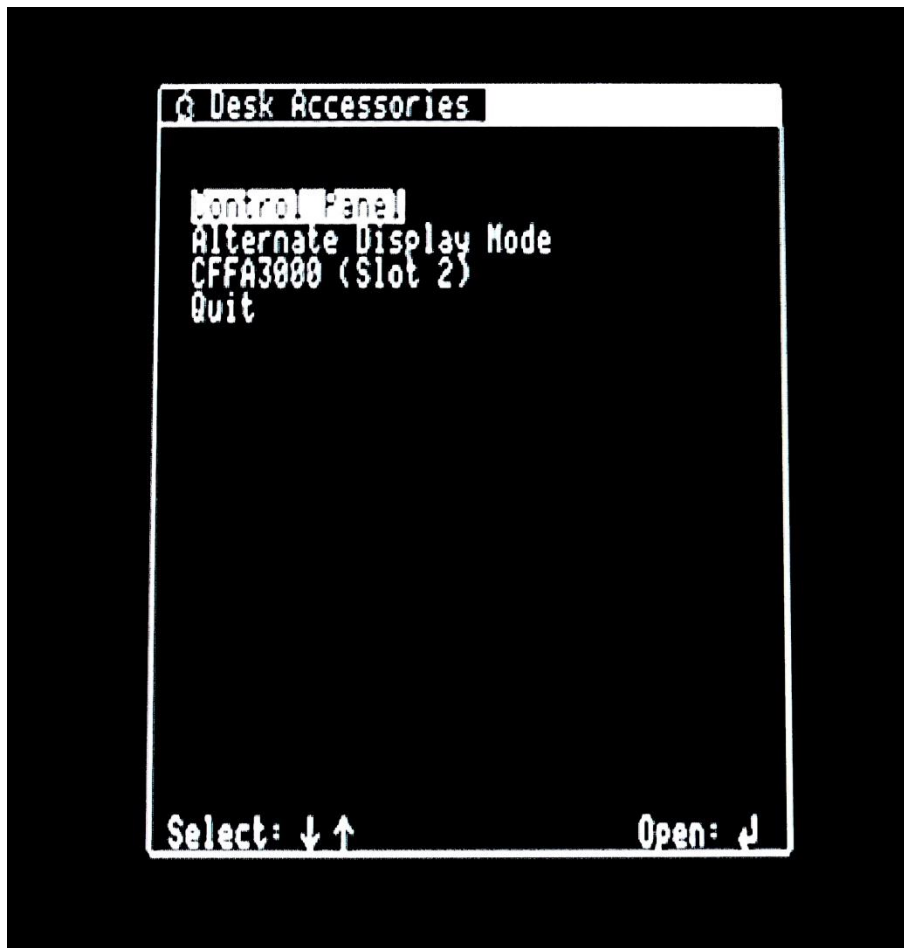


Figure 1.4. Control Panel.

4. Select "Your Card" for both Slot 2 and Slot 7, and set Startup Slot to "2" (Figure 1.5).



Figure 1.5. Control Panel | Slots showing Slot 2 and Slot 7 set to “Your Card” and Startup Slot set to “2”.

5. Press the ESCAPE key to go back out to the Control Panel, select Quit and press RETURN to return back to the Desk Accessories panel (Figure 1.3).
6. Select CFFRA3000 from the Desk Accessories panel and press RETURN to access the CFFRA3000 accessory (Figure 1.6).

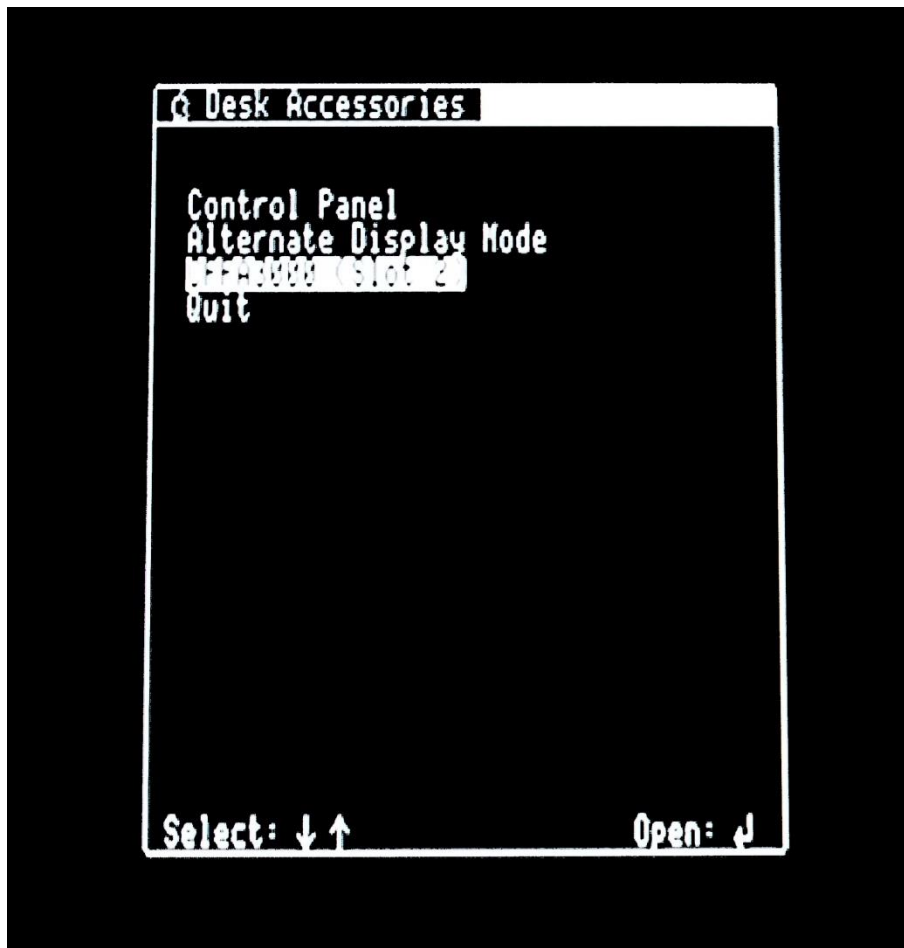


Figure 1.6. Accessing the CFFA3000 desktop accessory.

7. Your main menu screen of the CFFA3000 desktop accessory should look very similar to that shown in Figure 07 below.
8. First check that the SmartPort Volumes displays “slot 2”. The Smartport is the physical location of your CFFA3000 card, which you installed into Slot 2 of the Apple IIGS.
9. Next, select “1. Disk II Slot:” and enter “7”. Your screen should now look exactly like that shown in Figure 1.7 below.

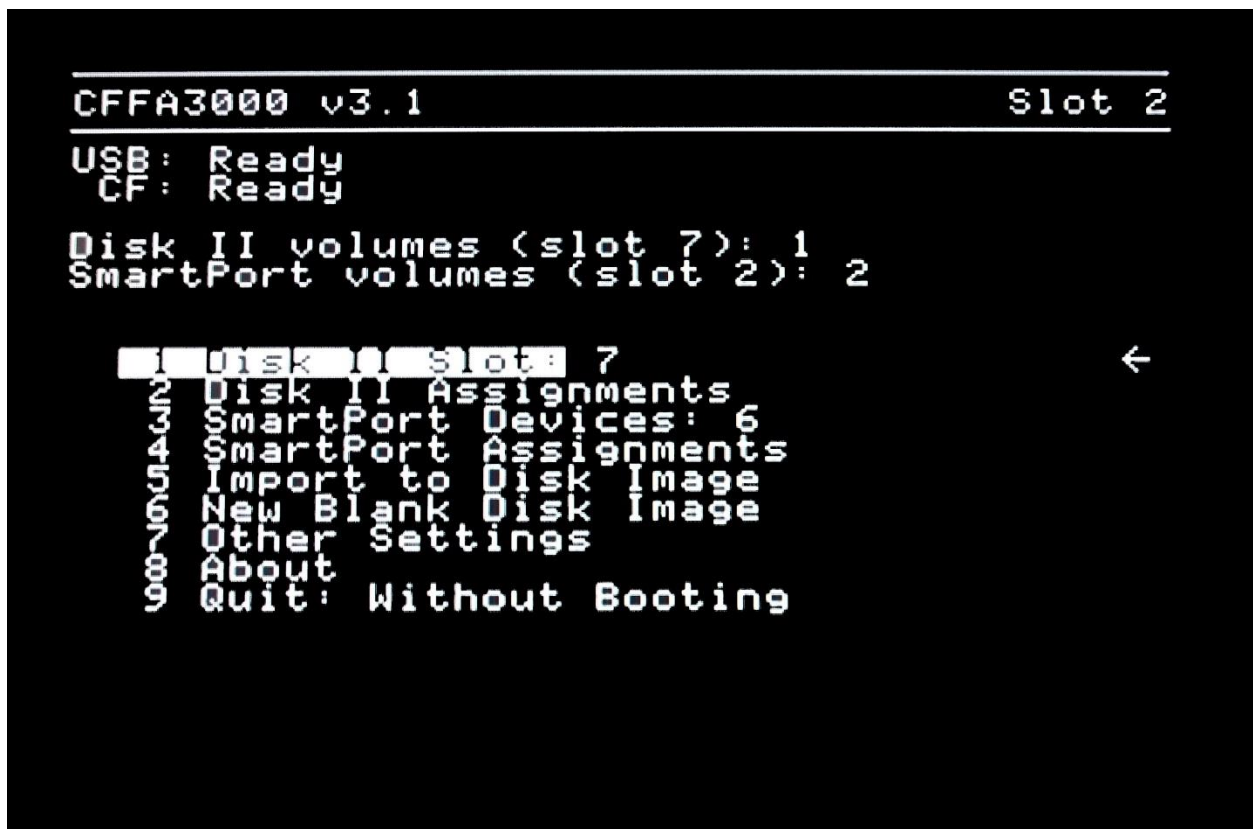


Figure 1.7. The main menu screen of the CFFA3000 desktop accessory.

10. Select “7. Other Settings” and press RETURN to access the Other Settings screen (Figure 1.8 below).

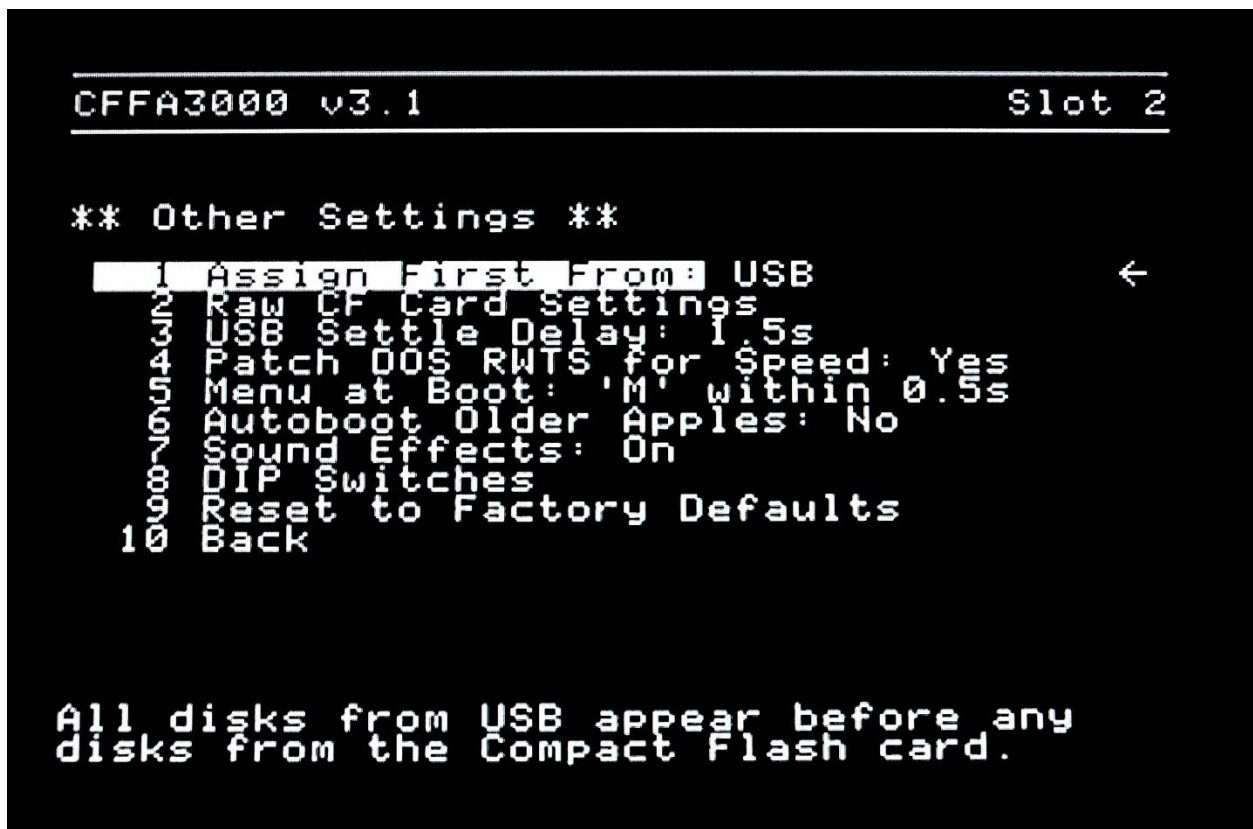


Figure 1.8. The Other Settings screen of the CFFA3000 desktop accessory.

11. Set “1. Assign First From:” to “USB”.
12. Select “10. Back” to return to the main menu.
13. Select “4 SmartPort Assignments” (Figure 1.9) and press RETURN.
14. The SmartPort Assignments menu (Figure 10) is very important. The left panel displays the available disk images on the CF or USB card. Pressing the SPACE key while in the left panel toggles between CF and USB devices. The right panel shows the disk images assigned to the SmartPort. It is critically important that the first disk image – which is the one which will boot – is the GSOSBOOT.PO image. It should be prefaced by a “u” indicating that it is on the USB device.

```
CFFA3000 v3.1                               Slot 2
-----
USB: Ready
CF: Ready

Disk II volumes (slot 7): 1
SmartPort volumes (slot 2): 2

1 Disk II Slot: 7
2 Disk II Assignments
3 SmartPort Devices: 6
4 SmartPort Assignments
5 Import to Disk Image
6 New Blank Disk Image
7 Other Settings
8 About
9 Quit: Without Booting
```

Figure 1.9. Selecting SmartPort Assignments from the main menu.

- 15. The next disk image assigned to the SmartPort should be the “hard disk drive” disk image you copied previously to your CF card. In this example I used a file named hfsvol.po. Use the SPACE bar to toggle over to your CF card, select the name of your hard drive image and press RETURN to assign it to the SmartPort. Notice that it will have a lower case “c” before the filename in the right panel, indicating its source is the CF card.
- 16. You can delete files assigned to the SmartPort by using the TAB key to toggle to the right panel, highlight a filename and press the “-“ (minus) key to remove it. Toggle back to the left panel, highlight a filename and press RETURN to assign it to the next available slot in the right panel.

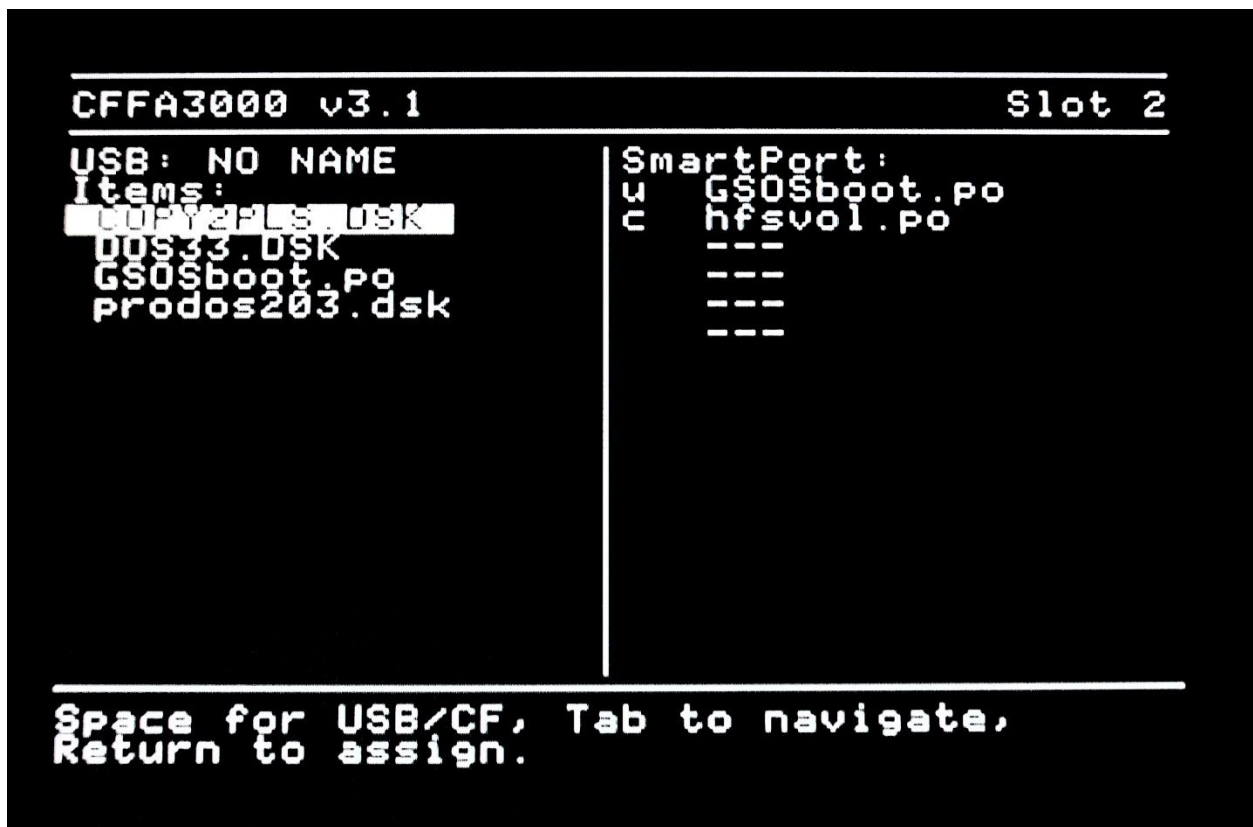


Figure 1.10. The SmartPort Assignments screen.

17. Once you have made both SmartPort assignments (one for GSOS on your USB drive, the other for your “hard drive” volume on the CF drive), press ESCAPE to return to the CFFA3000 main menu.
18. You have now set up all of the hardware needed!
19. Do an Open Apple-Control-Reset to boot your system. If you have everything configured properly, your system will boot into GSOS from the CFFA3000 thumbdrive!

Note: In this example, we have two different files assigned to the SmartPort – one from the USB, the other from the CF. If you look back at Figure 08, we have set the CFFA3000 to boot first from the USB card. If that is missing, it will attempt to boot from the CF card using whatever file is specified above (Figure 1.10). In this example, the CF file is a non-bootable, empty hard drive image, so our system will not

boot if the USB file is unavailable. If you have a bootable disk image on your CF card, put that here in the SmartPort Assignment list, placing it before any other CF file assignments you make.



Booting into GSOS from your CFFA3000 Card

Boot your system and you will see the “Welcome to the IIGS” message screen (Figure 1.11 below).

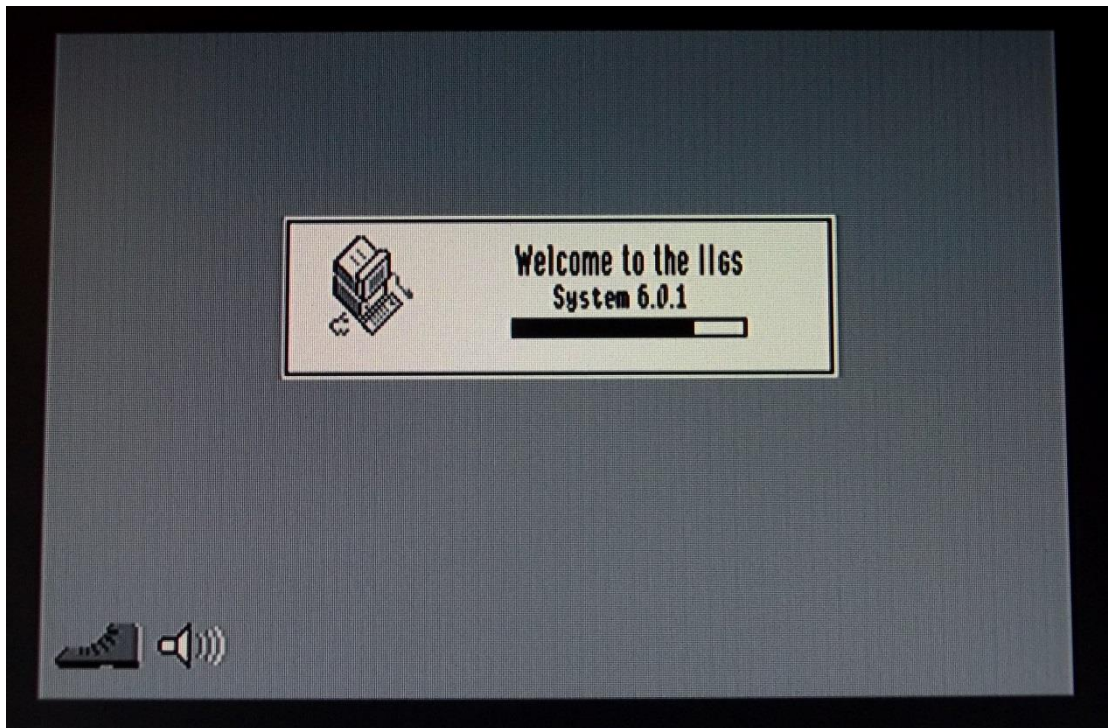


Figure 1.11. Booting into GSOS from your CFFA3000.

And soon you will be at the GSOS desktop (Figure 1.12). The BOOT device on your desktop is the disk image GSOSboot.po that you booted from on the CFFA3000 card. If you open it, you will see the contents of that drive.

On my IIGS, I have two 3.5 and two 5.25 disk drives attached. Note that my IIGS desktop lists four 5.25 drives labelled:

APPLEDISK5.25A
APPLEDISK5.25B
APPLEDISK5.25C
APPLEDISK5.25D

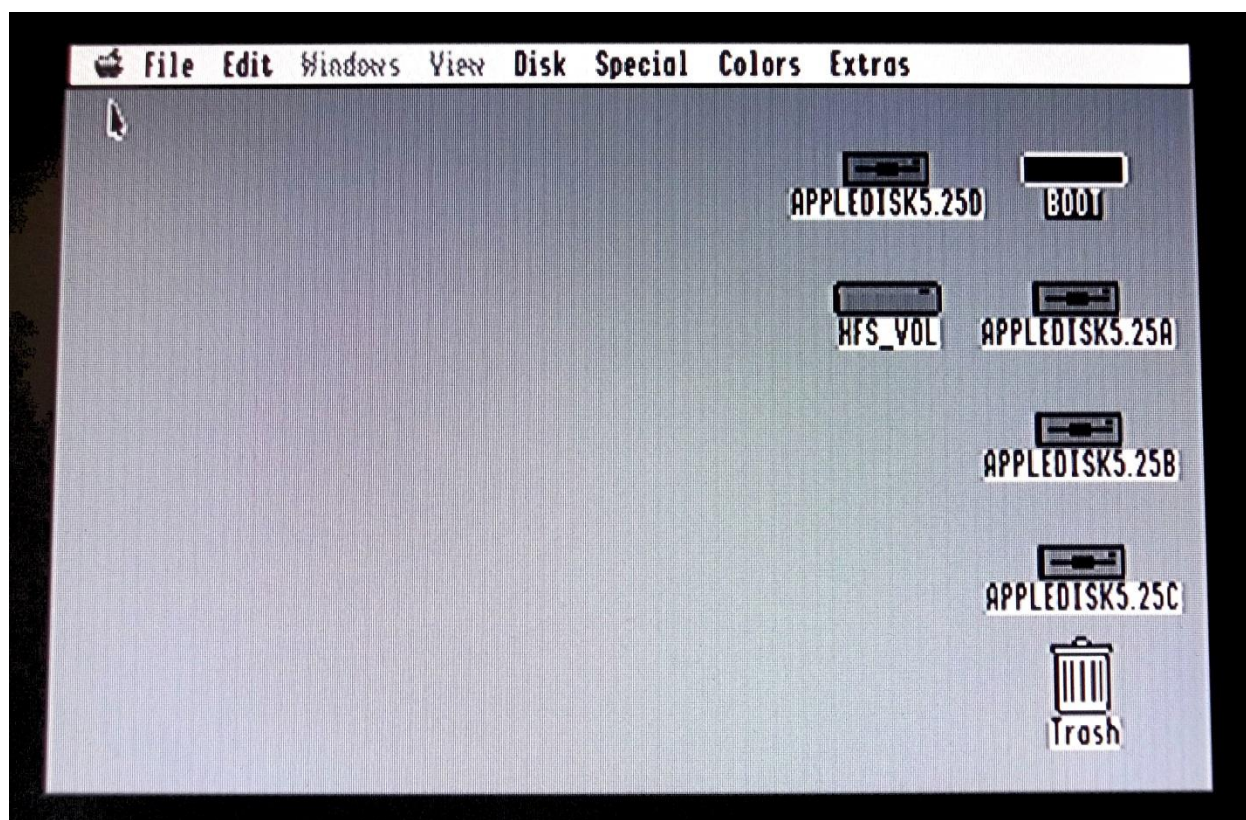


Figure 1.12. The GSOS desktop as booted from the CFFA3000.

The first two – A and B – are virtual floppy disks from the CFFA3000 card. C and D are the two real, physical 5.25 floppy disk drives attached to the IIGS.

HFS_VOL is the name of the large hard drive that is located on the CF card. The name of your hard drive will be whatever name you gave it when you copied the name.po file to your CF card. If you used, for example, the 2 GB image downloaded from www.Apple2Online.com, your hard drive will be named hfs2GB.

If you insert a real 3.5 floppy disk into one of your 3.5 drives, it will appear on the desktop as usual. You can work with the virtual 5.25 drives just as you would real 5.25 drive, copying files to/from them.

“Inserting” a “Disk” into a Virtual Floppy Drive

On your keyboard, press Open Apple-Control-Escape to access the Desktop Accessories screen (Figure 1.4), select CFFA3000 (slot 2) and press RETURN to access the CFFA3000 main menu.

Select “2 Disk II Assignments” and press RETURN to access the Disk II Assignments screen (Figure 1.13 below).

```
CFFA3000 v3.1                               Slot 2
-----
USB: NO NAME                                == Disk II S7,D1 ==
Items:                                       u> 00S33.DSK
00S33.DSK
prodos203.dsk

== Disk II S7,D2 ==

-----
Space for USB/CF, Tab to navigate,
'1' or '2' to assign to a drive.
```

Figure 1.13. The Disk II Assignments screen.

If the contents of your USB drive are not displayed in the left panel, press SPACE to toggle to the USB contents. One of the files you copied previously

to your USB thumbdrive was COPY2PLS.DSK which is a 5.25” floppy disk image of the Copy II Plus program. With that name highlighted in the left panel, press “1” to assign it to Disk II S7, D1. This is the APPLEDISK5.25A on your Apple IIGS desktop. Disk II S78,D2 is APPLEDISK5.25B on your Apple IIGS desktop.

Once you have Copy II Plus “loaded” into your virtual Disk II S7,D1, press ESCAPE to return to the main menu, and continue to ESCAPE back to your Apple IIGS desktop.

Now that you have “inserted” your Copy II Plus disk into the virtual drive, double-click on your APPLEDISK5.25A drive on your desktop and you can see the contents of the Copy II Plus disk. If you wish to run the program, go ahead!

In this way, you can load different “disks” (actually disk images) from your USB card to the virtual floppy drives on your GSOS desktop. Of course, you can save files to either your virtual hard drive or either of the virtual disk drives, run programs from the drives, edit and save data files, etc., all as you would on real, physical drives.



Critical Note

I have observed that for reasons unknown, if you have GSOS 6.0.1 desktop up and running on your IIGS and you access the CFFA3000 Main Menu and attempt to boot a DOS file from the Disk II emulator of the CFFA3000, you might hang your system. There does not seem to be a problem if you are running DOS 3.3 or ProDOS, only if you have GSOS 6.0.1 running and you attempt to soft boot into a DOS program. To get around this, I suggest you do a RESET-boot of your IIGS after using GSOS 6.0.1.

Part II

Creating a Large Volume HFS Volume Image File

Although several different blank HFS files are provided for use as HFS virtual hard drives on www.Apple2Online.com, you may need to or simply wish to create your own image files for sizes other than those given. Here's the procedure for Windows users.

1. Open the Windows Start button and in the **Search Program and Files** bar, enter **CMD** and press RETURN (Figure 2.1). This opens up the Command Window (Figure 2.2).

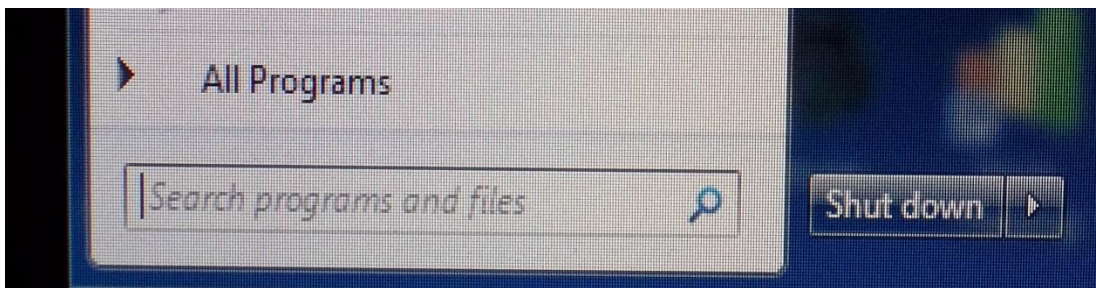


Figure 2.1.

2. In the Command window, if we enter in the following command:

```
fsutil file createnew hfsvol.po 134217728
```

it will create a file named **hfsvol.po** of filesize 134,217,728 bytes, which are the number of bytes on a 128 MB CF card. This is shown in Figure 2.3 below.

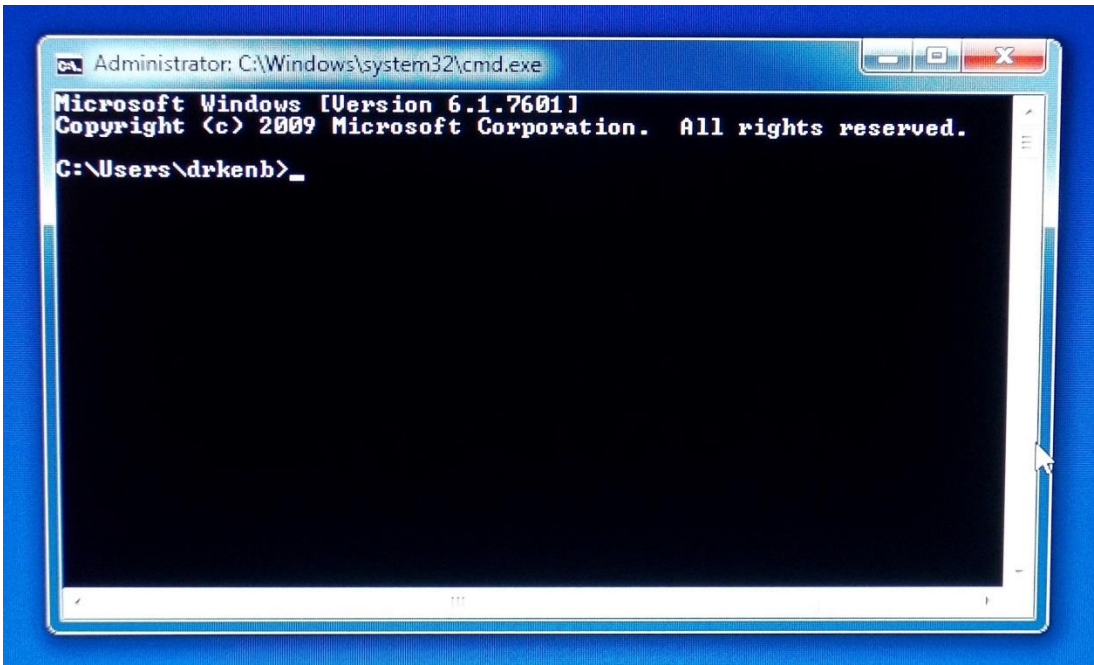


Figure 2.2. The Command window. Pay particular attention to the directory in which this opens (in this example, C:\Users\drkenb).

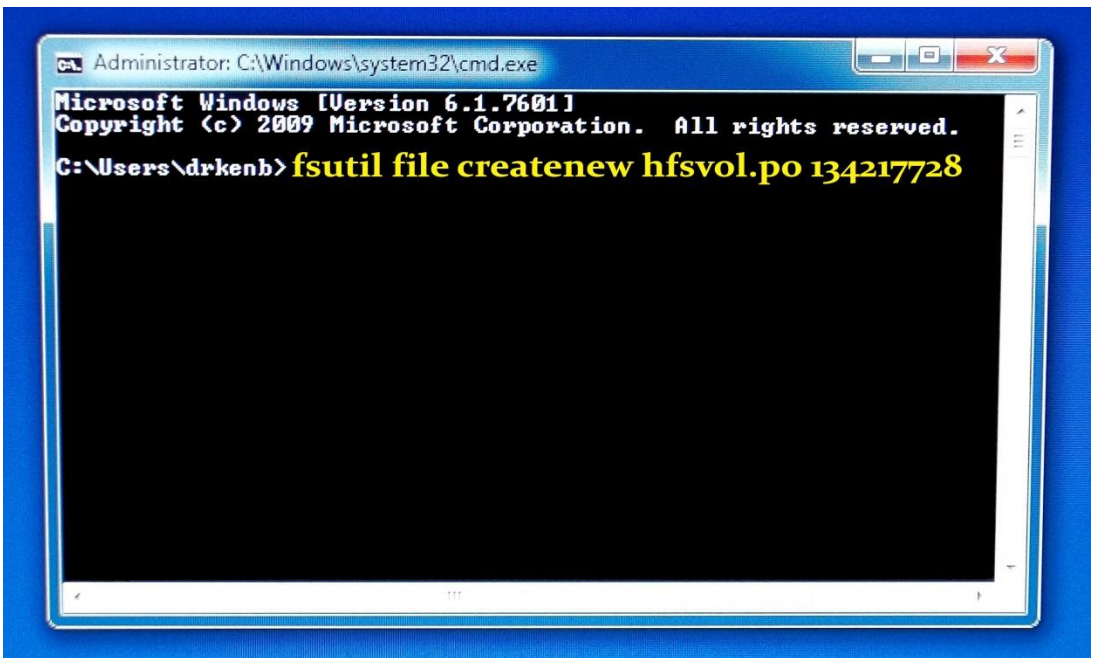


Figure 2.3. Creating a new large HFS volume (disk) image file in Windows.

Before you proceed, you need to consider what size file can be placed on your CF drive. Realize that CompactFlash & USB Thumbdrives may

have some slight overhead; that is, a 1 GB CompactFlash card, for example, may not have exactly 1 GB free memory.

To create your HFS file you will need to calculate it's size using the formula

$$\# \text{ MB} * 1048756 = \text{Total Bytes}$$

- ☞ **An alternative to doing the math, you can use this nifty little converter on the internet:**
<http://www.whatsabyte.com/P1/byteconverter.htm>

If you purchased the Apple IIGS CFFA3000 GSOS Installation Kit from me, the files contained on the DVD set are:

CompactFlash/ Thumbdrive Size	Filename On DVD	File Name (# bytes)
8 MB	HD_8MB.PO	8 388 608
16 MB	HD_16MB.PO	16 777 216
32 MB	HD_32MB.PO	33 554 432
64 MB	HFS_64MB.PO	67 108 864
128 MB	HFS_128MB.PO	134 217 728
256 MB	HFS_256MB.PO	268 435 456
512 MB	HFS_512MB.PO	536 870 912
1 GB	HFS_1GB.PO	1 073 741 824
1.5 GB	HFS_15GB.PO	1 610 612 736

What if your CompactFlash card is slightly less than advertised? For example, if you purchased a 128 MB card but find that it only has 122 MB free on it, you can easily create your own blank file to fit on your card. Since your 128 MB card will not accept a 128 MB file, create a file which is 8 MB less than 128 MB by subtracting 8 388 608 bytes (8 MB) from 134 217 728 bytes (128 MB) and create a file 125 829 120 bytes in size (120 MB) using the above formula.

3. Once your file has been created, you're ready to copy it to your drive (CF or USB). Before you do that, it is a sterling idea to reformat your card (Figure 4 below).

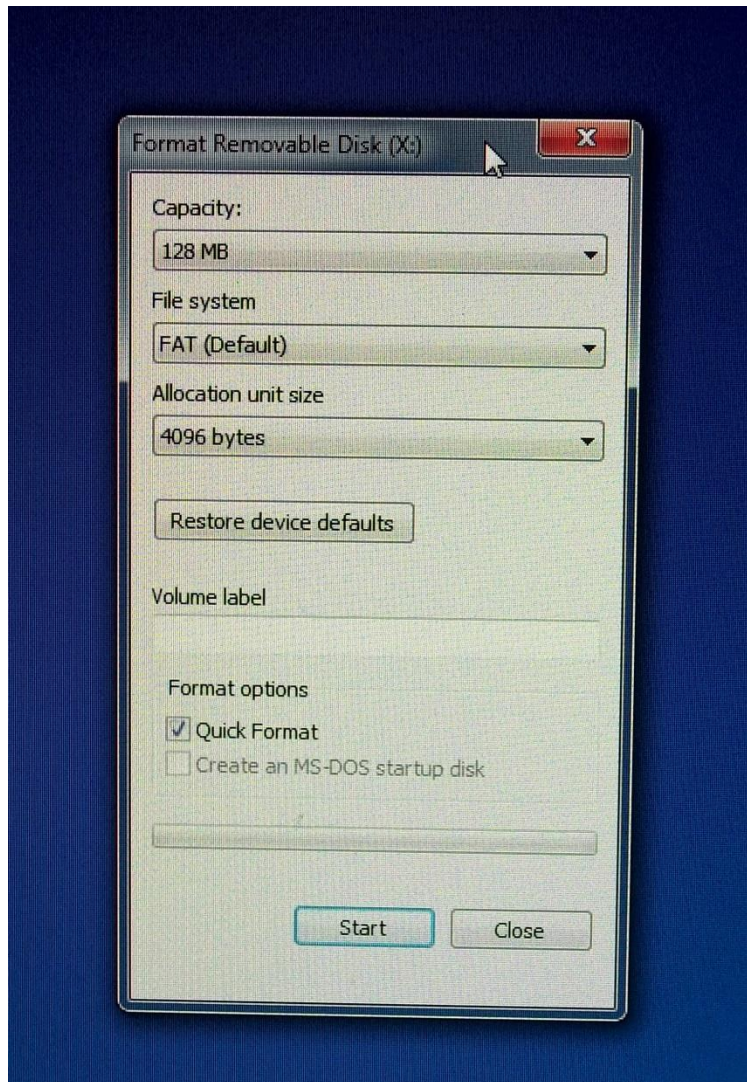


Figure 2.4. Formatting the CF card in Windows.

Once your media has been reformatted to ensure it is completely clear of data, you simply copy your file to the card (Figure 2.5).

Make sure that you set up your CFFA3000 card to use that filename!

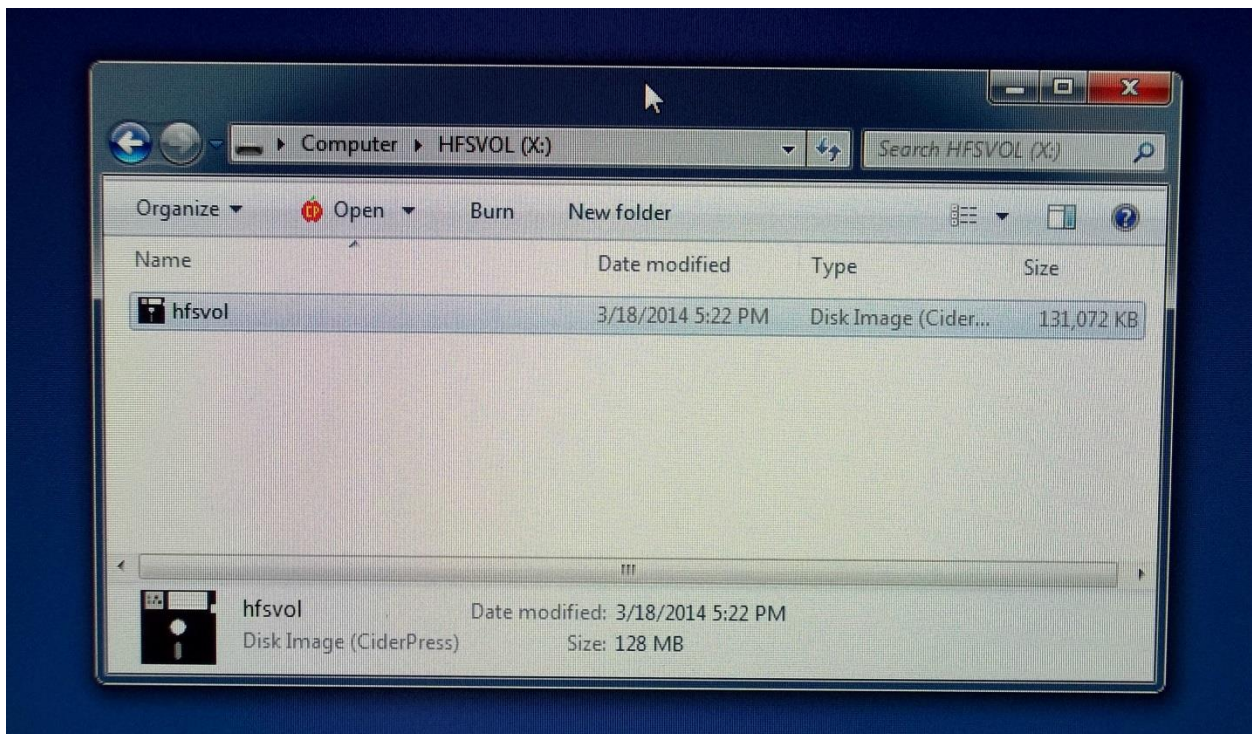


Figure 2.5. Simply copy the blank hard drive image file to your USB or CF card for use in the CFFA3000.

Blank Images

For those of you who did not purchase the kit from me, the files I listed above are available for download from www.Apple2Online.com in the Documentation | CFFA3000 Support Library.

On the IIGS

Once you have your files copied to your CompactFlash & Thumbdrive, install both into your CFFA300 in the Apple IIGS, and power the computer ON. Immediately access the IIGS Desktop Accessories menu and access the CFFA3000 main menu.

From the main menu, select “4 SmartPort Assignments” and press RETURN (Figure 2.6).

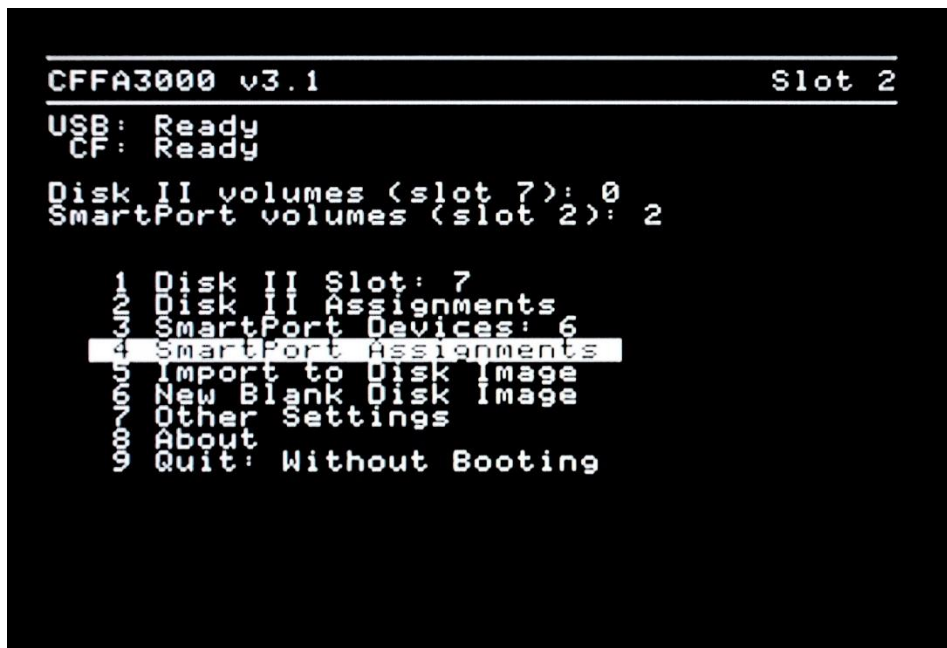


Figure 2.6 Select SmartPort Assignments to assign your Large HFS volume.

Make sure you're looking at the contents of the CF card. Highlight the name of your HFS file (in this example, HFS_VOL15.PO) and press RETURN to assign it to the SmartPort (Figure 2.7).



Figure 2.7 Assigning the HFS_VOL to the SmartPort.

Once your HFS volume has been assigned to the SmartPort, press ESCAPE to return to the main CFFA3000 menu, select “9 Boot: Slot 2” and press RETURN (Figure 2.8) to boot into your IIGS GSOS desktop.

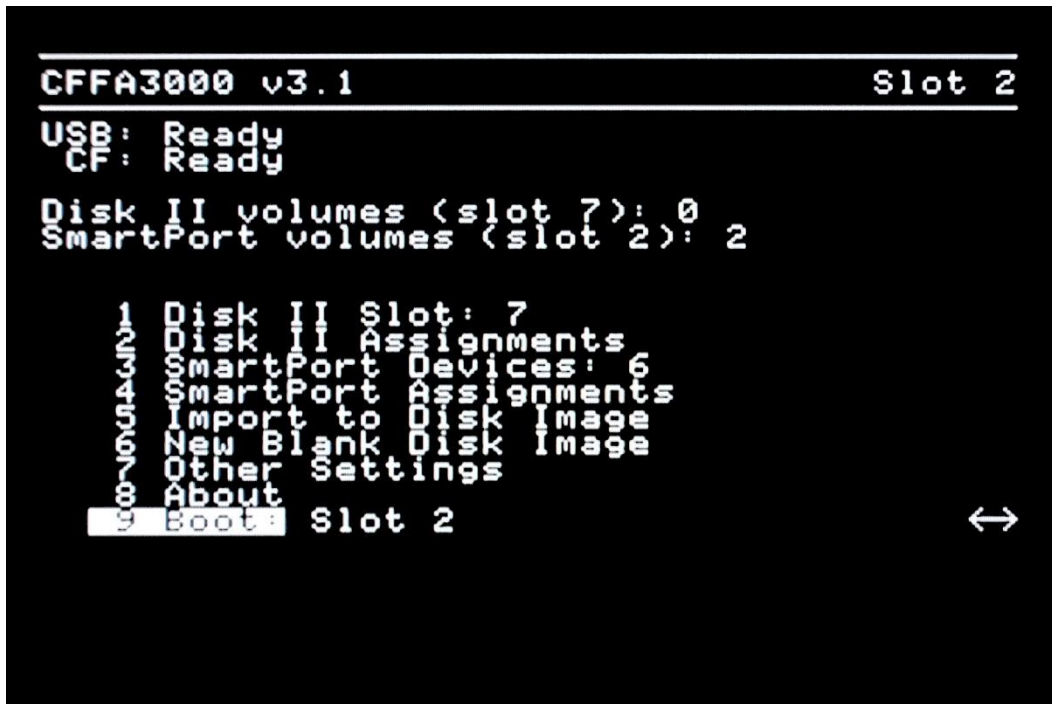


Figure 2.8 After assigning the HFS volume to the SmartPort, boot your system into the Apple IIGS GSOS desktop.

Once your Apple IIGS boots into the GSOS desktop, you will see your drives begin to appear on the desktop. GSOS will initially fail to recognize the HSF volume (Figure 2.9) because it has not been initialized. So we will initialize the drive!

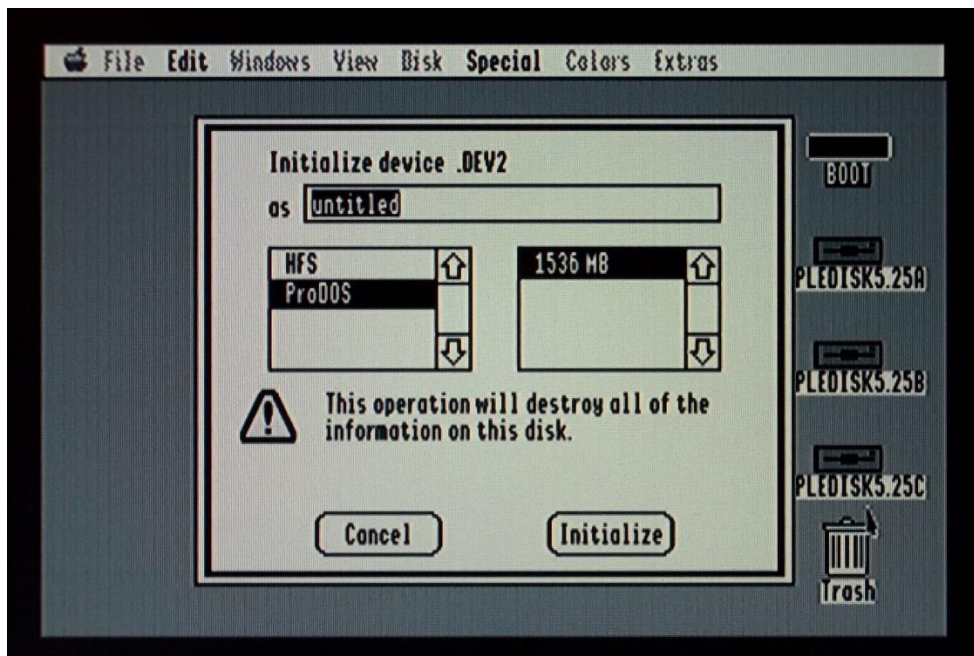


Figure 2.9 Booting into the GSOS desktop for the first time, you will need to initialize the HFS volume assigned to the CFFA3000 SmartPort.

First, select the name you wish to give your HFS volume. In this example, I called the device HFSdrive to remind me that this is **not** a regular ProDOS drive and that the contents will **only** be available under GSOS.

Next, select HFS in the left panel and make sure that the right panel contains the proper size for the HFS volume. If it doesn't, you may have selected the wrong file to copy to your CompactFlash!

Press INITIALIZE and GSOS will initialize the HFSdrive volume in a few seconds, and then you're done! You can open the drive (Figure 2.11) just as you would any other drive on the GSOS desktop.

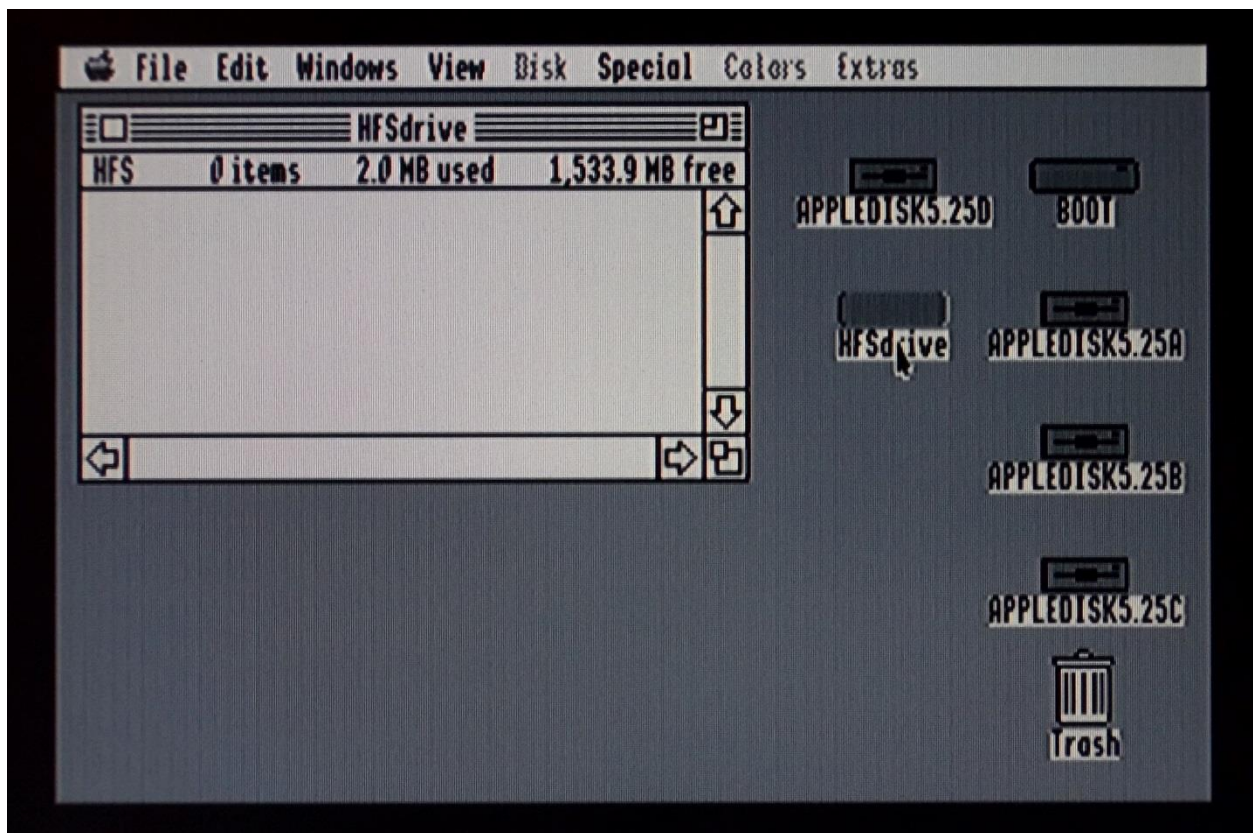


Figure 2.11 The HFS drive is now available on your GSOS desktop.

Part III

Using Your Virtual 5.25” Floppy Drives

The value of having a large volume HFS virtual hard drive is in storing large numbers of files and folders. Word processing files, database files, program files, etc., can be easily organized and stored in one location. But there is one serious caveat to understand: HFS volumes and their contents are NOT accessible to ProDOS (5.x and earlier) or DOS – ONLY to GSOS (ProDOS 6.0.1).

Running a Program from a Virtual 5.25” Floppy Disk Drive

In this exercise, we want to run Copy II Plus from a floppy disk image. A copy of the Copy II Plus floppy disk image is included in this tutorial package.

From your GSOS desktop, press Control-Open Apple-Escape to access the Desktop Accessories menu and select CFFA3000. From the CFFA3000 menu, select 2 Disk II Assignments (Figure 3.1).

Notice that in the USB contents panel (left side) there is a file named COPY2PLS.DSK. This is a disk image of the Copy II Plus program 5.25” floppy disk. We are going to assign this file to the virtual Disk II S7, D1 device.

Highlight COPY2PLS.DSK (Figure 3.2) and the press “1” to assign it to Disk II S7, D1 (Figure 3.3). Your screen will now look like Figure 3.4.

Exit the CFFA3000 menu and return back to your GSOS desktop.



Figure 3.1 The Disk II Assignments screen.



Figure 3.2 Select COPY2PLS.DSK in the source panel.

```
CFFA3000 v3.1                               Slot 2
USB: NO NAME
Items:
ANMODIFY.DSK
COPY2PLS.DSK
DOS33.DSK
EARTHLFE.DSK
EXECSPFL.DSK
Prodos203.dsk
TESTKB1.DSK
TIMBUKTU.DSK

== Disk II S7,D1 ==

== Disk II S7,D2 ==

Press '1' or '2' to assign to a drive.
```

Figure 3.3. Select “1” to assign COPY2PLS.DSK to Disk II S7, D1.

```
CFFA3000 v3.1                               Slot 2
USB: NO NAME
Items:
ANMODIFY.DSK
COPY2PLS.DSK
DOS33.DSK
EARTHLFE.DSK
EXECSPFL.DSK
Prodos203.dsk
TESTKB1.DSK
TIMBUKTU.DSK

== Disk II S7,D1 ==
u> COPY2PLS.DSK

== Disk II S7,D2 ==

COPY2PLS.DSK
```

Figure 3.4. COPY2PLS.DSK is now assigned to Disk II S7,D1.

On your GSOS desktop, double click on the APPLEDISK5.25A (which is the S7,D1 virtual floppy drive) and you will see COPYIPLUS appear on your desktop (Figure 3.5). This is the “disk” that is in your virtual 5.25 floppy drive.

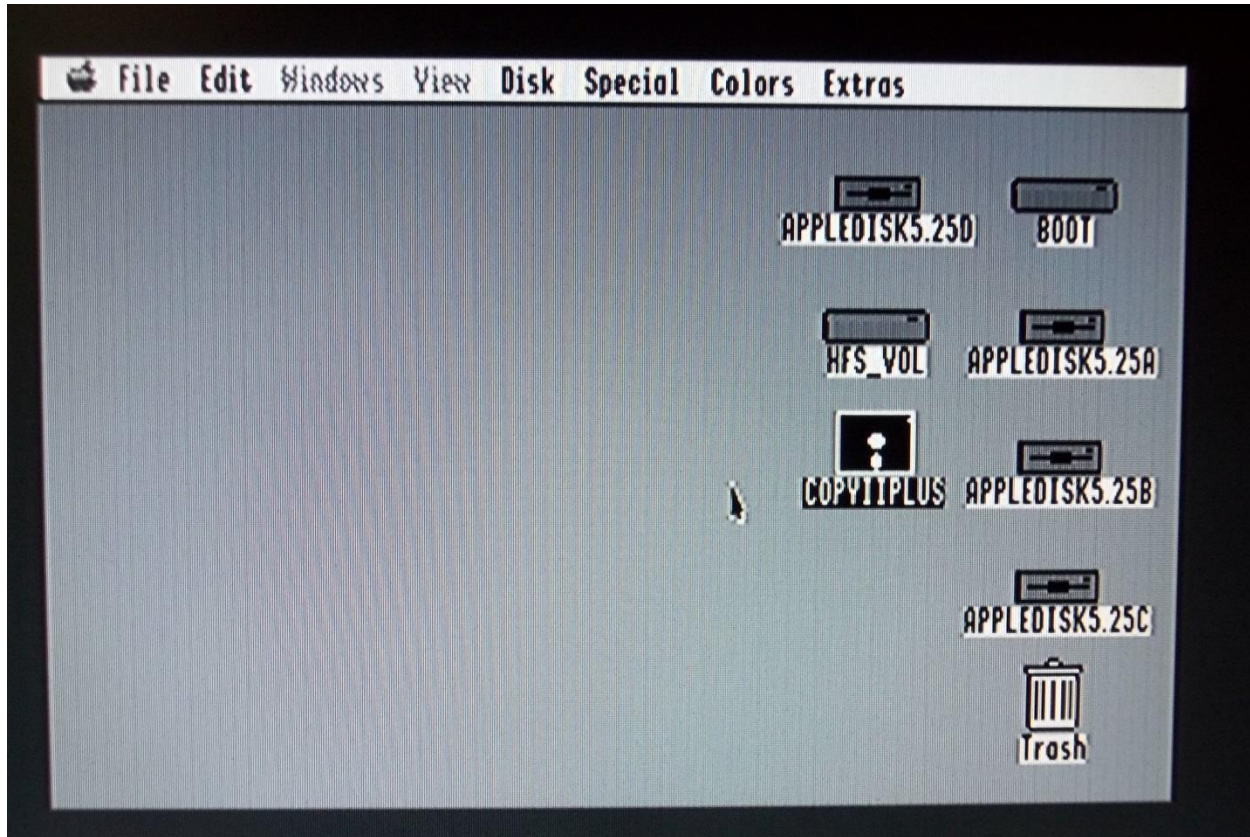


Figure 3.5 The GSOS desktop showing the COPYIPLUS disk that resides in the APPLEDISK5.25A virtual floppy drive.

If you double click on the COPYIPLUS, it will open the disk to display the disk contents (Figure 3.6).

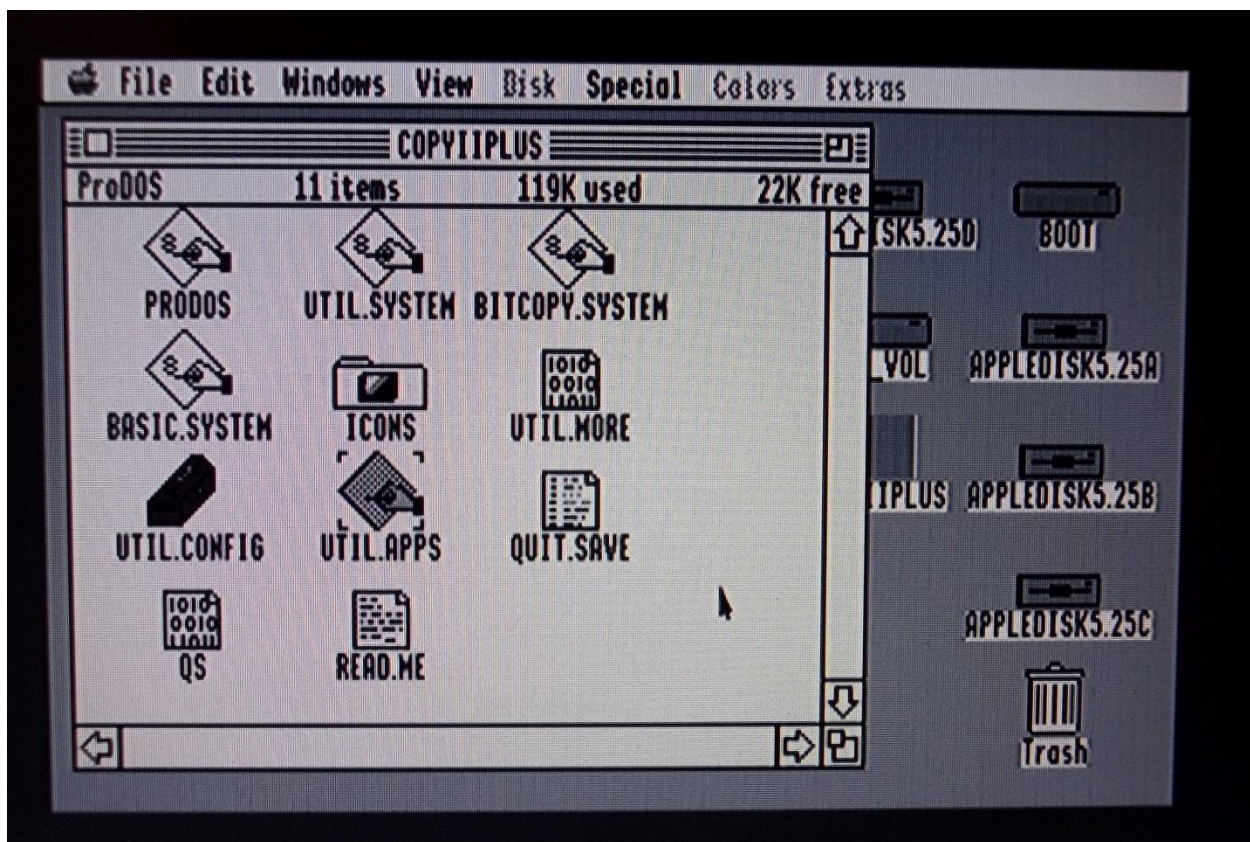


Figure 3.6 Contents of the COPYIIPLUS disk in the virtual 5.25 drive.

Double-click on the PRODOS icon in the COPYIIPLUS window and you will see that the disk is booted into ProDOS (Figure 3.7) and then into the Copy II Plus program (Figure 3.8).

It is important to realize that you have booted a ProDOS 8 disk and so you have left the GSOS environment. As such, the virtual hard drive is no longer available to ProDOS 8 or Copy II Plus (or any other program you might run). As a result of being in ProDOS 8 at this point, when you exit Copy II Plus (Figure 3.9) and select [Q] to Quit to ProDOS, it will **not** return you to the GSOS desktop. Rather, you will be left in ProDOS 8 at the command prompt. Try it.

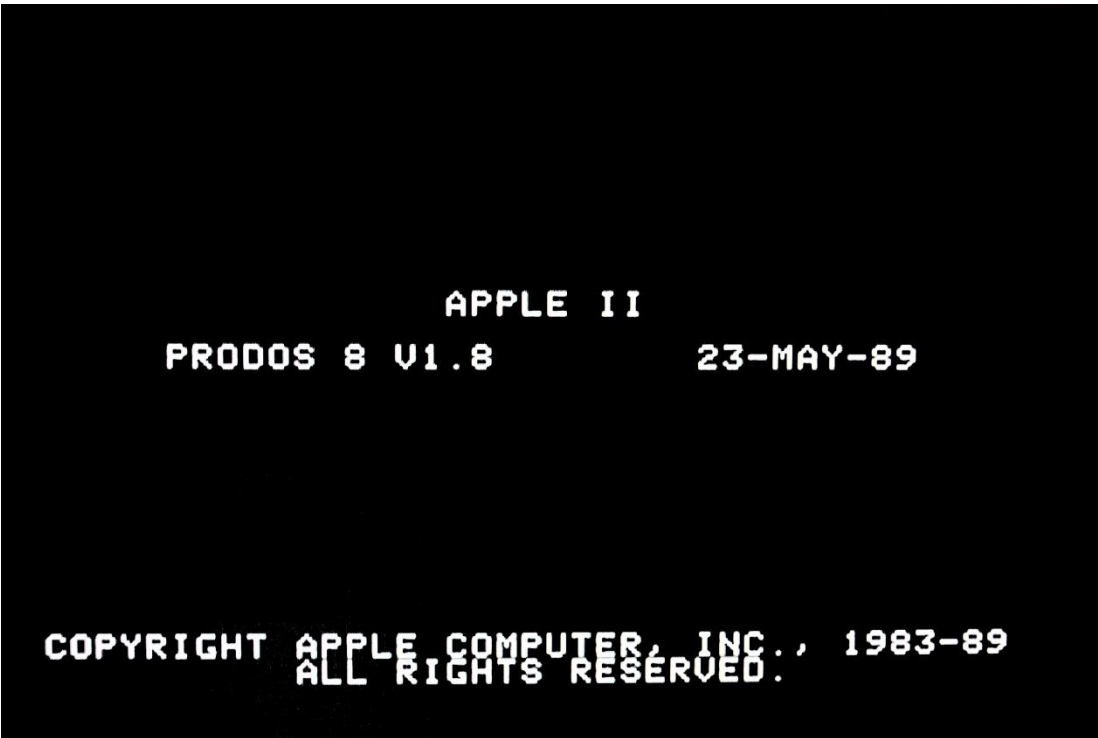


Figure 3.7 Booting the COPYIPLUS disk.

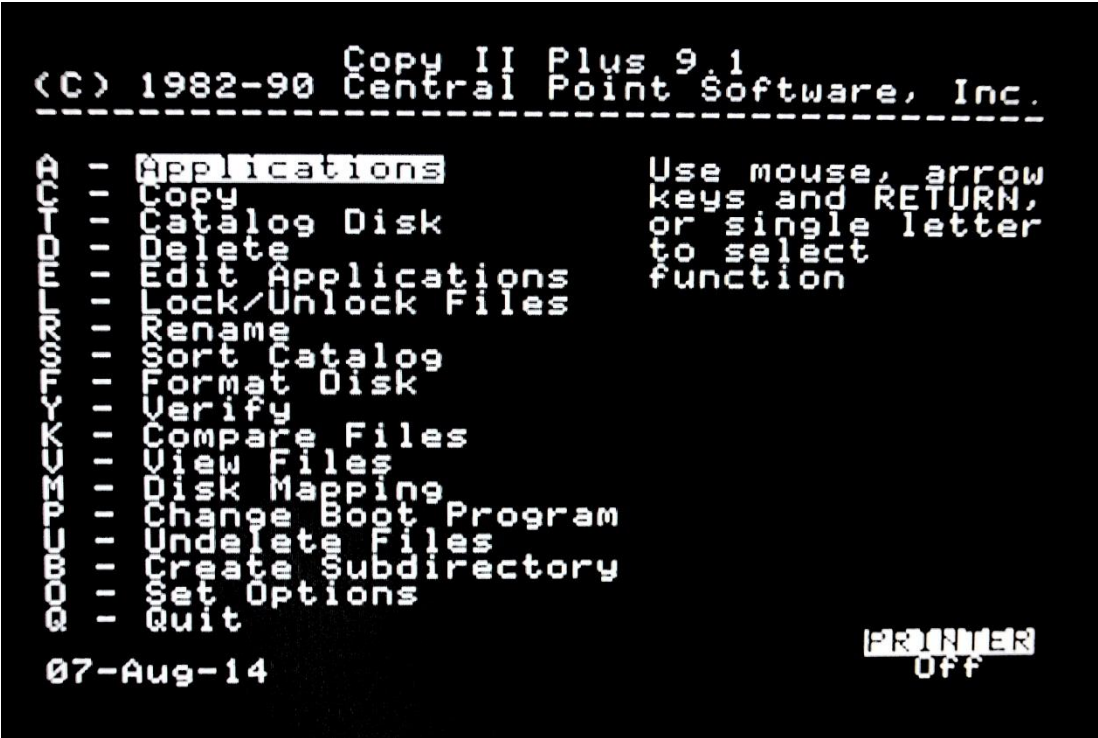


Figure 3.8 Copy II Plus launched from the virtual 5.25 floppy of the CFFA3000.

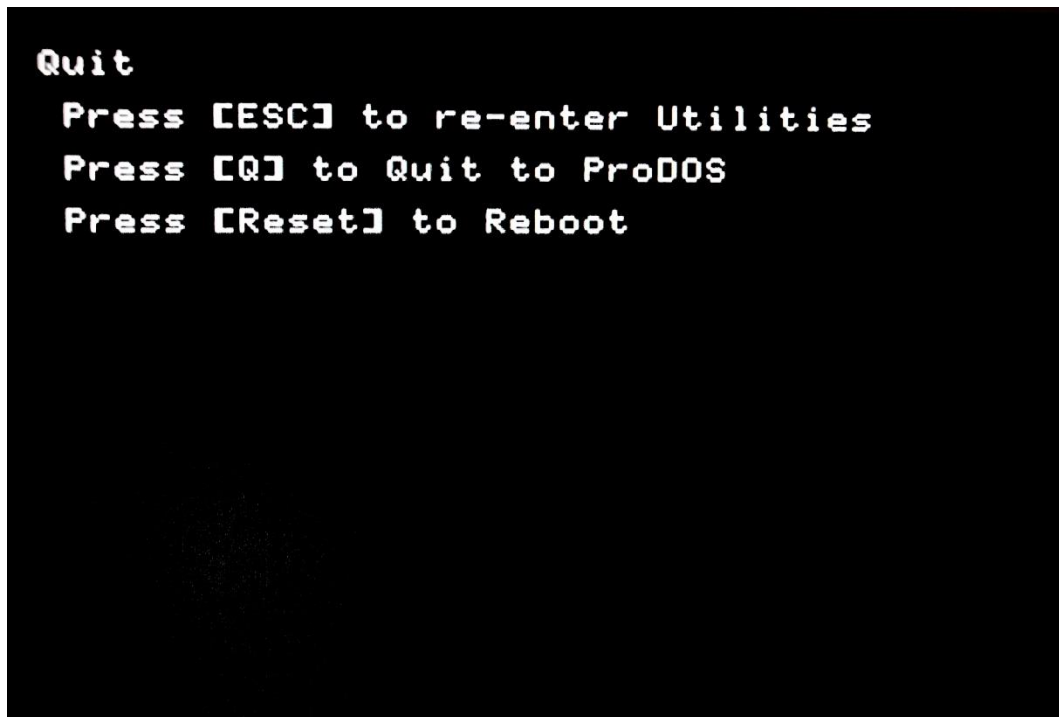


Figure 3.9 Exiting Copy II Plus.

Reboot your system to the GSOS desktop. Open your virtual hard drive by double-clicking on it. Create a new folder called COPYIIPLUS.

Next, open the Copy II Plus in the APPLEDISK5.25A device. Select all of the files in the COPYIIPLUS floppy drive and copy them to the CopyIIPlus folder on the virtual hard drive (Figure 3.10). Once all of the files have been copied, close the COPYIIPLUS drive window.

Open the CopyIIPlus folder on the virtual hard drive (Figure 3.11).

Double click on the UTILSYSTEM file to run Copy II Plus. You will get the error message shown in Figure 3.12. ProDOS programs can not run directly from the virtual hard drive of GSOS because that very large volume is not a ProDOS volume but rather an HFS volume, which is not recognized by ProDOS 8. Copy II Plus runs in a ProDOS 8 environment, and since ProDOS 8 does not “see” HFS volumes, the error is generated.

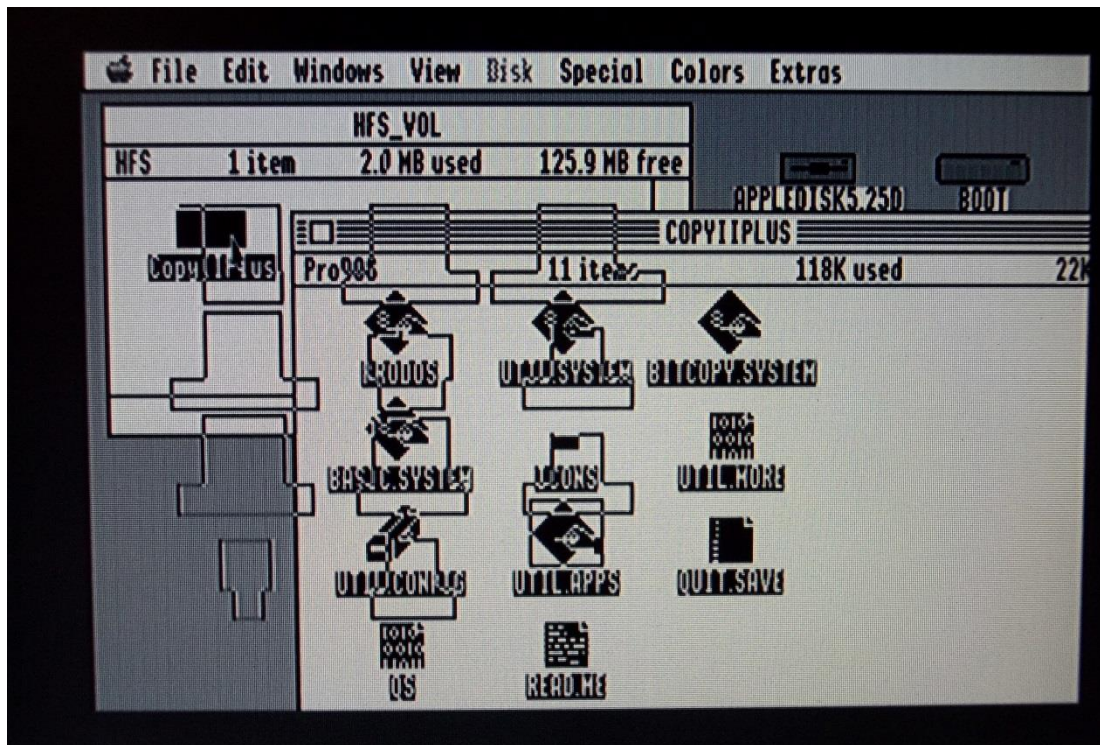


Figure 3.10 Copy all of the files from the 5.25 drive to the CopyIIPlus folder on the virtual hard drive.

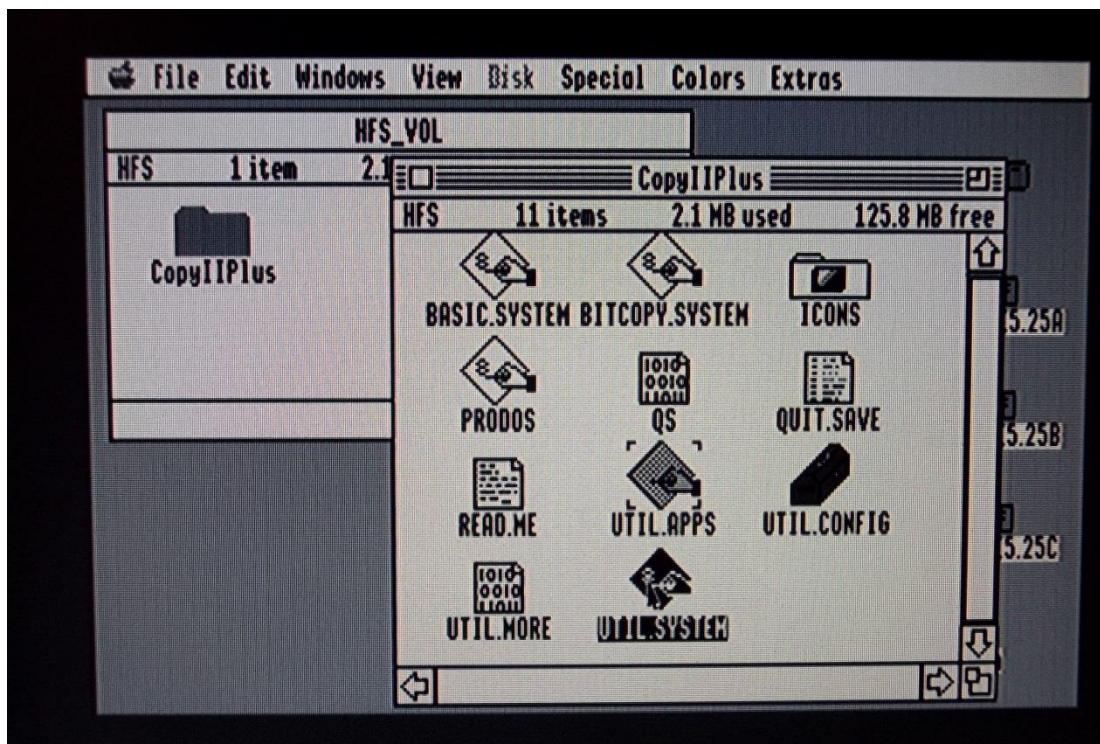


Figure 3.11 Copy II Plus files in the CopyIIPlus folder on the hard drive.

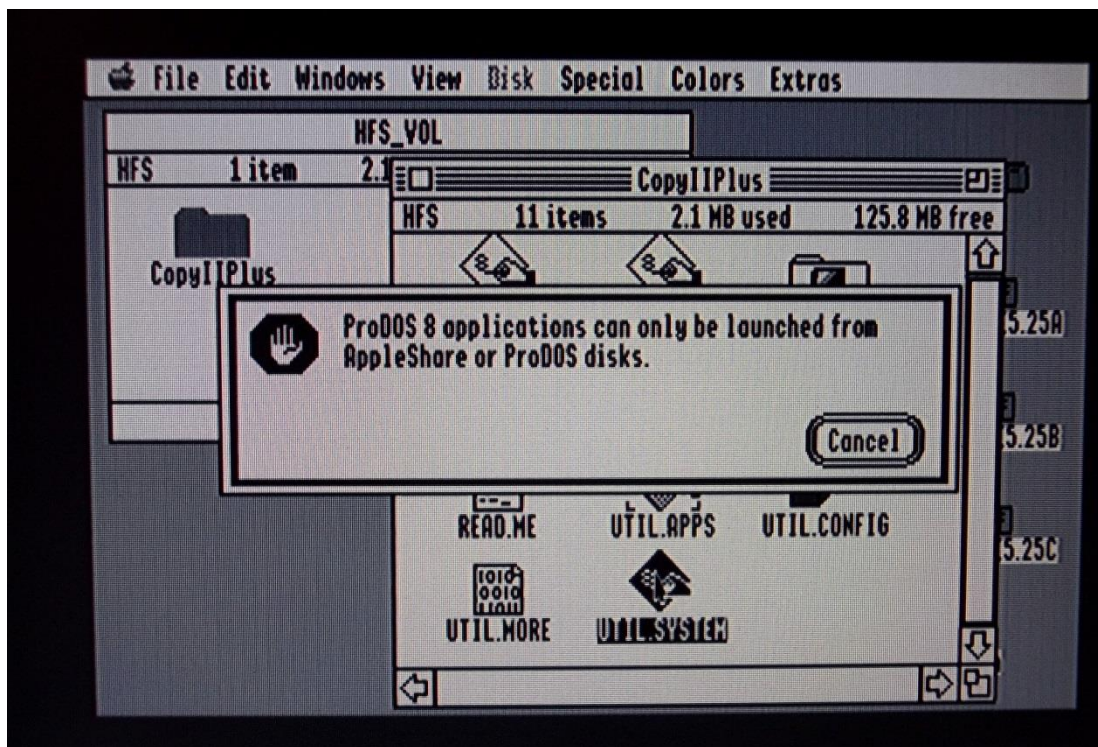


Figure 3.12 Error message generated by trying to run a ProDOS program off the virtual hard drive on the GSOS desktop.

If you want to run Copy II Plus from a hard drive, it must be a ProDOS volume. The BOOT disk from which we run GSOS is a ProDOS volume and so we can create a CopyIIPlus folder on our BOOT volume, copy all of the files from the COPYIIPPLUS 5.25 virtual floppy to the CopyIIPlus folder on BOOT, and then run Copy II Plus by double-clicking on the UTILSYSTEM in the folder. Rather than get an error message, you will see the screen shown in Figure 3.13 and then the Copy II Plus main menu (Figure 3.14).

When you Quit Copy II Plus and select [Q], rather than go to a ProDOS 8 command prompt, you are returned to the GSOS desktop!

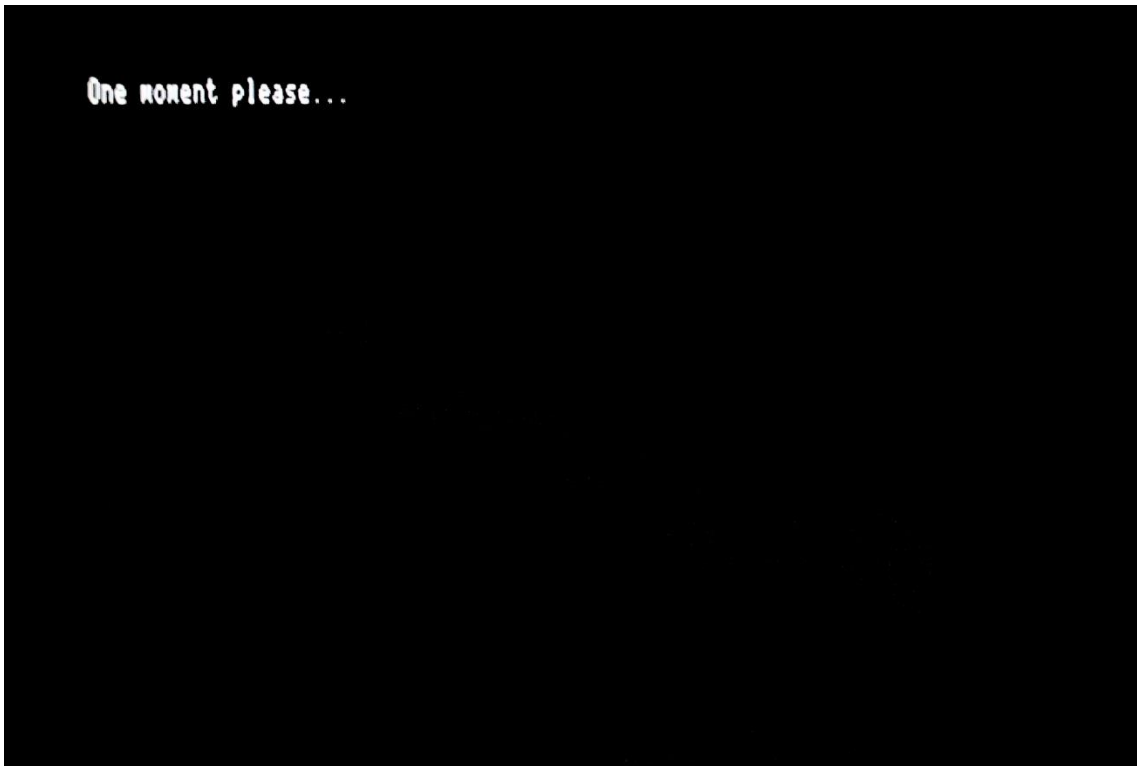


Figure 3.13 Running Copy II Plus from the BOOT drive.

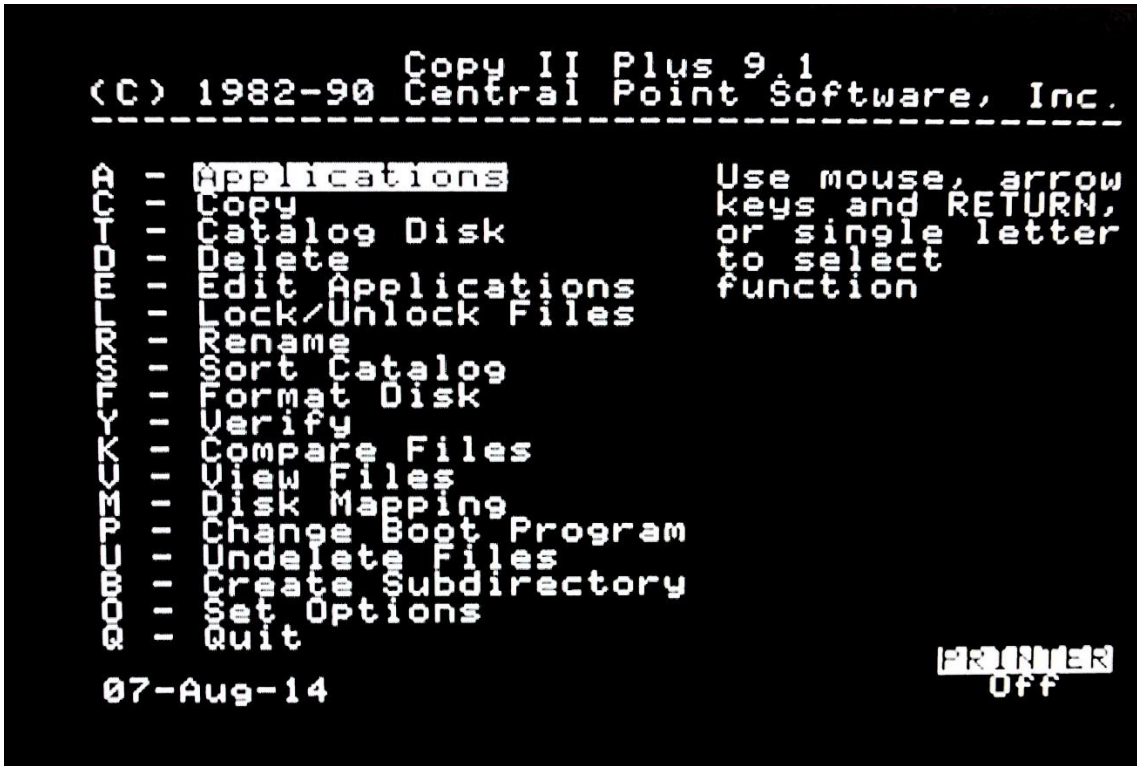


Figure 3.14 The Copy II Plus main menu.

An Alternative

By now, you fully appreciate that you can use the CFFA3000 menu to assign disk images (.DSK or .PO files) to the CFFA3000's virtual 5.25 floppy drives and then run them directly as if they were physical disks. This is especially useful for DOS-based games.

If you use your IIGS to run actual ProDOS programs (applications), you can of course load them onto any large (up to 32 MB) ProDOS volume and run them. Of course, your ProDOS volume is limited in size and thus limited to how many applications you can have residing on that volume at any given time.

What I do is this: I have my applications in folders stored on the large HFS volume. Using the Copy II Plus as an example, I have a folder on my HFS volume called COPYIIPLUS (Figure 4.1) that contains all of the files from the Copy II Plus program disk sans PRODOS and BASIC.SYSTEM.



Figure 4.1. Copy II Plus stored on the HFS volume.

Whenever I want to use Copy II Plus, I simply drag-&-drop copy the COPYIPLUS folder from my HFS volume to my GSOS BOOT volume (Figure 4.2) and then run it from that location (Figure 4.3).

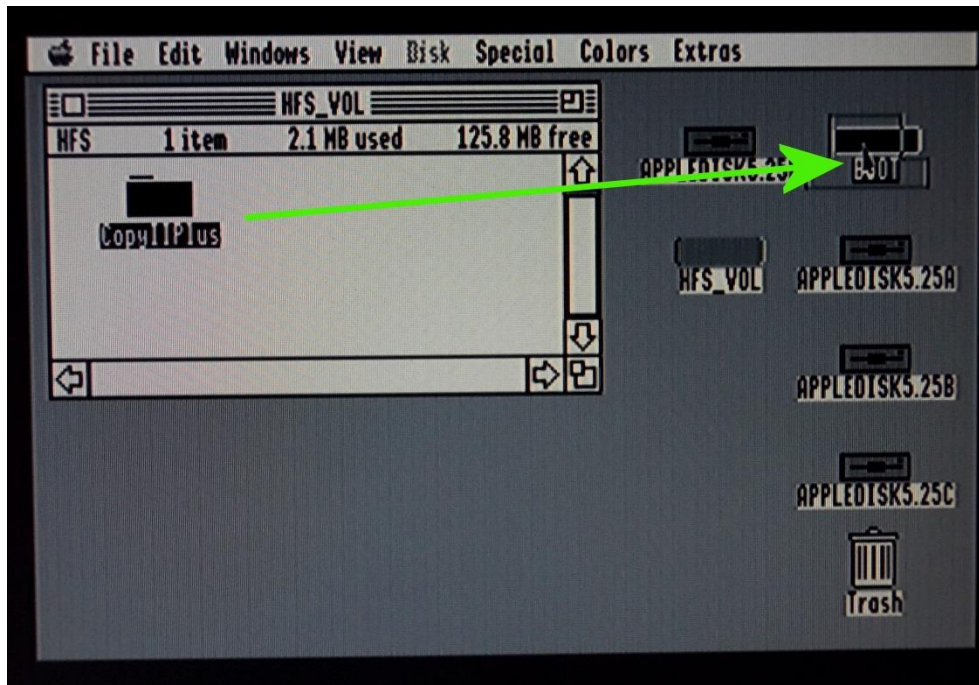


Figure 4.2 Copying the application folder to the BOOT volume via drag-&-drop.

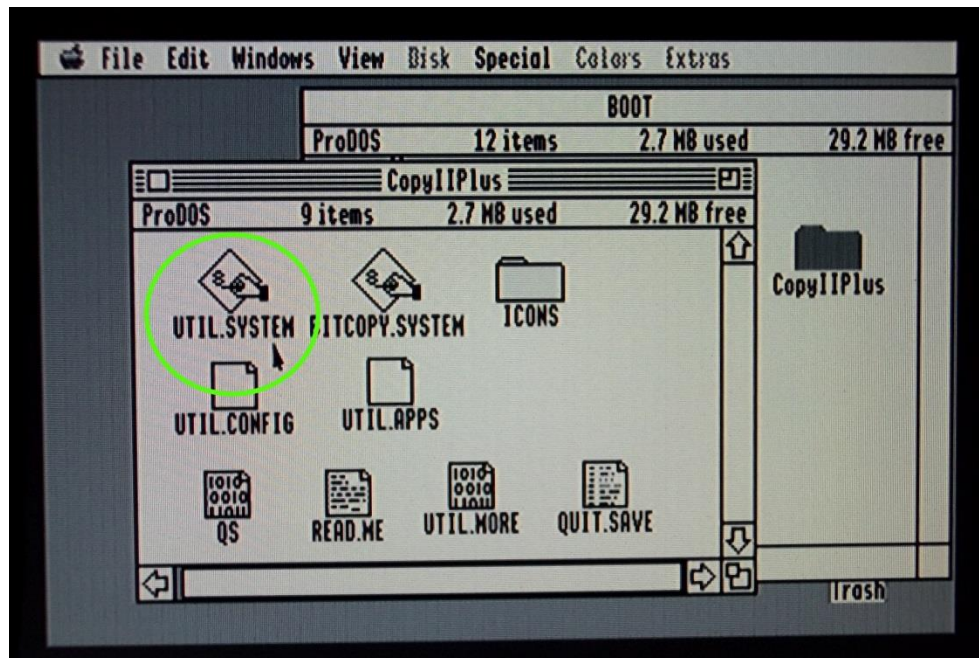


Figure 4.3. Running the program from the BOOT volume folder.

I find this method is faster and also returns me to the GSOS desktop when I am done. Compare this to accessing the Desktop Accessories menu, selecting the CFFA3000 menu, setting up the CFFA3000 virtual floppy to run Copy II Plus, exiting out of the CFFA3000 menu, exiting out of the Desktop Accessories menu, running Copy II Plus from the virtual 5.25 floppy drive, exiting and having to reboot the computer into GSOS.

Part IV

Hard Drives – The More the Merrier!

I find it nice to have a single large solid state hard drive on my IIGS but there are some drawbacks, the greatest being that an HFS volume is available ONLY to GSOS, not to earlier versions of ProDOS. If you are storing a large number of data files to use with GSOS versions of your word processor or database program, an HFS volume is quite handy. If, on the other hand, you have data files for ProDOS-based software, you need to have those programs' files stored on ProDOS volumes.

There is absolutely no reason why you can not have your CompactFlash card formatted for both types of hard drives simultaneously.

In this exercise, I will place one HFS volume of 1.5 GB in size on my GSOS desktop and six (6) 32 MB ProDOS volumes on the desktop as well. Easy-peasy!

First, starting with a blank 2 GB CompactFlash card, copy the CD file HD_32MB to your CompactFlash card and rename it Hardo1. Place a second copy of HD_32MB and rename it Hardo2. Continuing to copy and rename the files until you have Hardo1 through Hardo6 on your CompactFlash card. Next, copy the CD file HFS_VOL15GB to your CompactFlash card and rename it HFSdrive. Install the CompactFlash into your CFFA3000 and boot your system.

From the CFFA3000 main menu, the first thing we need to do is to increase the number of SmartPort devices (Figure 4.1). You can have a total of 16

SmartPort devices. Our GSOSboot takes one SmartPort device and we are adding 6 ProDOS and 1 HFS volumes for a total of 8 SmartPort devices. Using the left and right arrow keys, you can increase the number of available SmartPort Devices to 8 or more (I did 10 on my system).

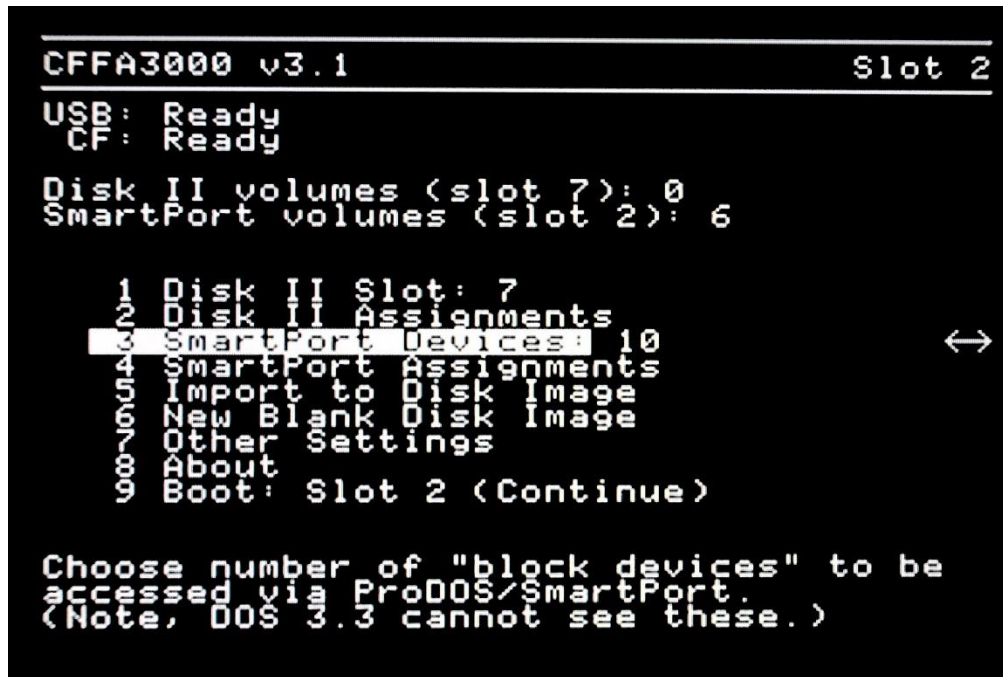


Figure 4.1 Increasing the number of SmartPort devices available for assignment.

After increasing the number of SmartPort Devices, select menu option 4 SmartPort Assignments (Figure 4.2). If the left panel is displaying the contents of the USB drive, press SPACE once to toggle to the contents of the CompactFlash drive.

Highlight Hardo1.po and press RETURN to assign it, down arrow key to Hardo2.po and press RETURN to assign it, and continue to assign all of the files in the left panel. When done, your screen should look like Figure 4.3.

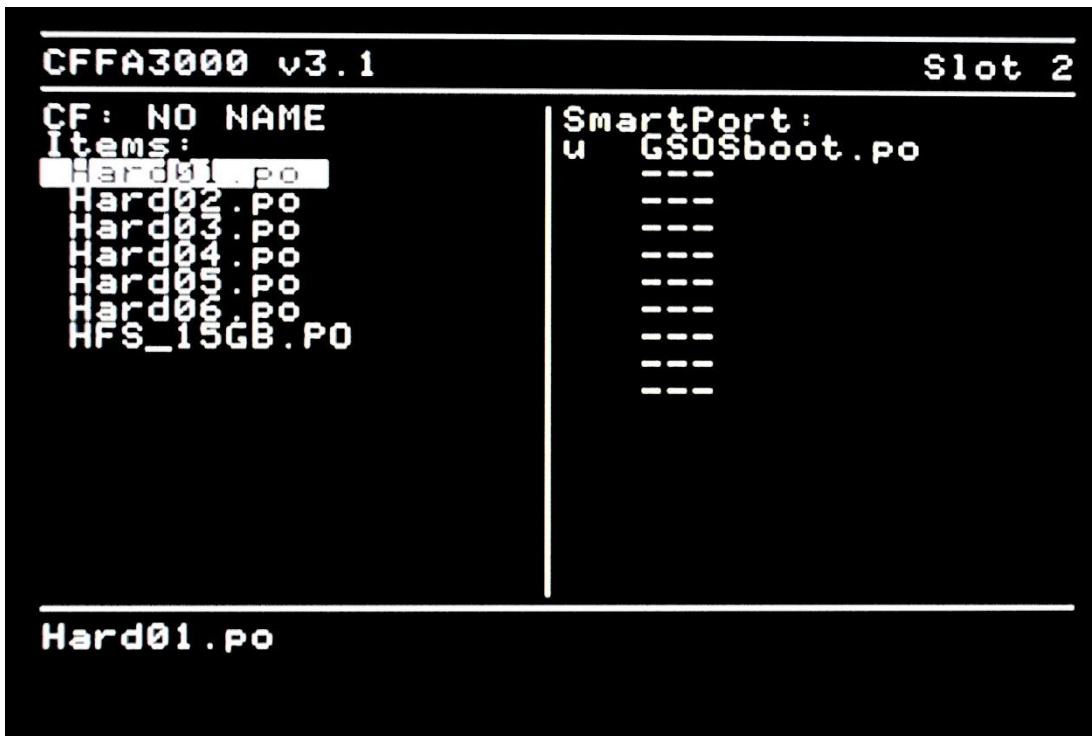


Figure 4.2 The SmartPort Assignments screen.



Figure 4.3 All hard drives have been assigned to SmartPorts.

Exit out of the SmartPort Assignments window, select 9 and boot from your CFFA3000 card in slot 2.

Your system will continue to boot into GSOS and once on the desktop, you will get the window shown in Figure 4.4 below for the first uninitialized 32 MB hard drive.

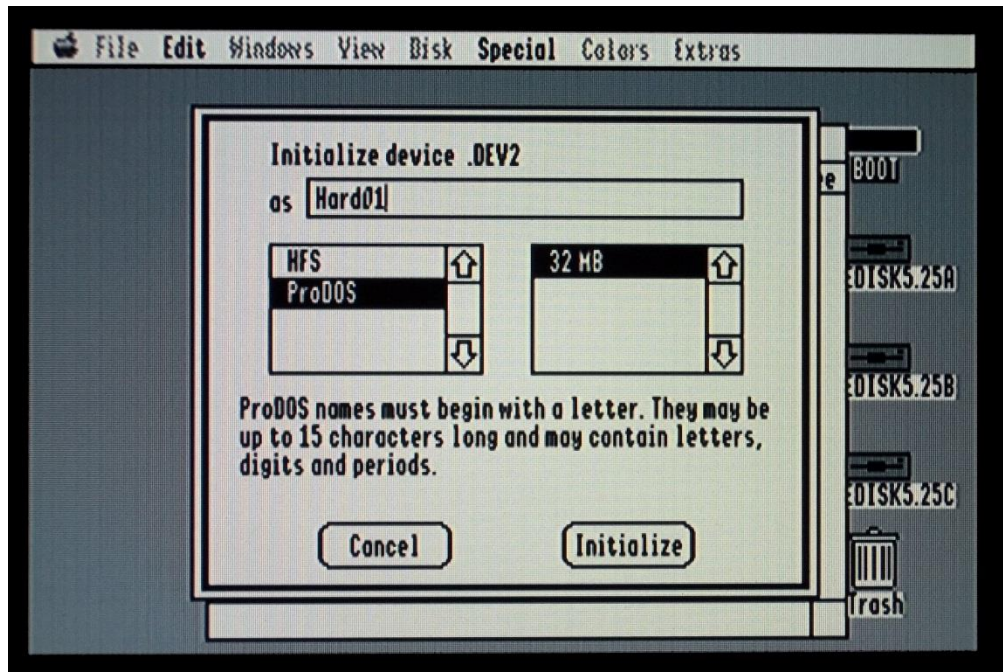


Figure 4.4. Initializing each of the newly-assigned hard drive volumes.

For each of the newly-assigned volumes, you will have to assign a name (I used Hard01.. Hardo6) and click on the Initialize button. Note that the file size is 32 MB and that it is a ProDOS volume. After you have initialized all size of your ProDOS hard drive volumes, you will then get the initialize screen for the HFS volume (Figure 4.5).

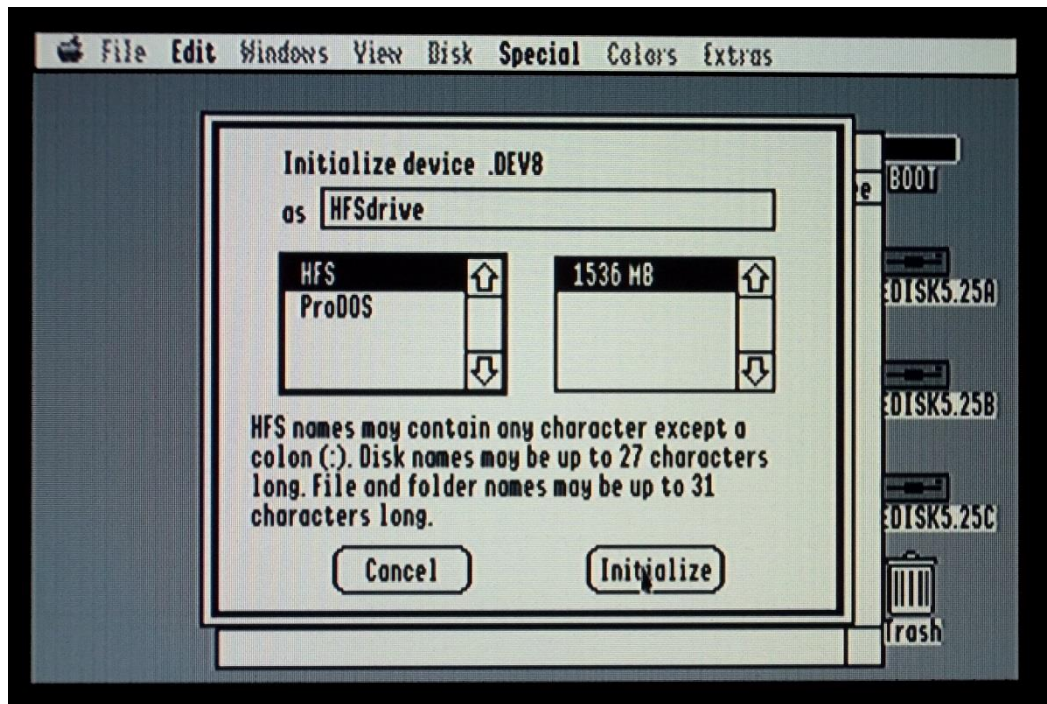


Figure 4.5. The Initialize screen for the HFS volume.

There are a couple of things to note. Make sure that HFS is selected, not ProDOS, and that the volume size is appropriate (in this example, it is 1.5 GB). Give it a name – again, I used HFSdrive so that I am always aware that this is not a standard ProDOS drive – and click on Initialize.

Once you have initialized all 7 of your newly-created hard drive volumes, your desktop should look like that shown in Figure 4.6.

Of course, there is nothing forcing you to have all of these “hard drive” volumes on your CompactFlash card. You can have some or all of them on the USB thumbdrive. I prefer to have my hard drive volumes all on the CompactFlash card, which remains in the IIGS, and simply use my USB thumbdrive to transport files back and forth between my IIGS and my PC, but to each his own.

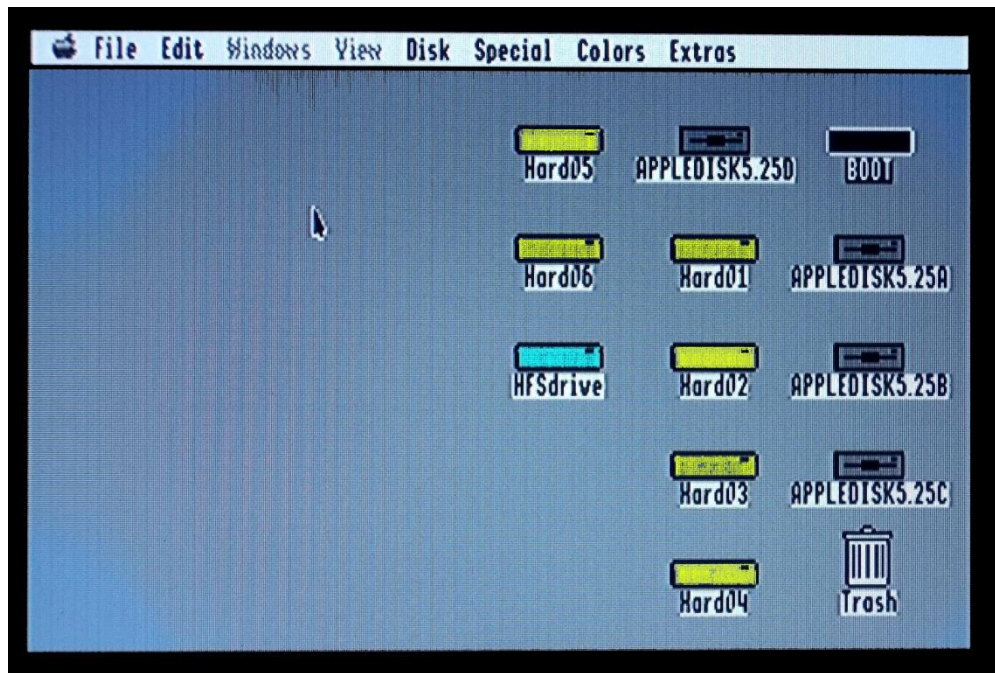


Figure 4.6 The GSOS desktop with all 6 of the ProDOS 32 MB hard drive volumes (highlighted in yellow) and the 1.5 GB HFSdrive volume (highlighted in blue).

If you purchased a CFFA3000 GSOS Installation Kit from me with a 1.5 GB HFS volume, you actually have plenty of space – roughly half a GB – free on the CompactFlash card, which is actually a 2 GB CompactFlash card. That card will hold several additional hard drive volumes, so if you wish to replicate this last exercise, you have the space to do so!

Final Thoughts

To each his own.

The Apple II family of computers was founded on the basic tenet that flexibility is supreme and to each his own. What made the Apple II family of computers so popular was that each individual could make the machine his/her own, and there was no “one size fits all”. That came later with the Mac, which forced conformity. The CFFA3000 has a lot to offer and is flexible enough for most folks to do what they want to do how they want to do it. Do not fall into the mindset of doing away with the hard drive paradigm if that paradigm works for you. Running a game from floppy disk is not the evil that some folks would have you believe, but if you want to run a game from an archival .DSK or .PO file, that’s great, too!

If you find any errors in this document, please let me know asap! I continue to learn more and more about the CFFA3000 and its functions and quirks every time I use it (as probably you do, too!).

Acknowledgements

I wish to offer a very large and grateful, “Thank you” to Rich Dreher for his outstanding contribution to the Apple II world with the CFFA3000. You may visit his site at:

<http://dreher.net/?s=projects/CFforAppleII&c=projects/CFforAppleII/main.php>

Rich runs a Forum dedicated to the CFFA3000 on his site, and it’s a good first resource for getting questions answered.

This document, along with blank disk images for the CFFA3000, are available at www.Apple2Online.com a free public library of all things Apple II-related. This document may be distributed freely providing the document is not changed and the meta-data are preserved.