

The Basilisk II build 142 Instruction Manual

for Win32 Systems, 95/98/Me/NT/2K/XP

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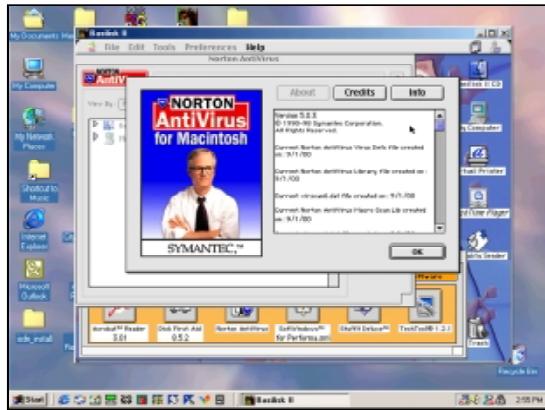
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Introduction

Getting to Know Basilisk II...

Figure i-1:

Basilisk II running Mac OS 8.1 and Norton AntiVirus 5.03 on Windows Me (Millennium Edition).



time, and become an expert on both systems (putting you that much farther ahead of your competition). Enter the emulator: strictly speaking, an emulator allows an operating system to run in a completely alien environment. For example, using an emulator, the Mac OS can run on Microsoft Windows.

Enter Basilisk II <<http://www.uni-mainz.de/~bauec002/B2Main.html>>, the open source 68K Macintosh emulator. Basilisk II allows the Mac OS to run on multiple platforms, including the Amiga OS, BeOS, Unix/Linux OSes, and the subject of this manual, Windows 95/98/Me/NT/2000. Using Basilisk II, you can run most Macintosh software written for 68K Macs, and can boot all versions of the Mac OS from System 7.0 clear up to Mac OS 8.1. This manual will help you explore the many applications of Basilisk II, from setup and installation of Mac OS 7.5.3 and Mac OS 8.1 to printing to getting onto the internet. This manual will focus on the Windows 95, 98, Me,

must say that I have run into this brick wall all too often. Wouldn't it be advantageous to be able to run both Macintosh and Windows environments on one computer? This way, you could use both operating systems at one

NT, and 2000 version of Basilisk II, ported to the Windows operating system by Lauri Pesonen <<http://gamma.nic.fi/~lpesonen/BasiliskII/>>. This manual also assumes that you have a basic understanding of the Microsoft Windows environment (e.g., copying files, moving files, and using the mouse). And, of course, you'll need to have a computer capable of running Windows.

Minimum System Requirements

Microsoft Windows 95, 98, or Me

32mb RAM

Pentium Processor running at 166Mhz

100mb of Free Hard Disk Space

Recommended System

Microsoft Windows NT or 2000

128mb RAM

Pentium III processor running at or Greater Than

500Mhz

1GB of Free hard Disk Space

1:

Chapter Getting to Know Basilisk II...

Chapter Objectives:

- What Exactly Does Basilisk II Emulate?
- What Do All Those Gadgets Do?

Basilisk II is a Macintosh emulator, allowing Macintosh software to run on a PC equipped with Microsoft Windows. We've got that down pretty well. But, there are many different Macintosh models out there to choose from, and since the Macintosh has been around since 1984, which models does Basilisk II emulate? That's a good question. In a nutshell, Basilisk II will only emulate 68K based Macintosh computers, and will only use a 512K or 1MB ROM image taken from a real Macintosh. Now that's a real mouthful, and like our wonderful politicians, it says a lot but doesn't make much sense. So here is the rest of the story.

A Brief History Lesson...

When Apple Computer introduced the Macintosh line of computers in 1984, they based its design on the then super fast Motorola 68000 CPU running at a whopping 8Mhz. The computer needed a way to control basic input and output functions such as floppy disk access, low level Operating System (OS) functions, and the Macintosh startup chime. Apple opted to place much of this information on a Read Only Memory (ROM) chip. This way, most of this low level information would be available to the computer immediately on power up. The information stored on the Mac's ROM chip totaled about 64K in size. Since that fateful day in 1984, much has changed in the Mac's world. The ROM chips would later grow to 128K, 512K, then to 1MB, and even 4MB. The 68000 would be replaced by the 68020, then the 68030, and finally the 68040, all more advanced and faster processors that sprang from the original 68000. After the 68040, Apple opted to adopt a newer, more powerful processor called the PowerPC. Based

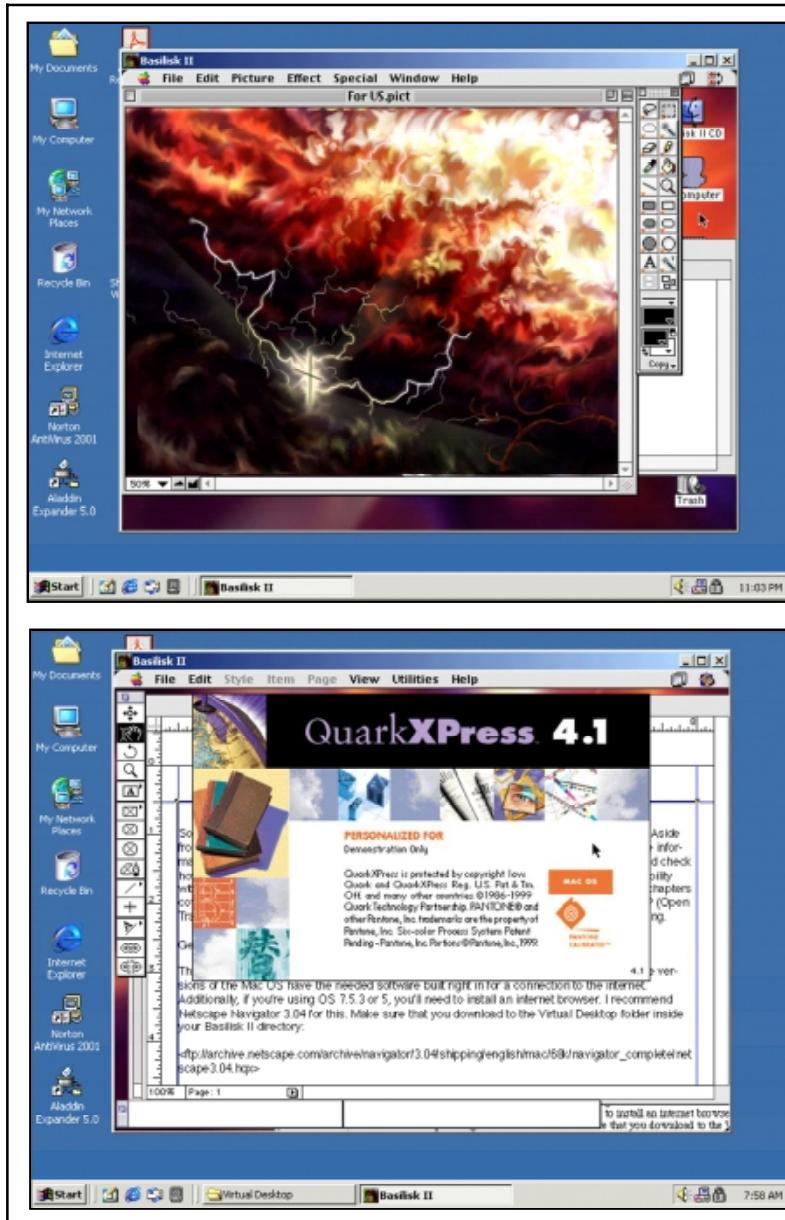


Figure 1-1a:

These illustrations show just some of the things you can do with Basilisk II. The top shows Graphic Converter, an image processing program. The bottom shows Quark XPress 4.1, demo version.

upon a completely different design than that of the older 68000 series of chips (also known as the 68K line of processors), the PowerPC was faster and included a reduced instruction set, making the chip simpler and therefore able to do certain tasks in less time. Apple had its problems migrating to this new chip design, simply because its then current operating system was designed to run on the 68K processors. After much work, Apple finally made the leap to a PowerPC-only version of its Mac OS starting with Mac OS version 8.5. The PowerPC made leaps as well, and is currently in its fourth generation, dubbed the G4 (for “4th Generation”). Apple is now working on a completely new operating system dubbed “Mac OS X”, which will include many features that should have been in the Mac OS long ago such as preemptive multitasking (which helps multiple, running programs to behave with greater speed and stability vs. today’s Mac OS, similar to the Amiga 15 years ago) and memory protection, which helps prevent system wide crashes, something that die-hard Mac users are all too familiar with.

Where Does Basilisk II Fit Into the Picture?

While Basilisk II doesn’t emulate the latest and greatest Macintoshes based on the PowerPC chip, it does emulate the older 68K based models. The good news is that there is still plenty of Macintosh software that will run with 68K Macs, and therefore will probably run on Basilisk II. But most companies presently aren’t making much new software for the older 68K processors, and turning to PowerPC only applications. This is not good news for Basilisk II. Only time will tell if Basilisk II makes the jump to PowerPC emulation or not.

Of course, since Basilisk II does not emulate the newer PowerPC Macs, it can only use a limited variety of Macintosh ROMs chips. Recall that I stated earlier that Basilisk II needs a Mac ROM image in order to function. Presently, Basilisk II supports many 512K and 1MB ROM images (*For more information on obtaining a Macintosh ROM image, and which ROMs will work with Basilisk II, see Chapter 2 on page 47*).

Basilisk II, Inside and Out...

Basilisk II has many complex and powerful features, but it’s most appealing feature is that it’s free. Before we can start the second portion of this chapter, you’ll need to go out and grab yourself a copy of Basilisk II for Windows. It is available for download on Lauri Pesonen’s web site here:

<<http://gamma.nic.fi/~lpesonen/BasiliskII>>

Make sure that you download the most recent build in the Downloads section of Lauri's page.

Get the Info...

For more information on Christian Bauer, the author of Basilisk II, and Lauri Pesonen, author of the Windows port of Basilisk II check out these pages:

[<http://www.kearney.net/~mhoffman/basiliskII/bauer.html>](http://www.kearney.net/~mhoffman/basiliskII/bauer.html)
[<http://www.kearney.net/~mhoffman/basiliskII/pesonen.html>](http://www.kearney.net/~mhoffman/basiliskII/pesonen.html)

Once you have completed the download, unzip the archive using a decompression utility such as Aladdin Expander for Windows [<http://www.aladdinsys.com/expander/expander_win_login.html>](http://www.aladdinsys.com/expander/expander_win_login.html). It's best to keep all of the files in one location. For example, I keep all of these files in a folder named "Basilisk II".

Now, it's time to make sure that Basilisk II will work with your CD ROM drive on your Windows machine. In order for this to work properly, you need to install a small file on your computer that Basilisk II uses to gain access to the CD.

- 1. Open the directory where you just saved all of your Basilisk II files and navigate to the CD-ROM Drivers folder.**
- 2. Inside this folder, you will find two more folders: one for Windows 9x (labeled 9x) and one for Windows NT 4 and Windows 2000 (labeled NT4 and Win2k).**

Of course, you will need to know what version of Windows you are running in order to make sure that you choose the right driver folder. If you are using Windows 95, 98, or Windows Me, you'll want to open the folder labeled 9x. If you're using Windows NT 4.0 or Windows 2000, you'll want to open the folder labeled NT4 and Win2k.

- 1. If you're using Windows 95, 98, or Me, copy the CDENABLE.vxd file to your c:\windows\system folder.**
- 2. If you're using Windows NT 4.0 or Windows 2000, copy the cdenable.sys file to your c:\WinNT\System32\drivers folder.**

This will get your computer ready to read real Macintosh CD ROM discs and even *boot* from one.

Now, let's get acquainted with the various options of Basilisk II. Remember that you can always refer to Figures 1-1 through 1-21 to

see where all of these options are located on the Basilisk II setup screen, also called the Basilisk II GUI (which stands for Graphical User Interface). You can launch the Basilisk II GUI by double clicking the BasiliskIIGUI icon in your Basilisk II folder. The icon may be labeled BasiliskIIGUI.exe, depending on how your computer is set up to view filenames. Upon launching the GUI, you should see something similar to the screen shown in Figure 1-1 below. Notice that there are a boat load of tabs across the top of the GUI. Don't worry. We're going to go through them all, one at a time. By the time we're finished, you'll wonder why it all seemed so scary.

Get the Info...

Did you know that before the Basilisk II GUI was created, all of the options in Basilisk II had to be set up manually in a text editor? Here's to progress!

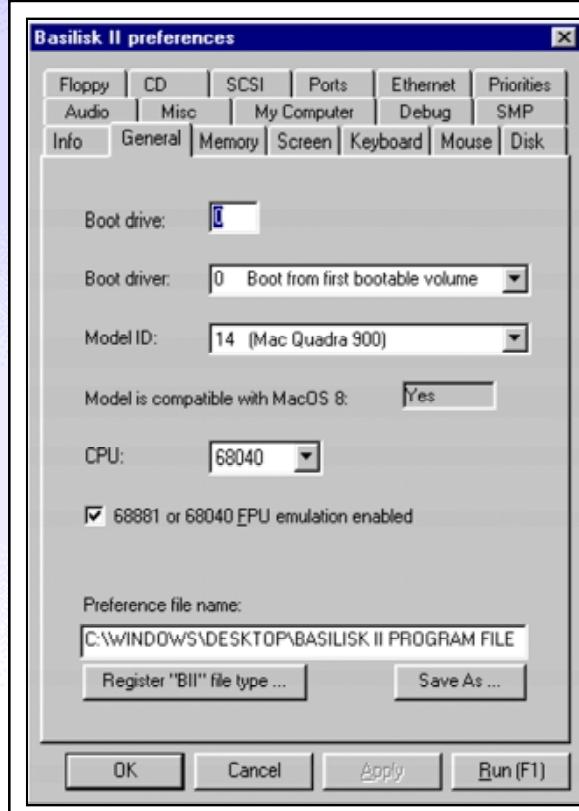
Since the Info tab contains the credit and copyright information, we'll skip right to the second tab, marked General.

General Options...

The General tab contains much of the information needed to tell Basilisk II how to boot off a Macintosh disk and sets up the type of Macintosh that you want to emulate.

Figure 1-1:

The Basilisk II General Preferences tab. This tab allows you to set up the Macintosh model ID and processor type.



❑ Boot Drive

This one's a mystery. It was probably added in the early stages of Basilisk II development, and doesn't seem to affect Basilisk II at all. This one can be left alone.

❑ Boot Driver

The Boot Driver option tells Basilisk II what drive it needs to boot from. The default is set to 0 - Boot from first bootable volume. This tells Basilisk to check all disk drives connected to the emulated Macintosh, searching for a

Macintosh disk that will boot the emulator. Macintosh disks are bootable if and only if they have a valid System Folder. This folder contains important data that the Macintosh looks for when it tries to boot. This information may be on a CD ROM, a floppy disk, or a hard disk. Using the default option, Basilisk II will boot from the first valid disk it finds.

The second option available on Boot Driver is “-62 Boot from the emulated CD-ROM”. This forces Basilisk II to boot from a valid Macintosh bootable CD. Every version of the Mac OS shipped on CD has been bootable. No matter what other disks are attached to Basilisk II (bootable or not), selecting this option forces a CD boot.

☒ Model ID

The Model ID option tells Basilisk II what model of Macintosh to emulate. This may depend on the type of ROM you are using. Different model IDs are required to boot different versions of the Mac OS. For example, to boot an older Mac OS such as System 7.0, you need to choose an older Model ID, such as the Mac IIIfx (circa 1990). Trying to boot System 7.0 on a newer Model ID, such as the Macintosh Quadra, results in an error message. Conversely, trying to boot Mac OS 8.1 on a Mac LC III, an older model, results in a different error message. If your goal is to run Mac OS 8.1, the Basilisk II GUI includes an indicator telling you if the model you’ve chosen will run that OS. This is shown in the Model is compatible with Mac OS 8 box, just beneath the Model ID box. For the most part, models 5 or 14 yield the best results.

☒ CPU

The CPU (Central Processing Unit) is the main “brain” of any computer. It controls most high-level functions, and without it, any computer, Macintosh or otherwise, would be unable to function. Basilisk II emulates three of the 68K processors that older Macs were based on: the Motorola 68020, 68030, and the most powerful of the three, the 68040. From testing, I recommend using the 68040 setting.

☒ 68881 or 68040 FPU emulation enabled

The 68020 and 030 could only do one kind of math: Integer math. This means that these chips were “dumb” when it came to multiplication and division. For example, when trying to divide 100 by 10, we all remember that the decimal point gets moved over one place to the left. So instead of 100, we have 10.0, or 10. In order for the 68020 or 030 to do that same problem by themselves, they would have to do things this way: $100-10-10-10-10-10-10-10-10=10$. Notice how this method involves no division? That’s right; in order to achieve the same answer, the 68020 or 030 has to use either addition or subtraction, which slows certain calculations down. It’s much easier to just move the decimal point. Since the decimal point moves, or floats, in this example, wouldn’t it be nice to give the 020 or 030 a helper that

could do multiplication and division for it? That's where the Floating Point Unit (FPU) comes into play. Some Macs came with an FPU attached to the computer's motherboard to help speed things up. The 68040 was first introduced with an integrated FPU, meaning that the FPU was included right on the chip itself, eliminating the need for a second "helper" FPU. Later, 68040 chips came out that had no FPU to reduce production costs. Where is all this going? Basilisk II emulates an FPU for applications that may need it. It may also give you a speedier Mac in certain circumstances. Some 512K Mac ROMs require you to have this FPU turned on in order to boot.

Preference File Name

Basilisk II allows for multiple configurations of different Macintoshes. Using the Preference File Name option, you can save these different configurations in single files called Preference Files. For example, if I create a configuration of a Mac IIfx that I want to boot Mac OS 7.0, I can save that as a preference file by clicking the "Save As ..." button. I could call this Mac IIfx - OS7 Prefs.bii. I would then click the "Register BII file type ..." button. Now I'm free to create a new configuration that boots Mac OS 8.1 using the Quadra 950 Model ID. I could save this in the same way that I saved the previous configuration, except I would name it something different; perhaps Quadra 950 - OS81 Prefs.bii. I would again click the "Register BII file type ..." button. Now, as long as these two preference files stay put in the same directory where I created them, I can go to that directory and double click one or the other and Basilisk II will launch with all the settings that I created in either file. I can also right-click the preference file and click the option Edit in Basilisk II GUI and the Basilisk II GUI automatically pops up so that I can make changes.

Get the Info...

Why am I talking about processors made by Motorola when in fact you know that your computer has an Intel Pentium or AMD Athlon processor inside? This is the magic of emulators. Basilisk II takes most of the "stuff" that is contained in a real 68020, 030, or 040, and mimics it in software. So in fact, your Pentium or Athlon is pretending to be a 68K chip. Pretty neat, huh?

Memory Options...

Moving on to the next tab, we find the memory options. Computers all require Random Access Memory (RAM) to operate. Basilisk II is no different. In order to work correctly, Basilisk II needs to have a block of your Windows computer's memory assigned to it. This takes us to the first option on the Memory tab.

RAM Size in Megabytes

This box defines how much of your PC's memory will be set aside

for the emulated Macintosh computer. This number varies, depending on which version of the Mac OS you plan on running on Basilisk II. Earlier system software, such as Mac OS 7.0, will require much less. You can probably get away with as little as 4MB RAM. If you're using Mac OS 8 or 8.1, you'll need to increase this substantially. I would recommend at least 32MB, and it never hurts to increase this to 48MB or more.

ROM File Path

The ROM File Path option tells Basilisk II where to find the Mac ROM file. Typically, you keep this file in your Basilisk II folder. For example, if your Basilisk II folder is located in your Program Files folder on your C: drive, then the path to the ROM file would be C:\Program Files\Basilisk II\ROM.

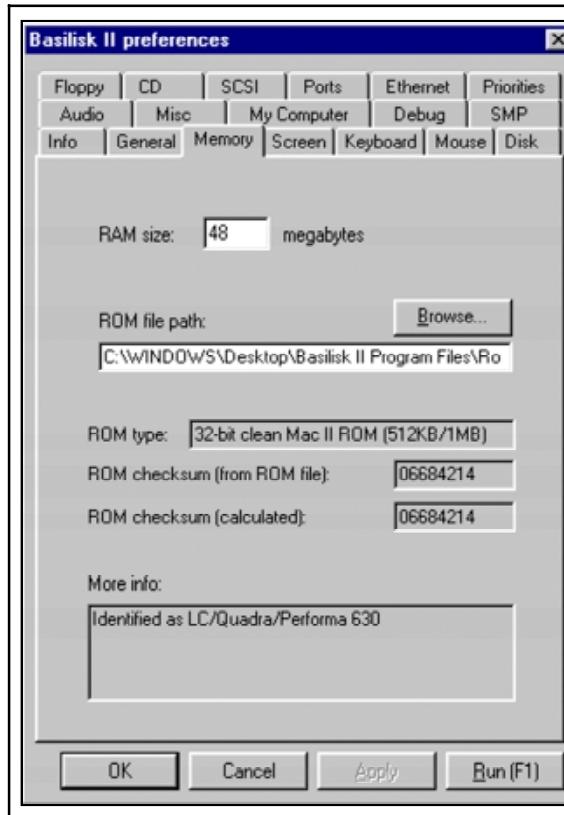


Figure 1-2:

The Basilisk II Memory Tab. This tab allows you to set up the amount of RAM that Basilisk II will use. It also allows you to specify the Macintosh ROM file location.

Get the Info...

When setting memory on Basilisk II, you need to remember of course that the amount of RAM you assign to the emulated Mac is limited by the resources you have on your PC. Windows does support virtual memory, though, so if you exceed your physical RAM limitation on your PC, Windows' virtual memory will take over and start using your main hard drive as RAM. This can slow things down a bit in Basilisk II, though. Another factoid to remember is that Basilisk II does not support virtual memory within the Mac OS. Back in the early 1990s, Apple Computer added virtual memory to the Mac OS starting with System 7.0. But in order to use virtual memory, the Mac needed to have an Memory Management Unit (MMU). Basilisk II does not support an MMU at this time.

Along with the ROM File Path, Basilisk II gives you some information on the particular ROM that you are using. The information includes the ROM Type, ROM checksum, and ROM checksum calculated. These fields tell what kind of ROM you're using in terms of the size and identifier. These can help in diagnosing problems that you may be having with your ROM. If the calculated ROM checksum and the normal ROM checksum are different, you may have a corrupted ROM file. You may also find that you have found a ROM that simply won't work with Basilisk II. This can aid in the improvement of Basilisk II in future versions.

To round out the memory tab, we have the More Info box. This tells you what machine the ROM was taken from.

Screen (Display) Options...

The screen options, also known as display options, contain the information needed to tell the Macintosh how to display its video.

☒ Screen Type

The Screen Type option sets up how Windows will display the Mac's video. Since the Macintosh and Windows have differing ways of drawing information to the computer screen, this option sets up a kind of translation between the two so that you can see all those magical Macintosh icons right on your Windows screen. There are four types of screen types that Basilisk II uses for this purpose.

The first, Windows GDI, is the most compatible (and arguably most flexible) with most Windows systems. It is also the oldest of the video modes, and has its roots all the way back to Windows 2.0 (now that's old). But, if you have problems with any of the other video modes, Windows GDI is more than likely going to work.

The second screen type is Direct X. When game manufacturers complained to Microsoft about slow game performance on Windows,

Redmond's answer was Direct X. It increases the optimization for various video cards, allowing many graphics intensive applications to run faster. It especially excels in full screen modes. The Direct X options on Basilisk include In a Window, and Full Screen.

❑ Screen Width and Screen Height

These two options are pretty much self-explanatory. They define the screen resolution in pixels; in simple language, they set the size of the Mac's screen. In order to run Basilisk II in a window on your screen, make sure that the Mac's screen width and height are less than your Windows' screen. For example, if your Windows screen is set to 1024 x 768, you could set your Basilisk II screen to 800 x 600 pixels.

❑ Colors

Again fairly self-explanatory, this option controls how many colors are available at one time to Basilisk II once the Mac OS boots. For the most part, this option produces unpredictable results

when used with the Direct X screen type, especially when using anything less than 16-bit (65,000 colors) graphics. If you want to use anything less than 16-bit color in Direct X mode, be sure to use Direct X Full Screen.

❑ Refresh Rate

The Screen Width and Screen Height options offer many pre-set screen resolutions to choose from. But, if you want a better choice of screens, select this option. It offers all the resolutions that your video card and driver can handle.

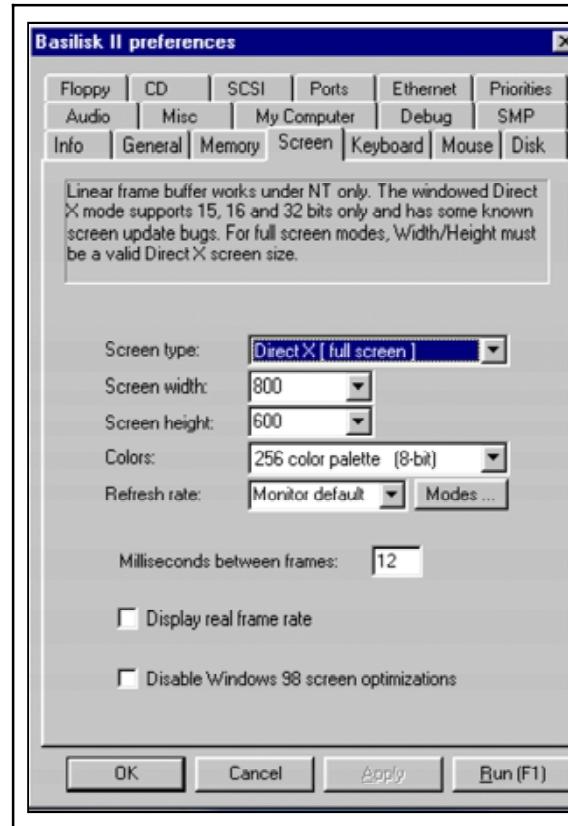


Figure 1-3:

The Basilisk II Screen Display Options. This screen allows you to set up your Macintosh display options.

Milliseconds Between Frames

This option controls the speed at which Basilisk II updates the Macintosh's graphics display. Higher numbers in this box result in a choppier display, but require less processor power. Lower numbers result in a smoother display, but require more CPU power.

Display Real Frame rate

Disable Windows 98 Screen Optimizations

These two options serve to measure and increase the performance of the graphics in Basilisk II. If the Display Real Frame rate is checked, you see a numeric indicator that measures how many frames per second Basilisk II updates the screen. Generally, the bigger the number, the better and smoother the display. The Windows 98 Screen Optimizations include some routines to get just a bit more speed out of Basilisk II's display. However, if you are having problems with Basilisk II, it might not hurt to check this item.

Get the Info...

On a real Macintosh, you can change the screen/color resolution on the fly without restarting. However, in Basilisk II you need to exit the Mac OS, change the color/resolution setup, and then restart the Macintosh.

Keyboard Configuration Options...

Basilisk II includes some really nice features to customize the way that your emulated Macintosh's keyboard behaves. You can even custom map Macintosh keys to certain keys on your PC's keyboard.

Keyboard Type

Different Macintosh models ship with slightly different keyboard layouts. This gadget includes several of these keyboards as presets. It even includes keyboard sets from the newer iMac and PowerMac G3 computers!

Custom Keyboard File

Basilisk II's default setup includes a file called BasiliskII_Keyboard. This file contains a legend, that tells Windows what to do when a Macintosh key is pressed. For example, when you press the "A" key on your Windows keyboard while running a Macintosh program, this keyboard file tells Basilisk II to print the letter "A" on the Mac's screen. That's pretty simple. But what happens when you need to

press the Mac's Option key? I found this to be a problem, and here's why. On the default Basilisk II keyboard file, the Mac's Option key is mapped to the left and right Windows keys. But what if your PC's keyboard doesn't have Windows keys? This is where the custom keyboard file becomes very useful. You can change the key assignments in Basilisk II quite easily. For example, let's say that you need to remap the Mac's Option key to another key on the Windows keyboard. All you need to do is click the Edit Keyboard Codes button. You're then presented with a picture of your PC's keyboard, as shown in Figure 1-5. Click any key on this keyboard layout that you want to assign the Mac's Option key to. In this case, I chose the F12 key. Now, click the Mac OS drop down listing in the bottom right corner of the dialog box and choose the Option key. Again, this is shown in Figure 1-5.

Now, let's say that you want to save this as a custom keyboard file so that when you put Basilisk II on your friend's computer, you don't have to reassign the F12 key to the Mac's Option key. All you need to do is press the "Browse..." button and save the custom file to your Windows hard disk. You can then use this file by typing its path in the Custom Keyboard File. For example, if the keyboard file is in your Basilisk II directory on the Windows 98 Desktop, the path is:

C:\windows\desktop\BasiliskII\B2_custom_keyboard

This assumes that your new keyboard layout file was named B2_custom_keyboard.

❑ Use Alt-Enter to switch windowed/full screen

With this box checked, you can toggle between Basilisk II's windowed mode and full screen mode. This is quite useful for

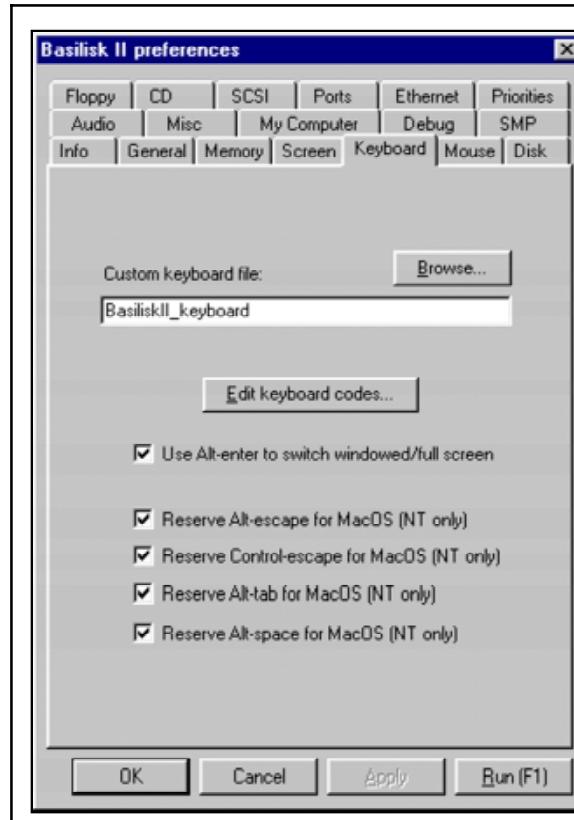


Figure 1-4:

The Basilisk II Keyboard configuration screen. This screen allows you to customize the keyboard functions used in your emulated Macintosh.

switching between these modes on the fly.

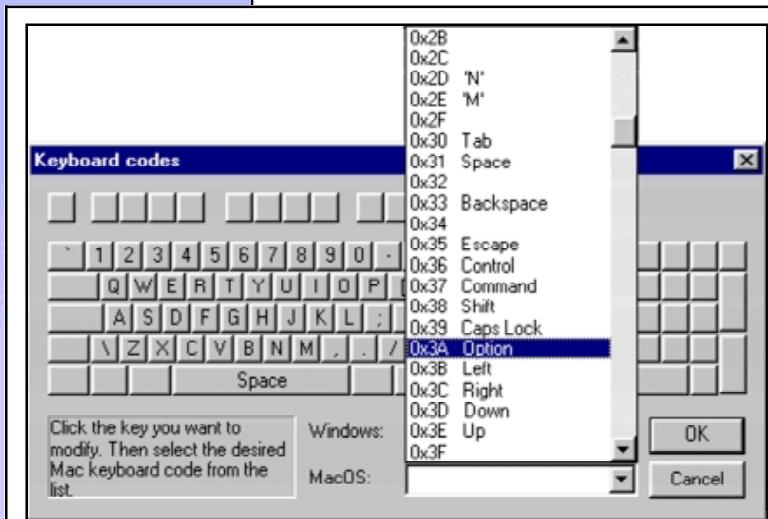


Figure 1-5:

The Basilisk II keyboard code setup screen. Use this to define custom keys in the Mac OS.

- Reserve Alt-Escape for Mac OS (NT Only)**
- Reserve Control-Escape for Mac OS (NT Only)**
- Reserve Alt-Tab for Mac OS (NT Only)**
- Reserve Alt-Space for Mac OS (NT Only)**

These four checkboxes are used to reserve specific key combinations for the Mac OS. For example, if you normally hit the Alt and Escape keys together on a Windows machine, the Windows Start Menu pops up. Let's say that there is a program that runs on the Macintosh that

uses this same key combination. Pulling up the Windows Start Menu really doesn't help you if you need to get that function working in the Mac OS. So, Basilisk II allows you to reserve these key combinations to the Mac OS only, just as long as Basilisk II is running in the foreground. However, these key reservations will only work on the Windows NT and Windows 2000 versions of Basilisk II.

The Mouse Options...

Basilisk II includes many options that allow you to configure the way that your Windows mouse will function while in the Mac OS, including taking advantage of many features not found on a real Mac mouse.

Right Mouse Button is Used To

One glaring omission on a real Mac's mouse is a second mouse button. As a matter of fact, on my real Mac I use a replacement mouse from MacAlly with two programmable buttons. But when using Basilisk II, what is one to do? If you're using Mac OS 8 or 8.1, you can take advantage of Apple's contextual menus. These are similar to the menus that pop up in Windows when you click your right mouse button. On a real Mac, you need to hold the Mac's Control key while clicking the mouse button to get the menus to pop up. This in effect

mimics a second mouse button. Basilisk II can do this automatically by mapping the Mac's Control-Click to the Windows right mouse button. To enable this option, select the Send control & click to Mac OS. Now whenever you click your right mouse button while in Basilisk II, Mac OS 8/8.1 will pop up a contextual menu. But what if you're not using Mac OS 8 or 8.1? Apple didn't include contextual menus in any of its operating systems before these releases. For these older systems, you have the option to use your right mouse button with the Move Basilisk II Window setting. With this option selected from the drop down listing, you can instantly drag the Basilisk II window to anywhere on your Windows screen. This of course assumes that you are running Basilisk II in a windowed mode. If you're running at full screen, this option won't work. Although this option may not be as cool as using real contextual menus in the Mac OS, it's still quite useful.

Sticky menu bar (OS 8 Style Mouse Clicks)

This option is unnecessary in Mac OS 8 and 8.1, and is intended for Mac OS versions prior to 8. Before Mac OS 8 came out, whenever you clicked a menu, you needed to hold the mouse button down in order to keep the menu visible. In Mac OS 8, this problem was eliminated with "sticky" menus. This simply means that when you click on a menu, you can let up on the mouse button and the menu stays put. Enabling this option in Basilisk II makes all Mac OSes behave as such.

Normal ADB mouse emulation **More complete ADB mouse emulation**

These two options, available on a drop down list, control the way that Basilisk II emulates the Macintosh's mouse functions. Most of the time, you'll want to use the Normal ADB mouse emulation, as it produces smoother mouse functions. If you are trying to play games

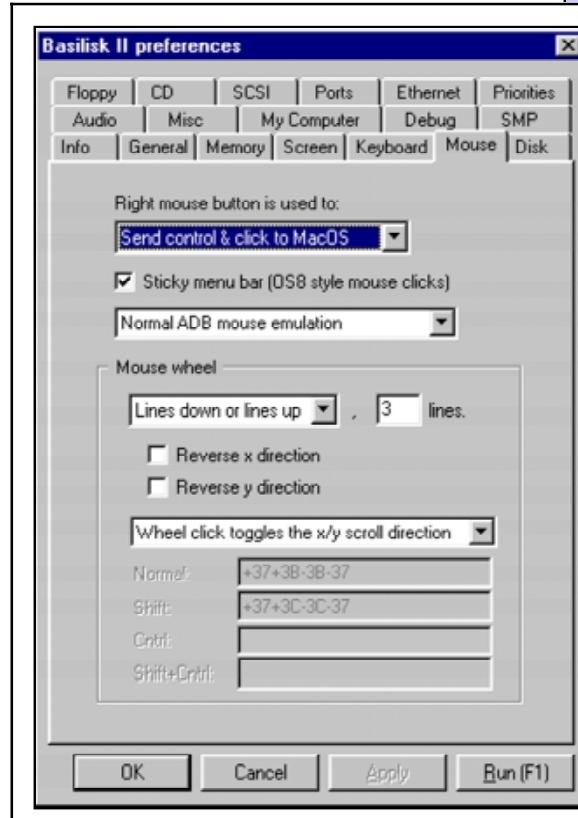


Figure 1-6:

The Basilisk II mouse configuration screen. This screen allows you to set up what the right mouse button does in the Mac OS, and provides you with some powerful mouse wheel functions.

that try to access the Macintosh's mouse hardware on the lowest possible level, you might find that using the More complete ADB mouse emulation option yields better results. One such game that requires this option is the popular *Marathon* from Bungie <http://www.bungie.com/>.

Mouse wheel

The mouse wheel is another feature that you won't find on a stock Macintosh mouse. Fortunately, Basilisk II shores up this shortcoming by adding some custom features to enable you to use your mouse wheel. The first two options are available in a drop down menu list: Page down or page up and Lines down or lines up. Have you ever used the arrow keys or the page down and page up keys on your PC's keyboard? They allow you to navigate large web pages or documents faster and easier than with a mouse. Basilisk II can map these keys to your mouse wheel. Scrolling the mouse's wheel up or down will invoke the page up/page down keys on the keyboard if the Page down or page up option is selected. This allows you to scroll through large documents or web pages one page at a time. If scrolling one page at a time is a bit too fast for you, you can always go with the second option, Lines down or lines up. Instead of scrolling one page at time, you'll be scrolling a few lines at a time. This allows you to scroll slower and with greater precision than with the page up/down method. You can even define how many lines you want to scroll at one time. Higher values will allow you to scroll through documents faster, but with less precision.

Reverse y direction **Reverse x direction**

By default, Basilisk II will scroll upward in a document when the mouse wheel is rolled away from you, and will scroll downward when the mouse wheel is rolled toward you. If this doesn't suit your needs, you can always reverse these directions. Checking Reverse y direction does just that; when you rotate your mouse wheel away from you, documents will scroll downward, and vice versa if you rotate the mouse wheel toward you. Reverse x direction performs this same reversal, except that it applies only to horizontal scrolling instead of the vertical scrolling handled by the y axis.

Wheel click does nothing **Wheel click toggles the x/y scroll direction** **Wheel click sends a "Command-Left Arrow"** **Wheel click sends custom keyboard codes**

One nice feature about a mouse wheel is that it can also function as a third mouse button. Basilisk II allows you to take full advantage of this. This brings us to the next four options that control the mouse wheel click. The first option available from the drop down list simply tells Basilisk II to do absolutely nothing when the wheel is clicked. The second option tells Basilisk II to switch to horizontal or vertical

scrolling. This can be quite useful if you're in a very large document that takes up more than the entire width of your screen. Simply click to switch to horizontal (x) scrolling, and you can now scroll from side to side. The third option sends a key sequence to Basilisk II. It tells the Macintosh to act as if the Command key and left arrow are pressed simultaneously. This can be useful in the Mac OS if you're browsing the web. If you have this function active, clicking the mouse wheel has the same effect as hitting the "Back" button on your web browser.

The fourth option is by far the most powerful of the bunch. It allows you to program what the wheel click will do. Using the keyboard codes shown below, you can assign keyboard shortcuts to the mouse wheel:

Basilisk II Keyboard Code	Mac Keyboard Equivalent
00	A
01	S
02	D
03	F
04	H
05	G
06	Z
07	X
08	C
09	V
0B	B
0C	Q
0D	W
0E	E
0F	R
10	Y
11	T
12	1
13	2
14	3
15	4
16	6
17	5
19	9
1A	7
1C	8
1D	0 (zero)
1F	0 (the letter)
20	U
22	I
23	P
24	Return
25	L
26	J
28	K
2D	N
2E	M
30	Tab

Basilisk II Keyboard Code Mac Keyboard Equivalent

31	Space
33	Backspace
35	Escape
36	Control
37	Command
38	Shift
39	CAPS Lock
3A	Option
3B	Left Arrow
3C	Right Arrow
3D	Down Arrow
3E	Up Arrow
41	Number Pad period (.)
43	Number Pad Multiply (*)
45	Number Pad Add (+)
47	Clear
4B	Number Pad Divide (/)
4C	Number Pad Separator
4E	Number Pad Subtract (-)
52	Number Pad Zero (0)
53	Number Pad One (1)
54	Number Pad Two (2)
55	Number Pad Three (3)
56	Number Pad Four (4)
57	Number Pad Five (5)
58	Number Pad Six (6)
59	Number Pad Seven (7)
5B	Number Pad Eight (8)
5C	Number Pad Nine (9)
60	F5
61	F6
62	F7
63	F3
64	F8
65	F9
67	F11
69	Print
6B	F14
6D	F10
6F	F12
72	Help
73	Home
74	Page Up
75	Forward Delete
76	F4
77	End
78	F2
79	Page Down
7A	F1
7F	Mac Power Key

Now I'll bet you're wondering how to program your mouse wheel with all of that gibberish, right? It's not so difficult. The column on the right displays certain keys on the Macintosh's keyboard. The column on the left shows the Basilisk II equivalent of those keys. Using this table to translate the key codes, let's say that you want to program the mouse wheel to quit whatever program is open when clicked. To do this, you would type the following in the Normal box:

+37+0C-0C-37

In order to quit a Macintosh application, you normally hit the Mac's Command key and the Q key at the same time. The above example tells Basilisk II to do just that. Again using the table to translate, the 37 represents the Mac's Command key, and 0C (that's a zero, and not the letter O) matches up with the Mac's Q key. The plus (+) signs tell Basilisk II that these keys should be pressed, and the minus (-) signs tell Basilisk II that the keys should be released. So the sequence is as such: press Mac Command key, press Mac Q key, release Mac Q key, and release Mac Command key. This will send a quit command to any running Macintosh application. You of course can very these commands to your own liking, and you can even modify them with a real Windows keystroke. For example, you could type the above Command-Q in the Normal box, and then type a Command-O sequence (which brings up the Open File dialog in most programs) in the Shift box as shown below in

Figure 1-8. Now whenever you click the mouse wheel while pressing the shift key on your keyboard, Basilisk II launches the Command-O key sequence. Whenever you just click the mouse wheel without holding down the shift key, the Command-Q sequence launches. You can, of course, add even more custom key strokes to the mouse wheel by entering key codes in the Cntrl (Control) and Shift+Cntrl boxes. Whenever you press the control key and click the mouse wheel, Basilisk II executes a different keystroke. The same holds true if you hold down the shift and control keys and then click the mouse wheel. The bottom line is that you have quite a range of options here.

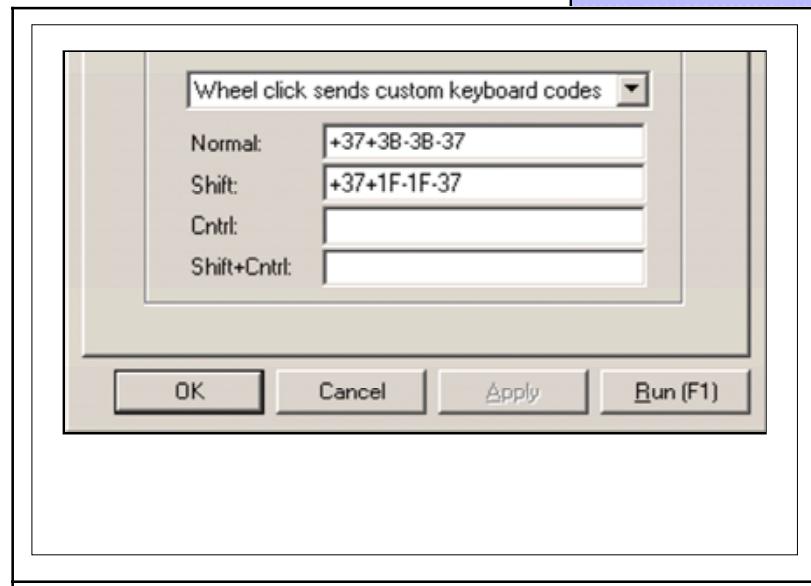


Figure 1-7:

The Basilisk II mouse wheel programming screen. Use this screen to define custom mouse functions in Basilisk II.

Get the Info...

Did you know that you can use the programmable mouse wheel to actually shut down your emulated Macintosh? It's pretty easy. Just map +7F-7F to one of the programmable spaces on the Basilisk II GUI mouse page. The code "7F" refers to the Macintosh's "Power" key. When you press this key on a real Macintosh, it brings up the shut down command.

Disk Options...

Normally, Basilisk II does not boot off of a "real" Macintosh hard disk (the exception to this is a bootable Macintosh CD). By real, I mean an actual Macintosh formatted hard disk that you would have to install in your Windows computer. Instead, Basilisk II runs off what are known as hard disk images, or file disks. A hard disk image is a single file

ranging from a few hundred kilobytes to several hundred megabytes, or even gigabytes in size. To Windows, this is just a single file on the Windows hard drive. But to Basilisk II, the file is a complete hard drive. Depending on the size of the file disk, it can contain a complete installation of the Mac OS, capable of booting right up, just as if it was a real hard disk booting a real Macintosh computer. In the past, this technique of a "hard disk in a file" would cause poor hard disk performance. But with today's computers and more advanced

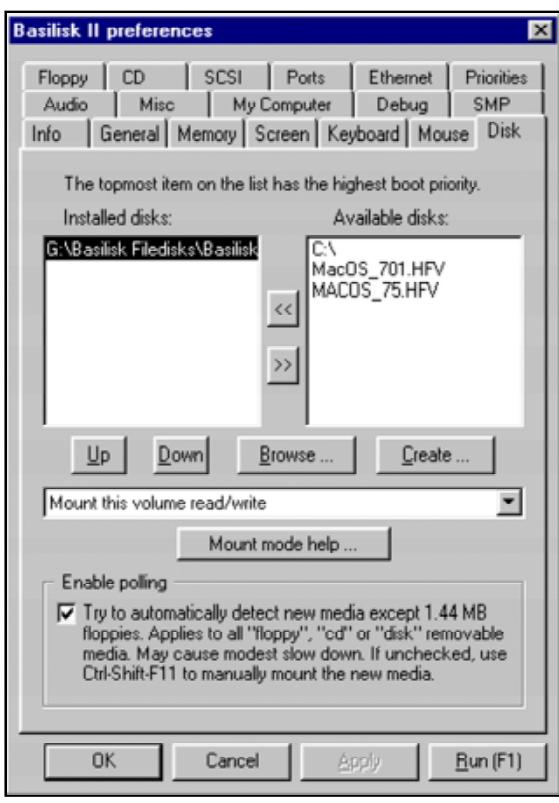


Figure 1-8:

The Basilisk II Disk configuration screen. Use this screen to set up how Macintosh file disks are mounted.

programming techniques, the speed hit is negligible. As a matter of fact, Basilisk II can boot faster than some real, present day Macintosh systems!

- Installed Disks**
- Available Disks**

The Basilisk II disk properties screen is split into these two panes: on the left, we have the file disks that are already installed into Basilisk II, and are ready to mount on the Macintosh's desktop once Basilisk II boots. On the right, we have the disks that are available to Basilisk II, but will not be mounted once Basilisk II boots. You can think of the available disks as a kind of "bulldog", containing file disks that are waiting in the wings. You move the disks from the Available pane to the Installed pane by using the arrows between the two panes, and vice versa. Keep in mind that the disks listed in the Available disks pane include only those disks that are present in the Basilisk II directory. If you have a file disk located somewhere else on your hard drive or another disk, you will need to use the "Browse..." button, described below.

Get the Info...

You can also move the file disks to and from each pane by double-clicking on the file disk that you want to move.

- Up**
- Down**
- Browse...**
- Create...**

These four buttons control what you can do with file disks. On the Installed pane, use the Up and Down buttons to change the order in which the disks are listed. Disks are mounted in the order that they are listed. This becomes important when you have many different bootable disks. Whichever disk is at the top is the disk that Basilisk II will boot from. So if you have a Mac OS 8.1 boot disk and a Mac OS 7.5 boot disk and you want to boot off the OS 8.1 disk, you would move the 8.1 disk to the top of the list using the Up button.

Now, let's suppose that you have a file disk that is located on a Jaz cartridge or another folder on your hard drive. This file disk will not show up in the Available disks column. In order to find it, you can use the "Browse..." button. This way, you'll be able to navigate your hard disk or My Computer listings until you find the particular file disk that you want to use. For example, in [Figure 1-8 on page 23](#), notice that the Installed disks pane shows a disk that is not located in the Basilisk II directory. In fact, it is on a network drive. Notice how it shows the complete path to the file disk:

G:\Basilisk file disks\BasiliskII CD.dsk

The last button, "Create...", allows you to create a Macintosh file disk

from scratch. This process is analogous to installing a new, unformatted hard drive inside a real Macintosh. Once the Macintosh boots, it's necessary to format the disk in the Mac's native HFS format or PC/DOS format. Don't panic if you don't know the first thing about formatting Macintosh hard drives. There is more on this in Chapters 3 and 4.

The next section includes five options in a drop down listing. These options control the manner in which the file disks behave in the Mac OS.

- Mount this volume read/write**
- Mount this volume read-only**
- Virtual read/write mode (discard all changes)**
- Undoable mode (ask whether to keep changes)**
- Undoable auto (save changes on proper shutdown)**

The first option is most likely the one that you'll use the most. It's pretty much as advertised, as it allows you to make changes to any files on your virtual Macintosh hard disk. However, if you don't want any changes saved, you can always opt for the second option, mount as read-only. If you select this mode, the Macintosh file disk is, in effect, write-protected; you can look, but you can't touch. If you try to save any changes to any files, delete files, or install applications, you'll be stopped at the front door. The virtual read/write mode is a compromise between the first two options. When you try to save, delete, or alter any information on the Macintosh's hard disk, it will appear as if you're successful. But in fact, all the changes made to the Mac's disk are intercepted and routed to a temporary file on your PC's hard drive. As soon as you shut down the Macintosh, these changes are discarded automatically by Basilisk II. It's a nice way to make changes without fear of destroying data on your Mac's file disk.

The last two options, Undoable mode and Undoable auto, are more powerful siblings of the Virtual read/write mode. The first undoable mode allows you to make changes to files and applications on the Mac's hard disk. Again, like the Virtual read/write mode, these changes are routed to a special temporary file on your PC's hard disk. Then after you shut down the Mac, Basilisk II asks you if you want to save all the changes that you've just made to the Mac's hard disk. If you are sure that you want to make the changes, click yes or yes to all. If you don't want to save any changes, click no or no to all. The Undoable auto is similar to the first undoable mode except that it automatically saves all data changes you've made to your Macintosh file disk whenever you shut the Mac down properly by selecting Shut Down from the Mac's Special menu. If you simply click the X in the upper right corner of the Basilisk II screen (an improper shut down procedure, analogous to simply turning a real Mac's power switch off), Basilisk II will ask you if you wish to save the changes.

The Virtual read/write and Undoable modes are very useful, and allow for extreme experimentation with your file disks. But make sure that

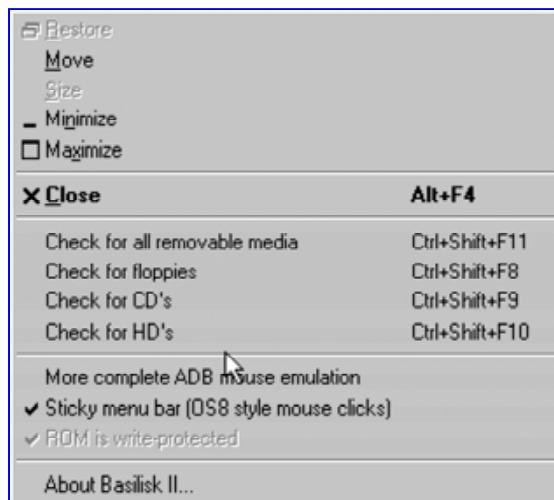
you have enough free disk space available on your Windows hard disk (the undo file is saved to either the same directory as the file disk or the c:\windows\temp directory). If you run out of room on your Windows hard drive, you're given the option to save the changes to the Mac's disk.

Enable polling

Polling enables Basilisk II to automatically check for new removable media such as CDs. When this box is checked, Basilisk II automatically mounts any inserted Mac CD or disk to your Mac's desktop. There is a slight speed hit with polling enabled, but the convenience outweighs this minor annoyance. If you don't have this box checked, you have to manually mount any CDs or removable media by pressing the Control-Shift-F11 keys.

Get the Info...

Did you know that many of the options discussed thus far can be accessed by right-clicking the Basilisk II icon on the Windows Task Bar? That's right: you can check for new hard disks, change the mouse emulation mode on the fly, check for CDs and floppies, and even check for new removable media.



Audio Options...

One of the most important options added to Basilisk II is the audio component. Once upon a time, Basilisk II supported no audio at all! Then came audio support, but support for the alert sounds in the Mac OS were nowhere to be found. Now, we not only have support for those quirky little quacks and beeps, we also have support for the Mac's startup chime.

Enable the audio component

This one's pretty much as advertised; it turns the sound on. If for some reason you don't want any sound in your Macintosh programs, you can always uncheck this option. It may speed things up a bit, as

the emulation doesn't have to worry about generating sound.

Disable audio when Basilisk II is inactive

This simply saves your CPU's power for other Windows applications that may be running at the same time as Basilisk II. When Basilisk II is not the front most application, this option disables its sound support. When Basilisk II is brought back to the front, sound support starts back up.

Get hardware volume (alert beeps)

This option enables the Mac OS' alert beeps. Whenever an error occurs in the Mac OS, or whenever the Mac needs to get your attention, it normally beeps or plays an alert sound to notify you. The beeps can be custom set via the Macintosh's Sound or Monitors and Sound control panel.

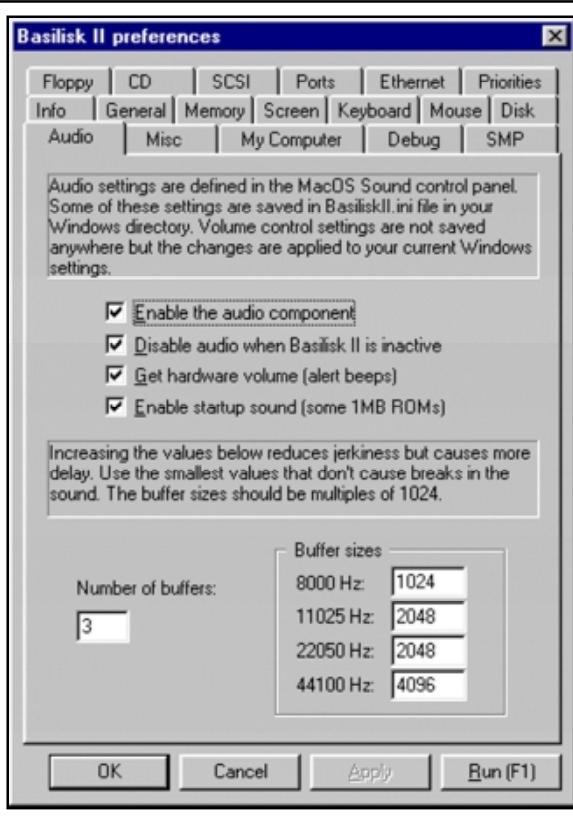


Figure 1-9:

The Basilisk II Audio configuration screen. Use this screen to set the Mac OS sound options.

Enable startup sound (some 1MB ROMs)

Every Macintosh ever built has a startup beep or chime that sounds whenever the machine is turned on. Although not necessary, this option adds that little bit of Mac realism to Basilisk II. Be warned, however, that this option will not work on all Macintosh ROMs. It has only been shown to work with some 1MB ROM files.

Number of buffers **Buffer sizes**

These two options directly control the performance and smoothness of the Macintosh's sound

output. What are buffers? Buffers are an area of memory where chunks of data are stored temporarily. When your emulated Macintosh produces a sound, that sound data is sent to Windows where the sound is then played. This process can cause some lag time, thereby making the Mac's sound a bit choppy. Buffers can help reduce this choppiness. When Basilisk II sends the sound data to Windows, Basilisk II stores this data in a buffer where it can then play it using the

Windows sound hardware. Basilisk II can set up multiple buffers so that when one sound is playing on Windows, another sound can be bounced out of the Mac and into another buffer. This way, in a perfect world anyway, the sound should be fairly continuous and smooth. Too many buffers, however, can give the exact opposite effect. I recommend sticking with the default value of three buffers.

This brings us to the size of the individual buffers. These buffer sizes are measured in bytes, and should be kept as small as possible so that the data in them can be played and offloaded as quickly as possible so that more sound data can be sent to fill them back up again. Using larger values can decrease the choppiness of the audio coming from your Mac, but sound delays can increase as it takes time to fill the larger buffers. These buffers have four separate categories for different sound sample frequencies: 8000 Hz, 11025 Hz, 22050 Hz, and 44100 Hz (CD Audio quality). High (better) frequency settings require higher buffer sizes. Again, I recommend using the default values of 1024 bytes, 2048 bytes, 2048 bytes, and 4096 bytes, respectively.

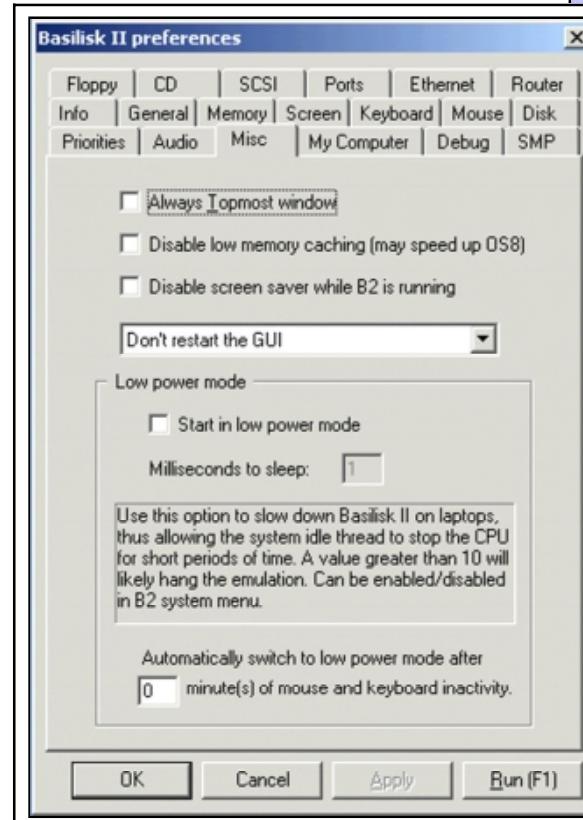


Figure 1-10:

The Basilisk II Miscellaneous Options screen. Here, you can configure those options that just won't fit under other categories.

Miscellaneous Options...

The miscellaneous tab contains a kind of catch-all area for options that really don't have a home in any other of the tabs in the Basilisk II GUI. Generally, they control how the GUI itself functions, how the Basilisk II window displays, and adds some nice options for laptop users.

Always Topmost window

When Basilisk II is running in Windowed mode, it's always possible that the window might get covered up by other windows or programs

that you have running on your Windows computer. With this box checked, Basilisk II will always cover other windows on your desktop. When the box is unchecked, other windows can cover the Basilisk II window.

- Disable low memory caching (may speed up OS 8)**
- Disable screen saver while B2 is running**

These options serve to speed up Basilisk II emulation. The first is specific to Mac OS 8, and the second turns the Windows screensaver off while Basilisk II is running, saving precious processor power.

- Don't restart the GUI**
- Automatically restart the GUI**
- Automatically restart the GUI minimized**

Available in a drop down listing, these three options control how the Basilisk II GUI program behaves after the Mac OS shuts down (or if the Mac OS or Basilisk II crashes). The first option tells the GUI to do nothing. After the Macintosh shuts down, you're transferred right back to Windows with no further action on the part of Basilisk II. The second option causes the GUI to restart right after the Mac OS shuts down. This is a useful feature when you want to get right back to the Basilisk II GUI after you shut down the Mac. The third option is a variation on the GUI restart, except that the GUI restarts as a minimized window on the Windows taskbar.

- Start in low power mode**
- Milliseconds to sleep**
- Automatically switch to low power mode after x minute(s) of mouse and keyboard inactivity**

These three options pertain to laptop computers. Since laptops are on a limited supply of battery power, these options allow you to “slow down” the emulation. This is achieved by starting the laptop in low power mode, thus using less battery power. Along these same lines is the milliseconds to sleep setting. This specifies how long the system should wait before the main CPU goes into sleep mode. The default is 1 millisecond. Although this is one really short nap by human standards, for the CPU, it can save precious battery life. If you raise this value, the processor will stay asleep longer, conserving even more power. But if you raise the value too much, Basilisk II will probably crash. The outer limit here is about 10 milliseconds. Anything longer just won't work.

If you don't want to start Basilisk II in low power mode, you can tell it to switch to low power mode after a specified number of minutes of inactivity (i.e., the keyboard and mouse aren't being used). This is the best compromise, as starting Basilisk II in low power mode may slow the emulation. If you tell Basilisk II to wait for the system to go idle before it goes to low power mode, then you can always wake it up and go back to full speed.

My Computer...

My Computer is one of the most powerful features in Basilisk II. Simply put, it allows you to share your PC's disk drives with the Macintosh. When this feature is turned on, your PC's drive letters will show up on the Macintosh's desktop using the familiar Windows My Computer Icon. It also includes a folder called the Virtual Desktop, which lets you transfer files from the Mac to the PC while retaining the Macintosh files' Resource Fork. Keep in mind that the Virtual Desktop folder can become corrupted in rare instances. If this is the case, simply delete the Virtual Desktop folder in your Basilisk II folder.

Get the Info...

Macintosh files are arranged very differently from their PC counterparts. For example, PCs live and die by the three digit file extension. A Windows file extension consists of three characters that identify the file's type. For example, if you have a JPEG image file, Windows will normally append a ".jpg" to the end of the file. This tells Windows to open the file in a program that can handle JPEG files. The Macintosh, on the other hand, "splits" the file into two areas called Forks: the Resource Fork and the Data Fork. The Data Fork holds the actual data contained in the file. So using our JPEG image file as an example, the Data Fork contains the actual picture/graphic data. The Resource Fork performs the same function as the Windows three character extension; it tells the Macintosh what type of file it is, and what program created it. The problem is that when a Macintosh file is copied to a PC disk, the resource fork usually gets deleted. When you try to port this file back to the Mac, the Mac doesn't really know what to do with the file. This is especially true when the file is a Macintosh application. Without the resource fork, the Mac doesn't know that the file is an executable file. For this reason, most Macintosh files that you download from the internet are stored in a format that combines the two forks into one file. Called either Binhex (with the extension .hqx) or the newer MacBinary III (with the extension .bin), these files can be stored on a PC with no danger of losing any of the Macintosh Resource Fork. Once on the Mac, you can decode the files using Aladdin Systems' Stuffit Expander

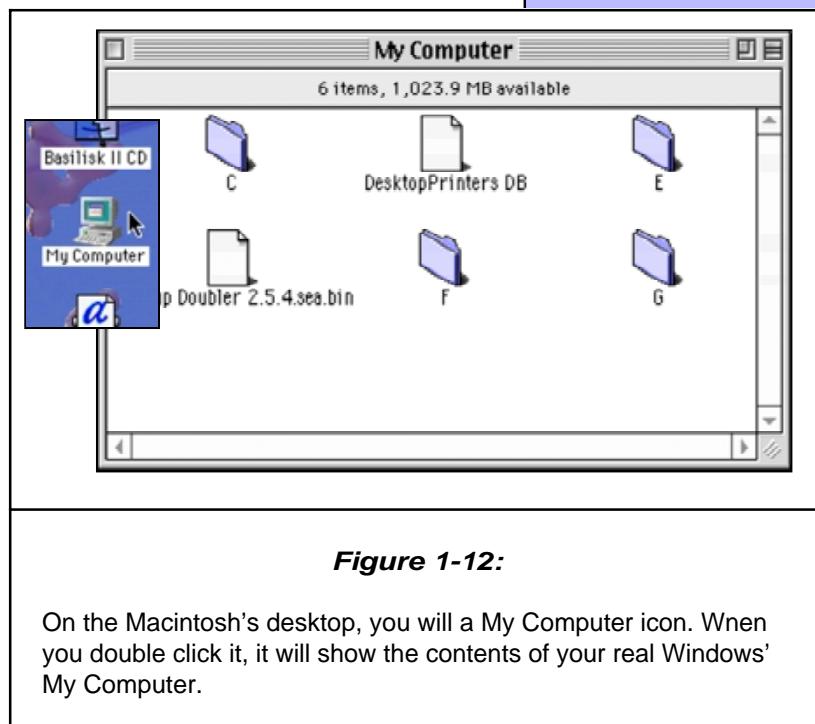


Figure 1-12:

On the Macintosh's desktop, you will see a My Computer icon. When you double click it, it will show the contents of your real Windows' My Computer.

Enable external file system

Checking this box activates the My Computer option so that you can share files with the PC's drives and the Mac's drives. If you leave it unchecked, you won't be able to share PC drives with the Mac. When you have this box checked, you also have the option to choose which drives you want share with the Macintosh. You can check them individually, or click the All button to choose all available disks on your PC.

You can also choose None to deselect all drives. After selecting these drives and booting into the Mac OS, you see an icon on the Mac's desktop called My Computer. This icon behaves similarly to the My Computer icon on your Windows desktop. When you double click the icon, you see several folders, each with a drive

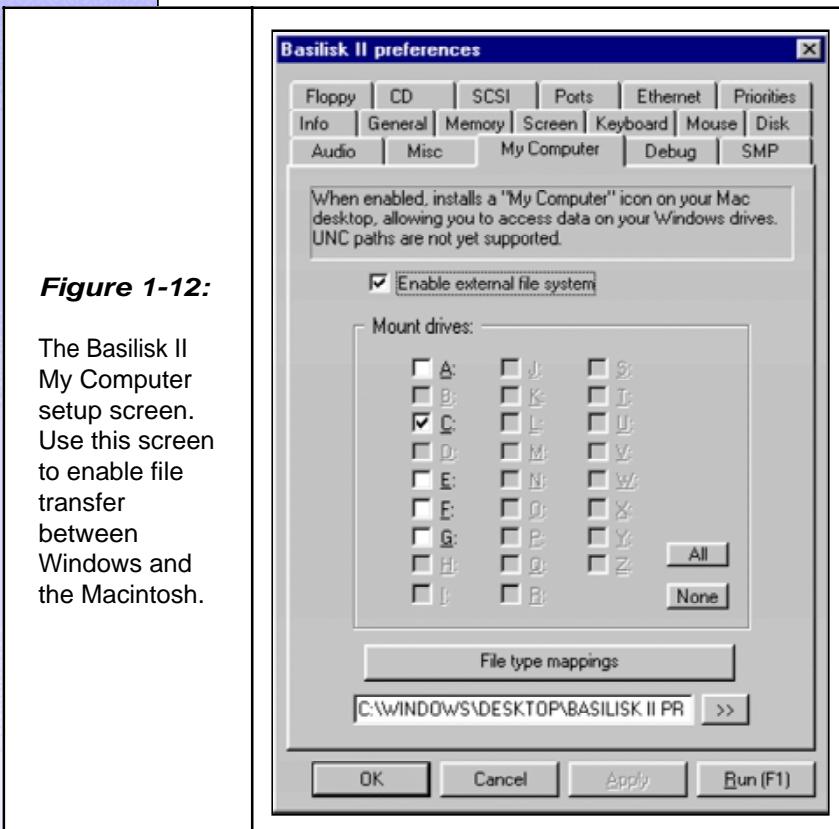


Figure 1-12:

The Basilisk II My Computer setup screen. Use this screen to enable file transfer between Windows and the Macintosh.

letter corresponding to the appropriate drive on your PC. You can copy files directly to your selected PC drives by dragging Macintosh files to the drive letters in the My Computer window

The external file system also contains a special folder called the Virtual Desktop. The Virtual Desktop is a central place where you can copy files to and from the PC within the Macintosh or PC, and you can even access this folder when Basilisk II is not running. The Macintosh's resource fork is preserved when copied to this special folder as well. In Windows, the Virtual Desktop folder is located inside the Basilisk II folder. On the Macintosh, it's the window that opens when you double click the My Computer icon. You can copy files to this folder on the Mac side by dragging files to the My Computer window, or by dragging them to the My Computer icon itself. Check out Figure 1-11 for details.

File type mappings

The File type mappings box allows you to edit the creator and file type settings specified in a Macintosh file's Resource Fork. The file type is the kind of file you are copying (such as a JPEG file); the creator is the program that created, or more precisely, can open the JPEG file. The File type mappings automatically set the resource fork of any file that is copied from Windows to the Mac. For example, if you're copying a JPEG file from the Windows C: drive to the Mac, Basilisk II automatically sets the file type as a JPEG file, and the creator as a Quicklime file. You can edit these settings, but since Basilisk II already contains a rich database of presets, you shouldn't need to edit too much of this information.

Get the Info...

In order for the My Computer feature to work on Mac OS systems prior to Mac OS 7.5.3, you'll need to have the FSM 1.2 (File Extension Manager) extension installed in the Extensions Folder of your Mac OS hard disk file. You can get a copy of FSM 1.2 on Apple Computer's web site:

[<ftp://ftp.apple.com/developer/Development_Kits/File_System_Manager.sit.hqx>](ftp://ftp.apple.com/developer/Development_Kits/File_System_Manager.sit.hqx)

Debug...

The debug tool is used only if you are having problems with Basilisk II crashing or locking up. There are three options on this panel (SCSI, Serial Port, and File System), and when turned on, they write text files to the Basilisk II directory detailing what might have gone wrong. Each option can be turned on or off independently. So if, for example, you are having problems with your modem disconnecting while in Basilisk II, you would turn on the Serial Port debug option. Keep in mind that turning these debug tools on slows Basilisk II down considerably, so use them only if you are experiencing problems. If you have problems deciphering the data in the debug files, you can always submit the data to Lauri at his homepage:

[<http://gamma.nic.fi/~lpesonen/BasiliskII/>](http://gamma.nic.fi/~lpesonen/BasiliskII/)

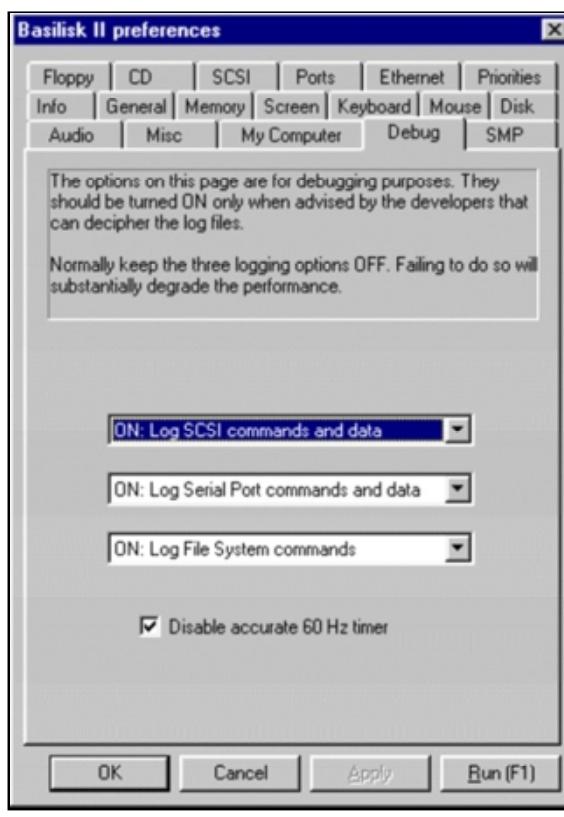
Disable accurate 60 Hz timer

Checking this option will speed up the emulator's performance. There is a drawback, however. With this option turned off, Basilisk II may give some very unrealistic and inaccurate test results when running certain benchmarking program such as Speedometer. But to be perfectly honest, who cares? Benchmarking software really does not give a true picture of the speed of an emulator. The true measure of speed in Basilisk II will come when you find out how long it takes to

rotate that large image in Photoshop, or the time it takes to render a web page in Netscape. For this reason, I recommend checking this box. Every little bit of speed that you can get from Basilisk II helps.

Figure 1-13:

The Basilisk II Debug setup screen. Use this screen if you are experiencing problems with Basilisk II and need to report data back to Lauri Pesonen. You can also speed up Basilisk II a bit by checking the Disable accurate 60 Hz timer box.



SMP...

The SMP option, standing for Symmetric MultiProcessing, allows you to take advantage of multiple processors if your computer and operating system are equipped with such goodies. Windows 95, 98, and Me do not support multiple processors; only Windows NT and 2000 are graced with this ability. Having two or more brains in your PC is a good thing, and increases your computer's efficiency on handling various tasks in Basilisk II. For example, you can have one processor handle Basilisk II's serial port

functions, while having another one handle the emulator's graphics functions. This gives an extreme speed boost, as one processor is not left alone to do the whole work load. Just tell Basilisk II which processor that you want each thread assigned to. The different functions, or threads, that can be assigned to various processors are as follows.

❑ Ethernet

Basilisk II allows you to connect to your PC's ethernet network if you are connected to one. It can share this network connection, allowing you to browse the net on either Windows or Mac OS (*with some limitations, those of which are described later in Chapter 10, page 109*)

❑ Serial Port In ❑ Serial Port Out

The serial port in and out options control how Basilisk II controls data

going in and coming out of the serial port within the Macintosh emulation. These two functions typically affect internet options. Serial port in controls data coming in from the internet, while serial port out controls data leaving Basilisk (such as requesting web page data or sending email). Obviously, the one used the most in the internet example is Serial port in, as you download web pages all the time you are on the internet.

❑ CPU

The CPU task, or thread, is one of the most important of all the threads listed here. It controls the main 680x0 processor emulation. If possible, you might want to try putting this thread on its own processor and balance the others on a different processor.

❑ 60 Hz & Mouse

This thread controls the mouse functions. According to Lauri himself, this is "...the heartbeat of the mouse..." This thread is executed 60 times per second.

❑ 1 Hz

The 1 Hz thread controls how often Basilisk II checks for new media (such as CDs and floppy disks).

❑ Param. RAM

The Parameter RAM (also called the PRAM) is a Macintosh-specific area of memory that is normally backed up by the internal battery on a real Macintosh. Just some of the information saved in the PRAM include the Macintosh serial port configuration, the printer settings, the default alert beep, and the number of times the menu blinks when an item is selected. Any time one of these options is changed in the Mac OS, Basilisk II records them to a file named `pram_XXXXXXXX.dat`, located in the Basilisk II folder.

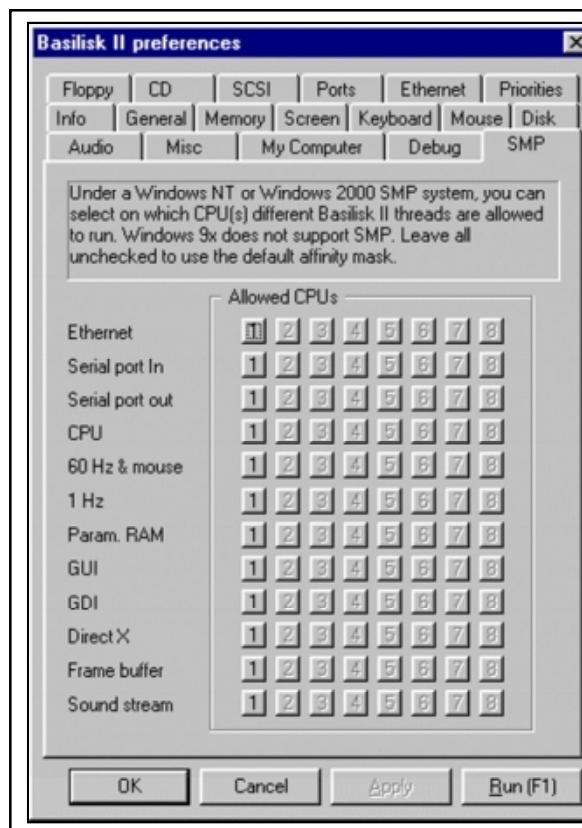


Figure 1-14:

The Basilisk II Symetric Multiprocessing screen. If you PC has more than one processor and you are using Windows NT or 2000, you can divide up the tasks that Basilisk II performs amoung the various processors in your computer.

Get the Info...

Basilisk II keeps multiple PRAM files in the Basilisk II folder. The reason for this is that you are more than likely to run more than one Macintosh configuration, with different model IDs and Mac OS versions.

☒ GUI

The GUI (Graphical User Interface) thread controls all Windows graphics functions passed to Basilisk II, save one: the mouse functions. As you may recall, the mouse is taken care of in the 60 Hz and mouse thread. Window movements, menu draws, keyboard actions; these are all handled by the GUI thread.

☒ GDI

☒ Direct X

☒ Frame Buffer

These three threads all contain information on the graphics mode that Basilisk II runs in (*for more information on these graphics modes, please see [page 13](#) for a discussion on display options in Basilisk II*).

☒ Sound Stream

The sound stream thread pertains to all things sound in Basilisk II. From the alert sounds the Mac OS produces to a Quicktime movie, the sound stream is the key here. (*See [page 26](#) for a discussion on the audio options in Basilisk II*).

Floppy...

It's just as simple as it sounds. This tab allows you to set up the floppy disk options in Basilisk II.

☒ Boot from floppy allowed

Just like a Windows PC, the Macintosh can boot from a floppy disk provided that you have a bootable Macintosh floppy. Keeping this box checked allows Basilisk II to boot from that floppy. If for some reason you wish to disable this function, simply uncheck the box and Basilisk II won't boot from a floppy disk.

☒ Installed floppies/Available floppies

Similar to the disk setup tab (*see [page 23](#) for more details*), the installed and available floppies columns allow you to view what floppies are available on your system, and which ones are set up for use in Basilisk II. The available floppies field shows all the floppy

disk drives that are installed on your Windows system, and are ready to be moved over to Basilisk II for use in the Mac OS. Since most PCs today ship with only one floppy drive, you are most likely to see only one entry in this field, and that's the A:\ drive. To move any floppies from the Available field to the Installed field, simply double click the drive and Basilisk II moves that drive to the Installed field. If you have more than one floppy disk installed, you can change their order/priority by using the Up and Down buttons beneath the Installed floppies field. Of course you can also move any floppies in the Installed field back to the Available field by double clicking the drives you want to move. Be advised that any floppies in the Available field will not show up in the Mac OS; they need to be in the Installed field.

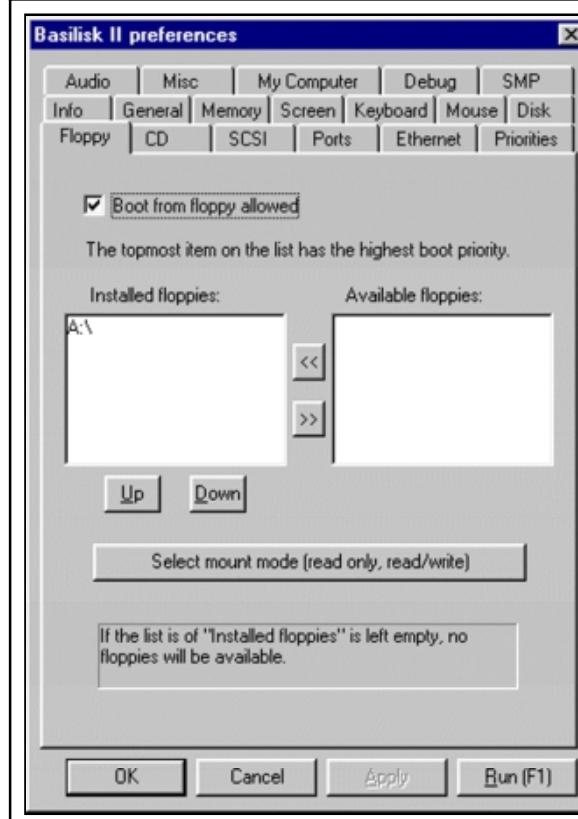


Figure 1-15:

The Basilisk II Floppy screen. Set up the floppy disk options in Basilisk II here.

Select mount mode

The mount mode tells Basilisk II how to mount floppy disks. There are two options available for the mount mode: read only and write. The read only option will mount all floppy disks that you can throw at Basilisk II, but you won't be able to write any data to them. If you plan on saving data to floppy disks in the Mac OS, be sure to mount them as write. This ensures that you can save data to your floppies.

CD...

Closely related to the floppy tab, CD controls most of the CD-ROM functions in Basilisk II. You can set the available/installed CDs the same way that you set the available/installed floppies. The CD-ROM enabled checkbox turns CD-ROM access on or off. The only unique setting on the CD tab is the Use Windows 95/98 real mode CD drivers. Use this option if you are having problems getting CDs to work correctly under Basilisk II. Also remember to move any CD-

ROMs that you want to use in Basilisk II over to Available CDs.

SCSI...

The SCSI (Small Computer Systems Interface) tab controls how SCSI drives interact in Basilisk II. One of the biggest uses for this tab is running Adaptec's Toast for Macintosh:

<<http://www.adaptec.com/products/overview/toast.html>>

Toast is a CD recording suite for the Macintosh that will record just about any and all CD formats, including Macintosh, ISO-9660, Joliet (for Windows 95 and above), Macintosh/PC hybrid CDs, music CDs, and many others. But in order to run Toast under Basilisk II, you will need to have a CD Recordable (CD-R) drive attached to your PC. Even if you don't actually have a SCSI drive (i.e., you might have an IDE drive instead), Basilisk II "lies" to the Mac OS telling it that your drive is indeed a SCSI drive. To activate the SCSI functions in Basilisk II, make sure that the SCSI enabled checkbox is checked. From here, we need to move to the bottom of the SCSI screen to explain a few things.

Installed SCSI devices

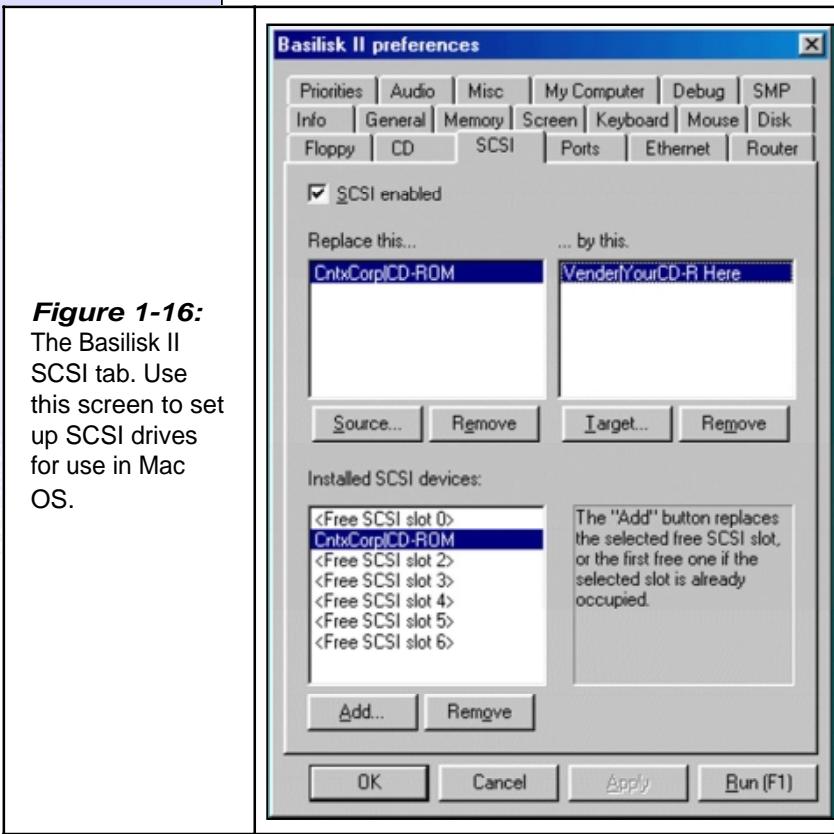


Figure 1-16:
The Basilisk II SCSI tab. Use this screen to set up SCSI drives for use in Mac OS.

Once the SCSI enabled checkbox is checked, the rest of the screen comes alive. Toward the bottom of the screen is the Installed SCSI devices listing. This includes the SCSI "slots" that are available to you. You can assign real disk drives to these slots, provided that these drives are actually installed and running on your PC. To assign a drive to a particular slot, simply click the slot that you wish to assign a drive to

and click the Add button. Immediately, a list pops up containing the available drives that you can assign to that particular slot. Choose the drive that you want to assign, and it appears in that slot. For example, in Figure 1-16, I have assigned the drive named CntxCorp|CD-ROM to slot 1 (if the selected slot were already in use, Basilisk II would assign my drive to the first available slot).

☒ Replace this...by this.

This brings us to the two boxes above labeled “Replace this...” on the left and “...by this” on the right. Lauri added this because at the time he programmed the SCSI features into Basilisk II, Adaptec Toast version 3.5 refused to recognize his CD-R drive. The “Replace this...by this” function allowed him to do a bit more fibbing to the Mac OS (remember, the Mac thinks that all CD drives are SCSI, even though they may be IDE or even USB or parallel).

To put this into practical terms, let’s say that you have a certain CD-R drive that is not supported by Adaptec Toast, but we know that an equivalent drive by a different manufacturer will work with Toast. How do we fool Toast into thinking that it is using this alternate model of CD-R? Here’s a few easy steps to toast that Toast problem.

- **First of all, assign your real CD-R to a SCSI slot as described previously.**

For clarity, let’s say that our real drive is a Hewlett Packard CD-Writer 7100. Basilisk II denotes this in a special way, giving the product’s vendor name first, followed by a pipe (|), and ending with the model name or number of the drive. So our drive would be called HP|CD-Writer 7100. We want to fool the Mac into thinking that it’s using the equivalent drive that Toast supports, a Phillips CDD3600. Again, using Basilisk II’s labeling method, this would be a PHILLIPS|CDD3600. Proceed on, if you dare.

- 1. Under the “Replace this...” column, click the button labeled Source and select the HP|CD-Writer+9300**
- 2. Under the “With this...” box, click the “Target...” button.**
- 3. Enter the Vendor name and Product name of the “fake” drive that you want the Mac OS to see. This is shown in Figure 1-17.**

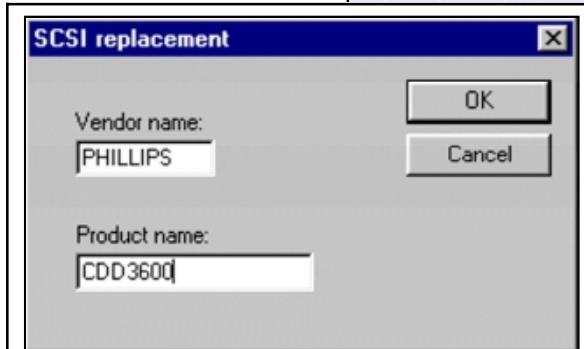


Figure 1-17:

The SCSI replacement window. Use this to specify the vendor name and product name of the drive you want the Mac OS to “see”.

4. Click OK, and OK again.

That pretty much does it. Whenever the Mac OS probes the emulated SCSI chain, instead of finding our real Hewlett Packard CD-Writer 7100, it sees a Phillips CDD3600.

Get the Info...

Sometimes when you click the SCSI tab, you might find that Basilisk II crashes. This is more than likely due to a problem with the ASPI Layer (Advanced SCSI Programmer's Interface) in Windows. ASPI is a layer of software that runs in the background in Windows, and it manages all sorts of devices, helping them to work and play well together. These include not only SCSI devices, but also ATAPI and IDE drives as well. The ASPI layer that ships with Windows is quite marginal at best, and may cause you some problems. It's best to update your ASPI layer if possible. For example, if you have a real Adaptec SCSI card in your PC, you can find updates here:

<<http://www.adaptec.com/support/faqs/asplayer.html>>

If you have another vendor's card, you can find updates to the ASPI layer on your card manufacturer's website.

When setting up your SCSI system on Basilisk II, please keep some things in mind:

- **Try to stick to CD-ROMs and CD-Rs in the SCSI tab.** Setting up SCSI hard disks via this method is extremely risky. You can risk data loss if things are not set up just right.
- **If you are using a SCSI or IDE drive in Basilisk II, make sure that this drive is *not* available in Windows.** The reason is that if Windows tries to write data to the drive, and the Mac tries to do the same, you can lose data. Basilisk II will warn you if you are about to try dual-mounting a hard drive under Macintosh and PC.
- **Basilisk II has a problem differentiating fixed (non-removable) drives and removable drives.** For example, if you're installing a ZIP drive, Basilisk II may give you some warnings.
- **Zip Drives can be added to Basilisk II in many ways in addition to the SCSI option.** You can add them via the Disk tab ([page 23](#)), the My Computer tab ([page 30](#)), or, of course the SCSI option discussed here. If you are going to use the SCSI option, make sure that you install the IomegaWare software package which includes the Iomega driver and ZIP software:

<http://www.iomega.com/software/featured/ioware25_mac_reg.html>

- **When trying to use normal SCSI CD-ROMs (non CD-R), you should have few problems under the Windows NT/2000 version of Basilisk II; the Windows 9x version may require a bit more work.**

The reason for this is that there is an emulated CD-ROM drive included in the NT/2000 version of Basilisk II that hasn't made it into the Windows 9x version. If you are having problems with SCSI CD-ROMs under this Windows 9x version of Basilisk II, you may need to mount the CD-ROM using the SCSI setup tab. If the Mac OS doesn't support your CD-ROM, you can check out CD-ROM Toolkit for Mac OS which adds drivers to the Mac OS for non-supported CD-ROM drives:

<<http://www.fwb.com>>

- **There have been reports with Apple's CD-ROM drivers and SCSI ID 0.** If you do need to install a SCSI CD-ROM, don't install it onto SCSI Slot 0. Instead, install the CD on any other open SCSI slot.
- **Basilisk II has problems with asynchronous SCSI commands, but supports synchronous commands well.** So what is the difference between the two?

- **Synchronous SCSI Command** - Let's say that you have a SCSI device that you need to copy a file from to your hard disk file (*see page 23*). In the Mac OS, you drag the icon of the file from the SCSI drive to your file disk. The Mac OS sends a command to the SCSI drive to copy the file, and then waits for the drive to finish copying the file. When the Mac OS finishes copying the file, the SCSI drive sends a message to the Mac OS letting it know that things are done.

- **Asynchronous SCSI Command** - Now let's say that you're making that same file copy in the above example, except that now you're using an asynchronous SCSI scheme. The Mac OS sends the command to the SCSI drive, but does not sit and wait for the drive to complete the copy. It returns control to you. On a normal Macintosh, the OS is informed when the copy completes. On Basilisk II, this doesn't work so well. There have been reports of SCSI

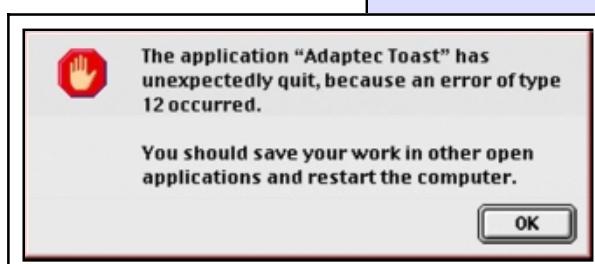


Figure 1-18:

If you see this application error when trying to start up Toast 4.x, update to the newest version on the Adaptec website. This should solve the problem.

tape backup drives not working properly on Basilisk II's SCSI.

- **Toast 4.x does have some problems running on Basilisk II.** When I installed and booted it, I got the error shown in Figure 1-18. Updating to the newest version of Toast, which is currently version 4.1.2, seems to solve the problem. you can grab the update here:

<<http://www.roxio.com>>

Port Settings...

Pre-USB based Macintoshes had two main ports for communicating with external devices such as modems and printers, and both of these were serial ports (except for the original MacPlus, which included both a serial and parallel port). These ports were set up as a Modem Port

and a Printer Port, although they were interchangeable. Basilisk II allows you to map these two ports to your PC's COM or LPT ports. You also have the option of skipping the ports altogether by forcing Basilisk II to write the printer or modem output to a file on your hard disk. To do this, select the File option in the drop down listing next to either Modem port or Printer port. The file's path shows up in the File text field. You can take the default of C:\B2TEMP.OUT or specify your own path and file name. Never fear if

Figure 1-19:

The Basilisk II Ports tab. Use this tab to set up how Basilisk II communicates through the serial and printer ports.



you don't know how to set up printing or modems on a Mac. Chapters 7 and 9 take you through these functions, so just hang in there.

Ethernet...

Basilisk II is blessed with the ability to share your PC's network connection if you happen to be on an ethernet system. It comes complete with special ethernet drivers compatible with all flavors of Windows 9x, Windows Me, Windows 2000, and Windows NT (for more information on Basilisk II's networking talents, check out Chapters 8-10). Here's a brief breakdown of the options on this tab.

Network card NDIS driver

This option displays the current driver of your ethernet card. What makes more sense, however, is that this listing lets you pick which ethernet card to use for Basilisk II networking. If you have two or more ethernet cards on your PC, then you may see more than one option on this listing. However, you will more than likely have only one card, and so the option that appears (other than None) is the current card installed on your PC. If you wish to disable ethernet networking completely within Basilisk II, make sure that you select the None option in this list.

Network address

The network address is a hardware-based serial number identifying your ethernet card. When Basilisk II detects your ethernet card, this number is automatically placed in this box.

Optional “fake” hardware address (12 digits, no spaces)

In case you are running an Appleshare server on your Basilisk II system, you may need to enable this option. Make sure that you know for a fact that this “fake” address doesn't conflict with any other

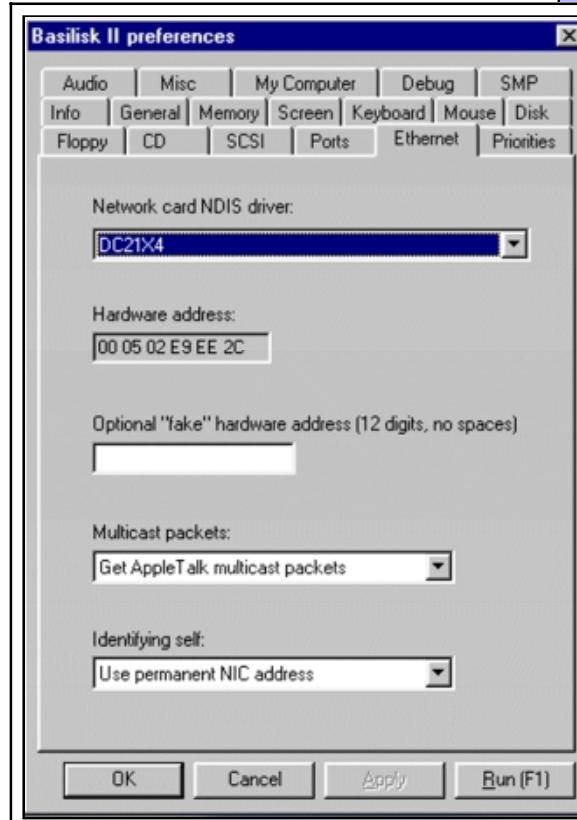


Figure 1-20:

The Basilisk II Ethernet tab. Use the options on this tab to help Basilisk II share your PC's ethernet networking settings.

network cards on your computer's network. Also, you may need to enable the Promiscuous mode (described below). It's pretty easy to come up with a fake hardware address. Simply copy your real hardware address and change one number or letter.

Multicast Packets

The internet is made up of what are known as packets. Information is not sent or received in one big chunk to or from your computer. The data is split up in multiple pieces of data called packets. Now, let's go one step deeper. On an ethernet network, there are two main types of packets. The first type is earmarked for only one computer. The second type is addressed to many different computers, and are called, not coincidentally, multicast packets. These multicast packets also probe other computers on the network to find out who they are. So knowing these facts, the Multicast packets option controls what low level packets are sent from the network to Basilisk II.

The first option, Get AppleTalk multicast packets, is set up as the default option. With this setting enabled, Basilisk II sees only those packets relevant to the Macintosh's networking. The second option, Get all multicast packets, tells Windows to rout all packets not targeted to any certain computer to Basilisk II. This could be packets meant for other Macintoshes running on the network; note that they are still relevant to the Macintosh's network. The third option, Promiscuous mode (ALL), tells windows to send not only those packets meant for Basilisk II to the Macintosh, but also to send packets targeted to other computers. This means that some of those packets might have absolutely nothing to do with Basilisk II. As noted above, this option may be necessary if you have an AppleShare server running on the same computer that is running Basilisk II.

Get the Info...

Watch out! Make sure that you have permission to use Basilisk II on your company's network if you are trying to set it up at your workplace. Using the promiscuous mode uses the same techniques as network "sniffers", tools sometimes used by hackers to find vulnerabilities in computer networks. You may find yourself accused of trying to hack into the network. When in doubt, DON'T do it. It might cost you a job.

Identifying Self

This parameter has two drop down listing options: Use current NIC address and Use permanent NIC address. For most systems, there is no difference between the two options. As noted above, the Network Interface Card (NIC)'s address is hardwired into the card itself. So the current address is always going to be the permanent address. So why add the distinction between the two types? Some NICs can be programmed with an alternate hardware address. This is usually set up using a special control panel that ships with the card itself. If this describes your card, then Basilisk II should be set to use

the current hardware address. This way, you will not have to worry about Basilisk II picking the wrong address. It will simply use the one that is currently set in your card's control panel.

Router...

As good as the ethernet is in Basilisk II, its emulation magic doesn't stop there. Imagine being able to share your PC's internet connection with the Macintosh, no matter what kind of connection you have. Do you have a dial-up connection? How about a high speed DSL or cable modem? Or perhaps you're more in tune with using a local area network hooked up to ISDN or a T3. It doesn't matter; using the Router function in Basilisk II automatically passes the bulk of Macintosh internet packets right into the emulated Mac, so you can now browse the web with Basilisk II right alongside your PC.

Enable NAT/Router module

Checking this item activates the internet connection sharing.

FTP ports

Generally, FTP programs won't work properly with the Router function unless they are in passive mode. This simply means that when you try to download a file from an FTP server, the server will try to actively make a connection to your computer. The Router in Basilisk II doesn't like this. However, when the FTP server is in passive mode, it waits for your computer to initiate the file transfer, hence the term "passive". Unfortunately, not all servers and software support passive mode FTP. If this is the case, you'll need to specify the exact port in which the FTP server is trying to contact your computer. Lauri has already included one such port: 21. You can add or delete ports via the Add and Delete buttons.

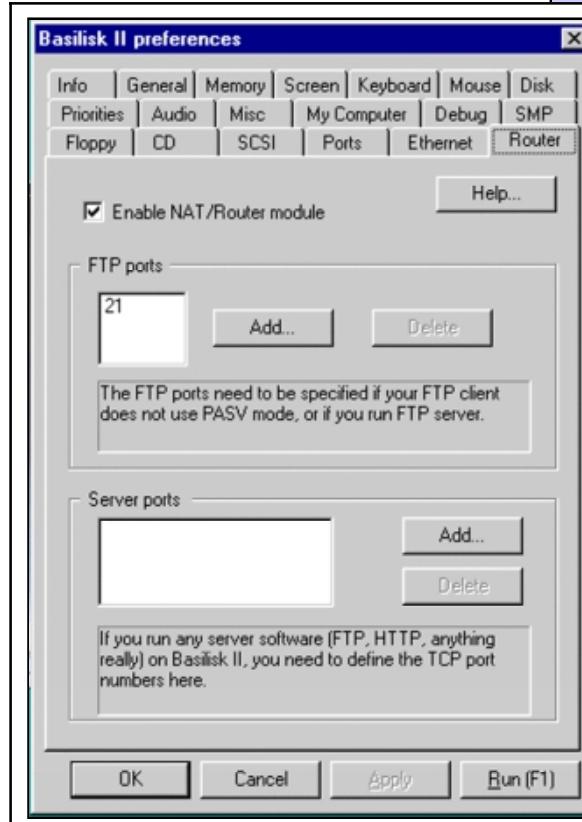


Figure 1-20:

The Basilisk II Router Tab. Share your PC's internet connection with ease using this function.

☒ Server Ports

If you plan on running any server software on your emulated Macintosh (e.g., a web server), you'll need to specify the exact ports that those servers use in this box. You can add or subtract port numbers by hitting the Add or Delete buttons.

Priorities...

Basilisk II is made up of a variety of different components. Each of these components work in concert to emulate a Macintosh computer. (*For a description of these items, please see [pages 33-35](#)*). But there may be times when you might want to adjust the priority that Windows gives each of these components. The Priorities tab allows you to do this. You can set priorities for each option to Lowest, Below normal, Normal, Above normal, and Highest. Basilisk II also lets you set up how the

Macintosh will behave when Basilisk II is the front most application, and when it is running in the background by setting the priorities on the two columns Basilisk II active and Basilisk II inactive. Obviously, you would set the greatest priorities for when Basilisk II is active, and set the lesser priorities when Basilisk II is in the background so that it doesn't hog your computer's resources when you are trying to get work done in other applications.

To illustrate how these priorities work, consider this scenario. Let's say that you aren't worried about

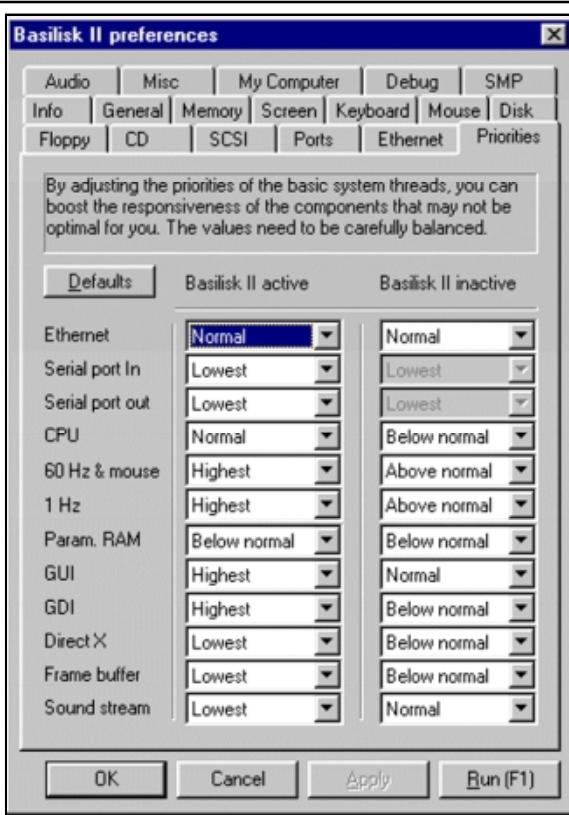


Figure 1-21:

The Basilisk II Priorities tab. Use these options to weight the various options available in Basilisk II by the amount of processor time each task gets.

the serial port and ethernet functions, as you're not going to be doing any internet browsing in your emulated Macintosh. You do, however, want to speed up the graphics and increase the sound quality. To accomplish this, you can lower the priority on components not used for graphics and sound:

- **Ethernet, serial ports, and parameter RAM** would be set to *below normal* or *lowest*.
- **1 Hz** would be set to *normal*.

You would then raise the priorities on all elements dealing with graphics and sound.

- **60 Hz & Mouse, GUI, and Sound stream** would be set to *above normal* or *highest*.
- **GDI, DirectX, or Frame buffer** would be set to above normal or highest, depending on what graphics mode you are running Basilisk II in. For example, if you're running in GDI mode, you might set the GDI priority to *above normal* or *highest*, and reduce the priorities on DirectX and Frame buffer.

Of course, the emulated CPU must be set to at least *normal*. Without a main brain, your emulated Mac will really slow to a crawl.

Many other configurations are possible, and the best teacher is trial and error. If you want to start over anew, you can always hit the Defaults button. This resets Basilisk II back to its normal parameters before you started changing the priorities.

Get the Info...

A word of caution on setting priorities: if you set one priority too high, it will adversely affect the other priorities. For example, setting the CPU to highest will cause the graphics to become jerky. This is because more of your PC's (real) CPU is being used to emulate the 680x0 processor, and this takes away from its ability to process the graphics functions in the Mac OS, thus slowing them down. Again, trial and error are the best teachers.

2: Chapter Getting a Macintosh ROM ...

Chapter Objectives:

- Why Do I Need a Macintosh ROM?
- The Legal Issues Involving a Macintosh ROM
- The ROM Extraction Process

In order for Basilisk II to run properly, it requires a Macintosh ROM image, which is analogous to a PC's BIOS. On a real Macintosh, the information to run the computer is contained in a special chip, or set of chips, called ROMs (standing for Read Only Memory). Basilisk II needs the information from these ROM chips in order to function. This chapter outlines the steps needed to extract the information from a real Macintosh's ROM, save it to a file on a floppy disk, and then transfer it over to Basilisk II. Of course, this requires a real 68k based Macintosh.

Is It Legal to Use a Mac ROM?

First and foremost, the information contained in this chapter *cannot* be used on a Macintosh system that you do not own. It is illegal to extract the ROM image from a Mac unless you actually own it. If you go to a friend's house and use his or her Mac to get a ROM, you're breaking the law. I won't condone this. Second of all, this chapter does not cover PowerMacintosh systems. As stated in Chapter 1 (*see page 7, Where Does Basilisk II Fit Into the Picture*), Basilisk II will only emulate 68k based Macintoshes. These are the Macs that run on the Motorola 680x0 line of processors. Also, ROMs from especially old Macintoshes (such as the original Mac 128k and the MacPlus) will not work with Basilisk II. You are safe with Macintosh systems that use a 512k or 1mb ROM. These include most of the color Macintoshes (again, excluding the PowerMacs) such as the Mac II line and the Quadra models, and even the MacClassic II.

Getting Started: Getting What's Needed...

In order to extract a ROM from your real Macintosh, you will need to have a Macintosh boot disk containing a special program called GetROM. The Windows version of Basilisk II contains this program, but because Basilisk II is a Windows package and GetROM is designed to run on a real Macintosh, GetROM must be stored in a special format that will keep its resource fork intact (*see Get the Info... on page 30*). So we need to transfer GetROM to a real Macintosh, decode and decompress it there, and then run it so that it can capture the Macintosh's ROM information. The following information explains how to use a Macintosh file disk (*see Disk Options, page 23*) to create a real Macintosh disk that can then be run on a real Mac to extract the ROM image. We'll then go on to installing the ROM image for use in Basilisk II on your PC.

Before getting started, you'll need a few supplies.

A real 68k Macintosh, *that you own*.

HFV Explorer, a utility that allows your Windows computer to read Macintosh disks. You can get HFV Explorer here:

<<http://gamma.nic.fi/~lpesonen/HFVExplorer/Hdexp131.zip>>

A Mac-formatted file disk that contains GetROM. You can get just such a file disk that contains GetROM here:

<<http://www.kearney.net/~mhoffman/basiliskII/manual/getrom.hfv.zip>>

Both of these files are compressed in ZIP format, and need to be decompressed using a utility such as Aladdin Expander:

<http://www.aladdinsys.com/expander/expander_win_login.html>

I suggest that you decompress these files to your Basilisk II directory to keep things organized. Once this is done, we're ready to create a Macintosh boot floppy.

Phase I: Creating the Mac's Boot Disk

1. Put a blank, high density floppy disk into your Windows PC's drive, and double click HFV Explorer.

This brings up the HFV Explorer screen, which is similar to Windows Explorer. After some floppy disk activity, you should see a screen similar to Figure 2-1, listing all of your Windows drives.

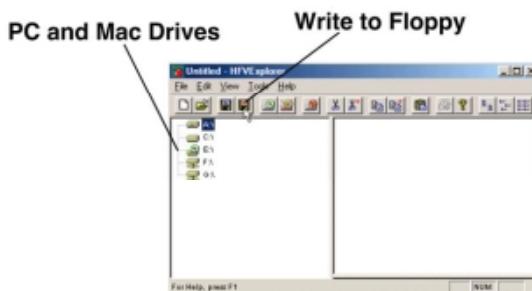
2. Now click the Write Floppy icon across the top of the screen.

A new screen pops up. Make sure that the box next to Floppy Drive reads A:. In the Volume File Path field, make sure that the path points to the Macintosh disk image that you downloaded and decompressed in the previous steps. If need be, click the browse button (the button that has two greater than symbols on it) to navigate to the disk image. The image should be called get_rom.hfv. Click OK. This writes the contents of the GetROM disk image to the floppy in your PC's floppy drive, in Macintosh HFS Standard format. When the process is

completes, and it may take several minutes, you should see a warning message that states that you now have two volumes with the same name. First, eject the floppy from the PC's drive.

Figure 2-1:

The HFV Explorer screen. Hit the Write to Floppy button to write a Macintosh file disk to a real floppy. It's the fourth button from the left.



Then, click OK and exit HFV Explorer.

Congratulations! We now have a Macintosh formatted disk with the GetROM program installed onto it. We now move onto phase II.

Phase II: Getting the ROM From Your Mac...

You now have the GetROM program on a Macintosh disk, in Macintosh format. You're ready to run it on a real Macintosh. This phase covers the process of extracting the real ROM image from the Mac. Of course, you'll need your real Macintosh.

1. Start up your Macintosh with extensions turned off.

You do this by holding down the shift key on the Mac's keyboard when first starting it up until you see the words Extensions Off printed on the screen.

Get the Info...

Why do you need to start the Mac with Extensions off? Extensions are additions to the Mac OS that, well, *extend* its abilities. But sometimes, there might be an extension in your startup that could cause problems with the ROM extraction process, giving you a ROM that's corrupted. It's best to disable them during this phase.

2. Place the GetROM disk in the Mac's floppy drive.

Once you put the disk in the Mac's drive, you should see one window open similar to Figure 2-2. If you don't see this window, simply double click the Get ROM disk icon on the right hand side of the screen.

3. Double click the icon marked GetROM.

This extracts the information from the Macintosh's ROM and saves it to the floppy disk. The GetROM program should save a file called ROM, and place it right next to the GetROM icon.

4. Eject the floppy from your Mac's drive.

To eject the disk from your Macintosh, simply drag the disk's icon to the trash can (Yes, this is somewhat weird; perhaps this method of disk ejection had the same thinking as the removal of floppies altogether on modern Macs. I guess Steve knows best). In any case, you now have a copy of your Mac's ROM on a floppy disk, ready to be transferred to your PC for use in Basilisk II.

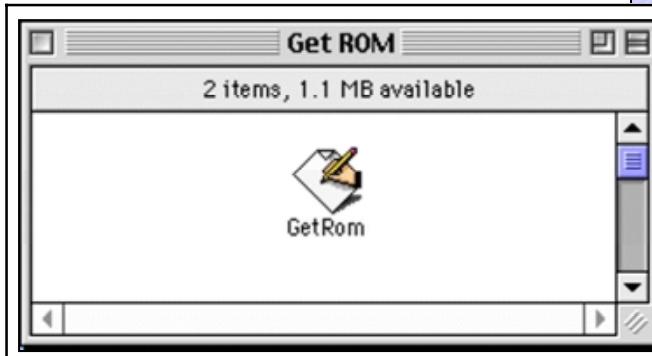


Figure 2-2:

The Macintosh GetROM program as seen on a real Macintosh.

Phase III: Copying the ROM File to the PC's Drive...

In order to get that newly created ROM file onto your Windows hard drive, we need to go back into HFV Explorer and copy that image from the Mac floppy disk to your PC's drive. The reason is that this disk is a Macintosh formatted disk, and PCs don't normally read Mac disks.

1. Put the GetRom disk in the PC's floppy drive, and launch HFV Explorer.

When HFV Explorer pops up, it displays the Macintosh disk in your PC's drive on the left side. Click this disk, shown in Figure 2-3. The contents of the disk are displayed in the right hand pane, again shown in Figure 2-3.

2. Locate the file named ROM on the right hand pane, and drag it to your PC's hard disk on the left hand pane.

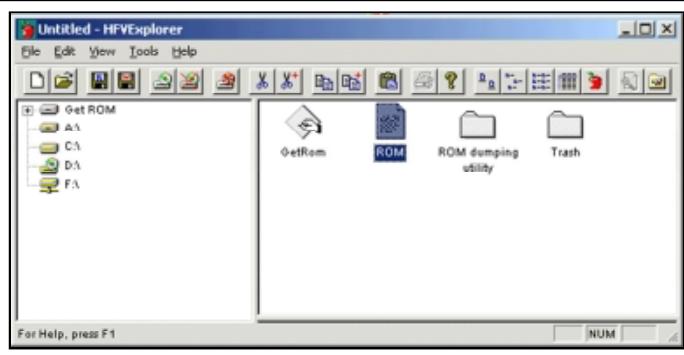
3. A new window pops up asking you to select the copy mode. From the drop down list, select Raw Copy, Data Fork.

This copies the Macintosh's ROM file to the PC's hard disk. It also copies only the data fork of the file, since the resource fork is meaningless to the ROM file. It's just raw data.

We're almost there! Now that you have your Macintosh's ROM file on your PC, you can import it into Basilisk II.

Figure 2-3:

The HFV Explorer screen after inserting the Macintosh floppy disk.



Phase IV: Importing the ROM Into

Now that you have the Macintosh's ROM on your hard disk C:\ drive, you can transfer it to anywhere you need to. The most obvious place to copy it to is your Basilisk II directory. You can then tell Basilisk II where to find the ROM file by starting up the Basilisk II GUI and

Location of ROM on PC's Hard Drive

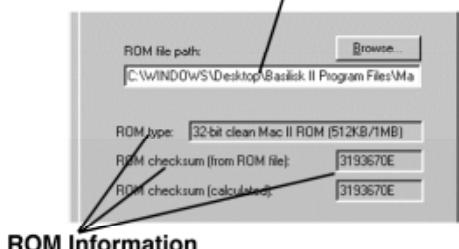


Figure 2-4:

The ROM location on the Memory tab.

going to the Memory tab. You can either type the path directly into the ROM file path box or hit the Browse button to navigate to the ROM.

Get the Info...

One very important point to remember when using a ROM image is to make sure that the checksum values match. These are shown in Figure 2-4. If they don't match, then there is something wrong with the ROM. One possible cause might include some sort of extension that is corrupting the ROM during the capture process. Make sure that you followed the step of turning off the Macintosh's extensions by holding down the shift key while the Mac boots.

Where Can I Find a Macintosh ROM?

First of all, you need to own the Macintosh that the Macintosh ROM comes from. So the question then becomes where can you find a good, used Macintosh system? There are many good places where older Macintosh systems can be found, and so the following list is only the tip of the iceberg. But it should get you going in the right direction.

- ❑ E-Bay Online Auctions <<http://www.ebay.com>>. This site contains many auctions, and includes many used Macintosh systems. Just do a search for "Mac II".
- ❑ Sun Remarketing <<http://www.sunrem.com>>.
- ❑ Junkman Recycling
100 East 8th Street
Kearney, NE 68847
308-236-8996
- ❑ Mac ResQ <<http://macresq.com>>.
- ❑ Mac of All Trades <<http://www.macofalltrades.com>>.
- ❑ Liquidation Station <<http://www.liquidationstation.com>>.
- ❑ Shreve Systems <<http://shrevesystems.com>>
- ❑ DataTech Remarketing, Inc. <<http://www.datatech-rmkt.com>>.
- ❑ MegaMacs.com <<http://megamacs.com>>.
- ❑ Mac Power <<http://www.macpowerinc.com>>

3: Chapter **Installing Mac OS 7.5.3..**

Chapter Objectives:

- Downloading All Components Needed for Installation
- Assembling the Mac OS 7.5.3 Segments
- Installing Mac OS 7.5.3 on Basilisk II

Now that you have a ROM image for Basilisk II to work with, you need to install a working Macintosh operating system, also known as the Mac OS. Just like Windows, there have been many different versions of the Mac OS. Unlike Windows, however, Apple has released certain versions of its OS to the public domain, downloadable from the internet. The most current, full release is Mac OS 7.5.3, which can be updated to Mac OS 7.5.5 with a patch program, again available on Apple's FTP servers.

Getting Started...Getting What's Needed...

Before getting started, here's a list of some utilities that you'll need.

Mac OS 7.5.3

Mac OS 7.5.3, as described above, is available from Apple's FTP site:

<<http://asu.info.apple.com/swupdates.nsf/arignum/n11258>>

Make sure that you download the items marked Binhex only. You don't need to download both sets. Also, when downloading the files, do not allow WinZip, Aladdin Expander or any other decompression

program to alter the files in any way. Simply save them in a separate directory. For clarity, let's name the directory Mac OS 7.5.3 Install Segments. Mac OS 7.5.3 is made up of 19 separate downloadable parts, the average size of which is about 1.5mb. Once imported into Basilisk II, these parts assemble themselves into one archive from which we can install Mac OS 7.5.3.

☒ A bootable Macintosh startup file disk containing a copy of Stuffit Expander

In order to install Mac OS 7.5.3 on Basilisk II, you first need to be able to boot Basilisk II. Also, since the different parts of the OS are in Binhex format to keep the resource and data forks intact (*see page 30, Get the Info...*), you need to use Stuffit Expander to decode these files into a format that the Macintosh can understand. You can pick up a copy of this file disk here:

[<http://www.kearney.net/~mhoffman/basiliskII/manual/macosinstall.dsk.zip>](http://www.kearney.net/~mhoffman/basiliskII/manual/macosinstall.dsk.zip)

This file disk is in Zip format, so you'll need to use a copy of WinZip or the Windows version of Aladdin Expander to decompress it on your PC:

[<http://www.aladdinsys.com/expander/expander_win_login.html>](http://www.aladdinsys.com/expander/expander_win_login.html)

After you decompress the file, put it in your Basilisk II directory.

Phase I: Preparing the Boot Disk and the Mac OS Files...

Now that you have all the files downloaded to your PC, you're ready to get things up and running in Basilisk II. Before you know it, you'll be a Mac OS pro!

1. Start up the Basilisk II GUI and click the General Tab. Make sure that the Model ID is set to 7 (Mac IIfx), the CPU is set to 68030, and make sure that the FPU is turned off.

It is especially important that the FPU be turned off. If it's on, the 19 separate segments of the Mac OS installer won't assemble and the emulated Macintosh will crash. When you're finished installing Mac OS, you can reset the CPU type back to 68040 and turn the FPU back on.

2. Click the Disk tab and move the disk named macosinstall.dsk to the Installed disks column.

If you decompressed the macosinstall.dsk file to your Basilisk II directory, you should see it in the Available disks column. Simply double click it to move it over to the Installed disks column. If you

don't see the macosinstall.dsk in the Available disks column, you can always hit the Browse button to find it.

3. Click the Create button under the Available disks column.

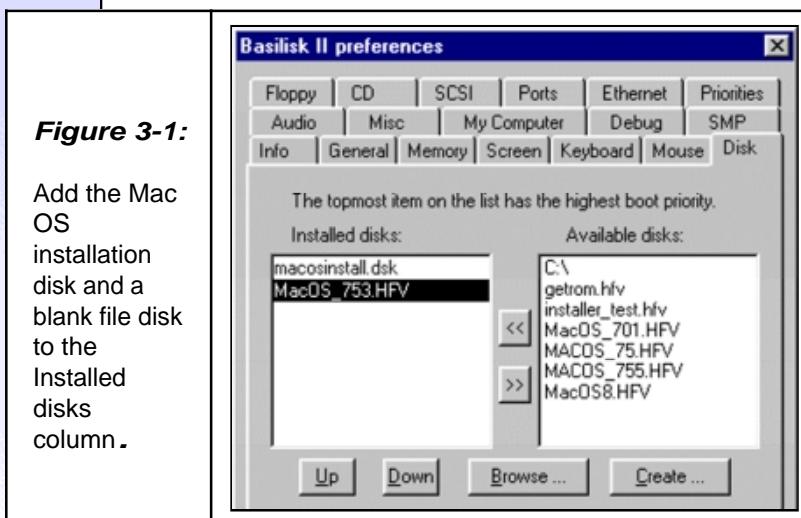
We need to create a new hard disk file to install Mac OS 7.5.3 onto, and this is the place to do it. In the Path field, type the text:

MacOS_7.5.3.hfv

Now that we've named our new hard disk, we need to tell Basilisk II how big to make it (if only making real hard disks were this easy). In the size field, specify any size that you'd like, providing that it's at least 150mb. Anything smaller, and we're just asking for trouble. Once you have this entered, click OK. Basilisk II's Installed disk column should look similar to Figure 3-1.

4. Click the My Computer tab, and make sure that the My Computer option is turned on, and that the C: drive is checked.

5. Click the Screen tab, and set Basilisk II to open in a windowed mode. You do not want full screen mode.



Macintosh hard disk file.

We need to have My Computer turned on, because once Basilisk II boots, we're going to move the folder Mac OS 7.5.3 Install Segments to the new, blank

6. Click Run, or hit the F1 key on your keyboard.

Basilisk II now boots from the macosinstall.dsk file disk.

Phase II: Copying and Decoding the Mac OS Files...

Once your emulated Macintosh finishes booting, you should see a



requester similar to Figure 3-2. The Macintosh is unable to read the new file disk that we just created, and needs to format it.

1. Type and name in the Name box and click Initialize.

Note that this does not format your Windows PC's drive. It only formats the Macintosh file disk that we created in Phase I: step 3.

Yet another warning message pops up. No one ever said that Apple wasn't redundant. Click Continue to format the disk.

2. Minimize Basilisk II's window by clicking the minimize gadget in the upper right corner of its window.

Why? There's method to the madness. We need to get back to the Windows desktop. You see, unbeknownst to anyone, Basilisk II created a special folder in the Basilisk II folder called Virtual Desktop. This is a direct link between the Mac's world and your PC. We need to copy the Mac OS 7.5.3 Install Segments folder containing the 19 separate segments to the Virtual Desktop folder.

3. Locate the Mac OS 7.5.3 Install Segments folder and copy it to the Virtual Desktop folder. The Virtual Desktop folder is located in the Basilisk II folder.

For example, on my system, my Virtual Desktop folder is located inside my Basilisk II folder (named b2) on the Windows 98 Desktop:

C:\windows\desktop\b2\virtual desktop

4. Bring Basilisk II back by clicking it on the

Windows Task bar.

Sometimes Basilisk II will pop back up automatically, almost to levels bordering on annoyance.

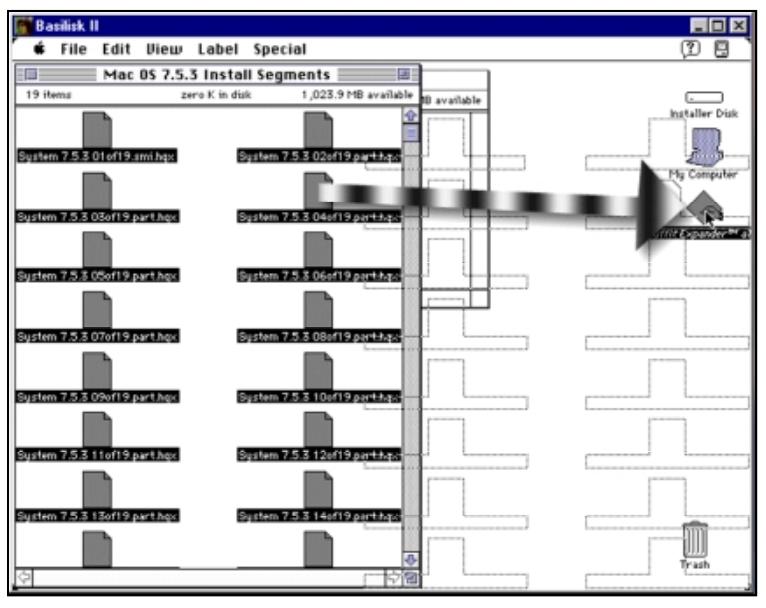
5. On the Mac's desktop, double click the My Computer icon.

A new window pops up showing your PC's drives (represented by folders). You should also see a folder named Mac OS 7.5.3 Install Segments. Isn't that neat?

6. Double click the Mac OS 7.5.3 Install Segments folder.

Figure 3-3:

Drag the Mac OS install segments to the Stuffit Expander icon on the Mac's desktop.



7. Click the Edit menu at the top of the screen and click Select All... .

8. Drag the icons from the Mac OS 7.5.3 window to the Stuffit Expander Alias icon on the right side of the Mac's screen. This is shown in Figure 3-3.

Stuffit Expander does the rest. It decodes each file, one by one, until all 19 are converted to a format that the Macintosh can understand.

9. Close the Mac OS 7.5.3 Install Segments and My Computer windows, and then re-open My Computer.

This refreshes the contents of these two windows, as they may not always auto refresh.

10. Copy the Mac OS 7.5.3 Install Segments folder to the Mac OS 7.5.3 disk on the Mac's Desktop.

You can do this by dragging the Mac OS 7.5.3 Install Segments folder right on over to the Mac OS 7.5.3 icon on the right hand side of the screen. The reason that we need to perform this copy is that the 19 file segments will not assemble correctly if left in My Computer. They need to reside on a Macintosh formatted disk in order for the process to work correctly, and the My Computer icon is not a true Macintosh formatted disk image.

Phase III: Installing Mac OS 7.5.3...

The next few steps outline the installation process of Mac OS 7.5.3.

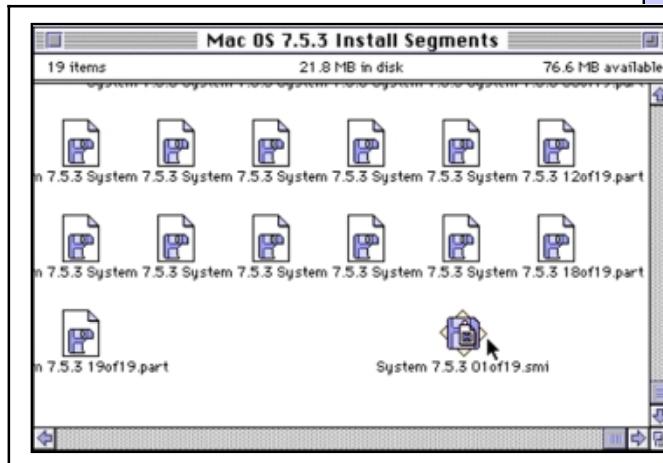


Figure 3-4:

Double-click the System 7.5.3 01of19.smi icon to assemble the 19 pieces into one.

1. Double click the Mac OS 7.5.3 disk on the Mac's Desktop and find the folder named Mac OS 7.5.3 Install Segments. Double click it. In the Mac OS 7.5.3 Install Segments window, find and double click the icon marked System 7.5.3 01of19.smi.

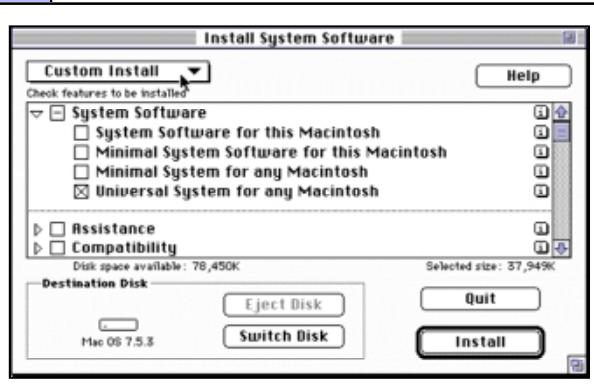
Double clicking this icon causes all 19 segments to assemble into one installer package. A word of warning here: if you get a message stating that a system error occurred because of a "...bad F-Line instruction...", you still have Basilisk II's FPU turned on. The FPU needs to be turned off for this phase of the installation to work. For more information, see *Phase I, page 54*. If you have already turned the FPU off, you can try to set the Mac's CPU setting down to 68020 on the General tab. Just remember to switch it back to 68040 after you're done with the installation.

2. After double-clicking the System 7.5.3 01of19 icon, the installer presents a license screen. Press the Agree button.

The 19 installer segments should assemble into one disk that mounts on the Macintosh Desktop, called Sys7.5 V7.5.3 CD Inst.

Figure 3-5:

Select Custom Install with Universal System for any Macintosh.



3. Double click the Sys7.5 V7.5.3 CD Inst disk.

A new window opens on the screen, and you should see an icon called Installer. Double click it, and a welcome screen pops up. Press the Continue button.

4. The next screen that pops up has a box in the upper left with the words Easy Install. Click this box, and make sure that Custom Install is highlighted. This is shown in Figure 3-5.

The options on this page change, revealing several options marked by several X boxes. On the very first option marked, System Software, click the triangle to the left of the X box to expand the list of options. In the options that are shown, click the box next to Universal System for any Macintosh. Again, this step is shown in Figure 3-5.

5. Make sure that the Destination Disk option at the bottom of the window reads Mac OS 7.5.3. If it doesn't, then use the Switch Disk button to change it.

6. Click the Install button.

The rest is automatic, as the installation takes place without your having to attend to the computer.

7. When the installation completes, click Quit, go to the Special menu at the top of the screen, and choose Shut Down. This exits Basilisk II.

Phase IV: Booting Mac OS 7.5.3...

The last few remaining steps to take involve some cleaning up, and then booting 7.5.3 under Basilisk II.

1. Launch the Basilisk II GUI and click the Disk tab.

2. Click the macosinstall.dsk once, and then click the Down button.

This moves the macosinstall.dsk down in the boot priority, below your newly created Mac OS 7.5.3. The macosinstall.dsk disk will still mount the next time you start up Basilisk II; the Mac just won't boot from it. The reason that you want to keep this disk in the lineup is so that you can use Stuff Expander. Stuffit is quite useful for decompressing and decoding many Macintosh archives on the internet, as we've seen in just this tutorial. It's also necessary if you want to install the Mac OS 7.5.5 update.

3. Click Run.

Basilisk II should now boot normally with Mac OS 7.5.3.

Updating to Mac OS 7.5.5...

Apple released a minor revision to Mac OS 7.5.3, dubbed Mac OS 7.5.5. Most of the additions to 7.5.5 were intended for PowerMacintosh computers, and will therefore not be of much help to Basilisk II users. But, if you want to update to 7.5.5, you can pick up a copy on Apple's web site here:

<<http://asu.info.apple.com/swupdates.nsf/artnum/n10561>>

The installation process of Mac OS 7.5.5 is much the same as with 7.5.3. I recommend downloading the single download instead of the multi-part. You will then only have one file to run through Stuffit Expander. You can then install it in much the same way that you installed 7.5.3.

4:

Chapter Installing Mac OS 8...

Chapter Objectives:

- Updating 7.5.3 to Mac OS 8
- Installing Mac OS 8 From Scratch
- Creating a Macintosh File Disk to Install Onto
- Installing Mac OS 8

Now that you're reached this chapter, I'm going to assume one of two things. One, you have already installed Mac OS 7.5.3, and you are looking to upgrade to Mac OS 8, or two, you already have a copy of Mac OS 8 and don't want to bother installing 7.5.3. Either way, we've got you covered in this chapter. Either way, you'll be up and running with Mac OS 8 in no time at all.

The Legalities Mac OS 8...

Unlike Mac OS 7.5.3, Mac OS 8 currently is not free for download. So if anyone tells you that he or she has a download copy of Mac OS 8 on the internet, beware: it's not legal for you to download it. You must pay for the copy of Mac OS 8 that you install on Basilisk II. Legitimate copies of Mac OS 8 can be found at many sites on the internet. Please consult the listing on [page 52](#) for starters. E-Bay is one of the best places to start.

Getting Basilisk II Ready for the Install...

Regardless of whether you are installing Mac OS 8 from scratch onto a blank hard disk or upgrading your existing Mac OS 7.5.3 to version 8, you'll need to make sure that a few things are in working order.

- 1. Open the Basilisk II GUI and click the CD tab. Make sure that the CD-ROM enabled box is checked, and make sure that all CDs on the right are moved to the Installed CDs field on the left.**

These steps ensure that Basilisk II is set up and ready to go with CD-ROM access. If you have any CD drives residing in the Available CDs pane, move these drives over to the Installed CDs by double clicking them.

- 2. Click the General tab and set the Model ID to 20 (Mac Quadra 950). Make sure that the CPU is set to 68040. Click OK to ensure that these settings get saved.**

Phase I: Preparing For a First Time Install of Mac OS 8...

This phase assumes that you have not installed Mac OS 7.5.3 (or any other Mac OS for that matter), and are therefore wanting to install Mac OS 8 from scratch. That being said, we need to create a hard disk file on which to install OS 8. Mac OS 8 comes packaged on a bootable CD, and so the installation process is much easier than with 7.5.3. We'll start by opening the Basilisk II GUI again, which should be getting pretty familiar by now.

- 1. Click the Disk tab and click the “Create...” button.**
- 2. On the screen that pops up, enter a name that you would like to call your new disk. In the example in figure 4-1, the name is Mac OS 8 for Basilisk II.hfv.**
- 3. Enter the size that you would like the disk to be. Enter at *least* 150mb and click OK.**
- 4. Put the Mac OS 8 CD in your PC's drive, wait a few seconds, and hit the F1 key on your keyboard.**

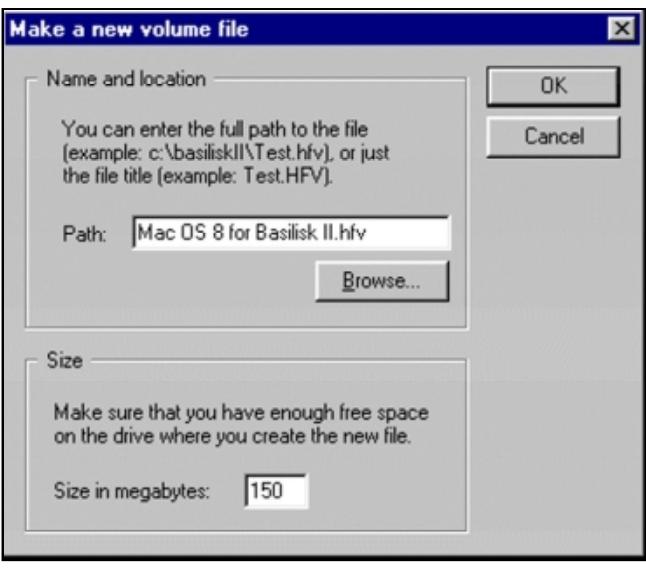
Basilisk II should boot right up using the Mac OS 8 CD. Once the boot up process completes, the Mac informs you that one of your disks is unreadable and needs to be formatted. This is the disk that we just created a moment ago. The Basilisk II GUI does not create formatted hard disk files, and leaves that part of the puzzle up to you and the Mac OS.

5. Type a name for the disk and click Initialize.

To keep things simple, I named the disk Mac OS 8 for Basilisk II, similar to the name that I gave it in Windows a moment ago. After hitting Initialize, the Mac will confirm whether or not you want to format this disk. Tell it to continue. The formatting process will not take long, and will most likely finish within a few seconds. Keep in mind that this does not erase your PC's hard disk; only the Mac's.

Figure 4-1:

Creating a new file disk to install Mac OS 8 onto.



Get the Info...

So what's the difference between the name that you gave the file disk in the Basilisk II GUI setup, and the name that you gave the file disk in the actual Mac OS? As explained in the Disk Options on page 23, Basilisk II boots from single files called file disks. These disk appear as a single, large file to Windows, but appear as an entire hard drive to Basilisk II and the Mac. Since this is a single file in Windows, we need to give it a file name. After booting into the Mac OS, we need to give the actual disk a name so that the Mac knows how to refer to it. So the first part is naming the PC file; the second part is telling the Mac OS what to call this file disk.

Phase II: Installing or Updating to Mac OS 8...

Now we're ready to install Mac OS 8. Whether you're starting from scratch or updating your Mac OS 7.5.3 to Mac OS 8, you're in good hands from here on out.

1. If you are upgrading your previous install of Mac OS 7.5.3, make sure that your Mac OS 8 CD is in your CD-ROM. Launch Basilisk II as you normally would. Once the boot process completes, you are ready to start installing Mac OS 8.

2. If you're installing OS 8 from scratch, then you already have Basilisk II booted using the Mac OS 8 CD. You're now ready to start installing OS 8.

When all is said and done, you should be looking at a window similar to that in figure 4-2 below. This is the main window that automatically opens when the Mac mounts the Mac OS 8 CD.

3. Double click the icon marked Mac OS Install.

This launches the main Mac OS installation program. The first thing to hit you is a welcome screen that outlines some of the various steps needed to install OS 8. Click the Continue button to move on to the next screen, which should look similar to the screen shown in figure 4-3. Make sure that the field marked Destination Disk reads "Mac OS 8 for Basilisk II". If it doesn't, click the title in the blank and choose the Mac OS 8 for Basilisk II selection.

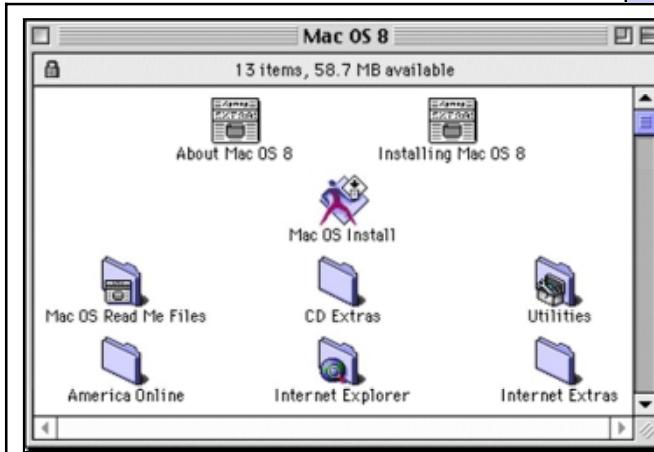


Figure 4-2:

The Mac OS 8 CD main window.



Figure 4-3:

Select the Mac OS 8 for Basilisk II file disk as your install location.

4. Click the Select button.

The next screen shows some late-breaking information on Mac OS 8. Once you're finished reading this, click the Continue button.

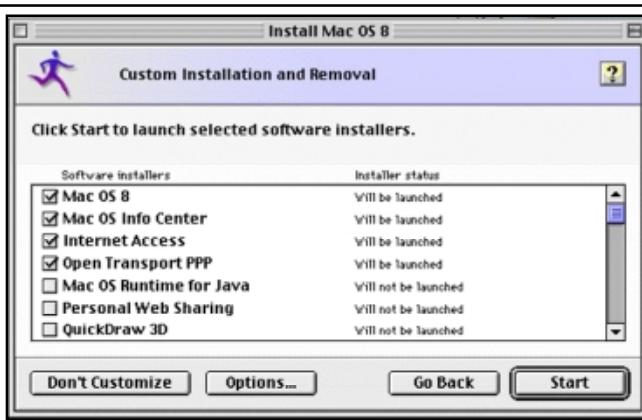
5. The Software License Agreement pops up. After reading it, click Continue, and then click Agree.

6. Click the Customize button in the lower left of the screen and select the additional options you wish to install along with Mac OS 8.

The checkboxes shown on the screen in figure 4-4 tell the installer what you want to install on your Mac. Many of them are unnecessary and some are essential. The ones that should be installed are Mac OS 8 (the main operating system), Mac OS Info Center (the included help files and online support), Internet Access (internet software), and Open Transport PPP (networking software to connect to the internet).

Figure 4-4:

Select the options that you want to install in addition to Mac OS 8.



You can also install MacLink Plus, which allows you to translate many different document formats on your Mac (Clarisworks to Microsoft Word, for example).

Figure 4-5:

Don't update those drivers!



6. Click the “Options...” button and uncheck the Update Apple Hard Disk Drivers checkbox and then click OK. Now click the Start button in the bottom right corner of the window.

7. After checking your Mac’s hard drive, the installation takes you to yet another welcome screen. Click Continue at the bottom right.

Get the Info...

So why is the Mac OS 8 installer so complicated? I have no idea, and that's the truth. It seems that Apple noticed this fact, too, as the installer for Mac OS 8.5 and 9 are much simpler. Unfortunately, 8.5 and 9 are for PowerMacs only, and won't run on Basilisk II.

8. In the upper left corner of the window, you should see the words Easy Install. Click here, and choose the Custom Install option.

9. From the list of options that pops up, put an X in Universal System for any supported computer, as is shown in figure 4-6.



Figure 4-6:

Choose the Universal System for any supported computer option.

The rest is automatic. Sit back or go get some coffee, as the rest of the installation may take a few minutes, depending on the speed of your PC. You may be asked some questions along the way depending on which options you chose to install.

10. Once the installation completes, click the Mac's Special menu at the top of the Mac's screen and choose Shut Down.

This should shut Basilisk II down and pop out the Mac OS 8 CD. If the CD doesn't pop out, eject it normally once Basilisk II closes.

You think we're done? Well, we're almost there. One drawback to the Mac OS 8 Universal System installer is that it installs a tiny, annoying system extension called A/ROSE that causes Basilisk II to completely crash before it even gets booted up! We need to remove this extension from the Mac's startup. This is surprisingly easy, as a task like this on a Windows machine might prove to be major surgery.

Phase III: Removing A/ROSE...

A/ROSE, short for Apple Real-Time Operating System Environment, was included in Mac OS 8 for very old Macs that used certain NuBus networking cards. Since these older cards aren't emulated in Basilisk II, this extension causes the Mac to crash almost immediately upon booting up. We need to remove A/ROSE, but first we need to boot Basilisk II with extensions turned off: safe mode, by any other name would smell just as....

- 1. Start up Basilisk II by running the Basilisk II GUI and then click Run in the bottom right corner of the window.**
- 2. As soon as the Mac's screen appears, hold down the Shift key on your keyboard until you see the words Extensions Off.**
- 3. The Mac boots normally minus all system extensions and control panels.**
- 4. Once the Mac finishes booting, click the Apple menu in the upper left corner of the screen and click Control Panels.**
- 5. This brings up the Control Panels window. Find and double click the icon marked Extensions Manager.**

This brings up the Extensions Manager, which allows us to turn on and off system extensions at will. It's a very nice tool that Windows in in

severe need of; no registry to mess with, no damaged registry keys, no...but I digress.

Once the Extensions manager loads, click the View menu at the top of the screen and select As Items.

Now, Scroll through the listing of items until you find A/ROSE. Remove the X from the box in front of it, and click Restart.

Figure 4-7:

Uncheck the A/ROSE extension.



Phase IV: Finishing Things Up...

Now that things are installed, the Mac should boot normally. The first thing to greet you is the Mac OS Setup Assistant. This assistant doesn't work correctly with Basilisk II. Close it up by clicking the close box in the upper left of the window.

Congratulations! You've just installed Mac OS 8 on your PC!



Figure 4-8:

Be sure to skip the setup assistant.

5:

Chapter Getting to Know the Mac OS...

Mac OS 7.5.3

Chapter Objectives:

- Macintosh Disks
- Macintosh Application Menu
- Macintosh Windows
- The Control Strip
- The Launcher
- The Extensions Manager
- Shutting Things Down
- Rebuilding the Desktop File

Now that you've installed the Mac OS on Basilisk II, don't you think it's high time that you had a start up guide for Windows users new to the Mac? Well, ladies and gentlemen, here's your order. After you've installed Mac OS 7.5.3 or 7.5.5, this chapter helps you get things moving. It includes comparisons to Windows to make the transition as easy as possible.

We're going to start out by discussing Mac OS 7.5.3 and 7.5.5, as these versions of the Mac OS are available for download right off Apple's website. What's the difference between the two versions? There's really not much. Most of the changes between 7.5.3 and 7.5.5 are stability improvements for PowerPC Macintoshes and Macintoshes with virtual memory turned on. Neither of these configurations will work in Basilisk II. But, if you want to update to 7.5.5, it's not going to hurt anything.

For the experienced Windows user, the Mac OS is quite similar to what you're used to. Undoubtedly, Microsoft used the Mac OS for inspiration when it created Windows 95. Many of the operations that you're familiar with in Windows were pioneered in the Mac OS, so the learning curve is quite shallow and you'll be up and running in no time.

Mac OS Basics: The Macintosh Desktop...

The Macintosh main screen area is called the Desktop. This is analogous to the Windows Desktop, and the two contain much of the same information. Both environments contain picture elements called icons. These icons can represent files, disks, programs, or shortcuts (called Aliases on the Macintosh). Double clicking these icons produces

similar effects in both OSes: double clicking a program icon launches that program.

Double clicking a file icon opens that file in the program that created it. In the event that the original program isn't found, both OSes present you with a listing of possible

alternative programs in which to open the file. The Macintosh has the Apple Menu in the upper left corner of the screen, and Windows has the Start Menu. Windows uses the Recycle Bin, and the Mac uses the Trash can. They both serve to delete unwanted files. To delete the files in the Trash can, you need to choose Empty Trash from the Special Menu.

Of course, there are differences between the two. This section helps you to make the transition so that things don't seem quite so foreign when you start using the friendliest OS around (insert sneers or cheers here).

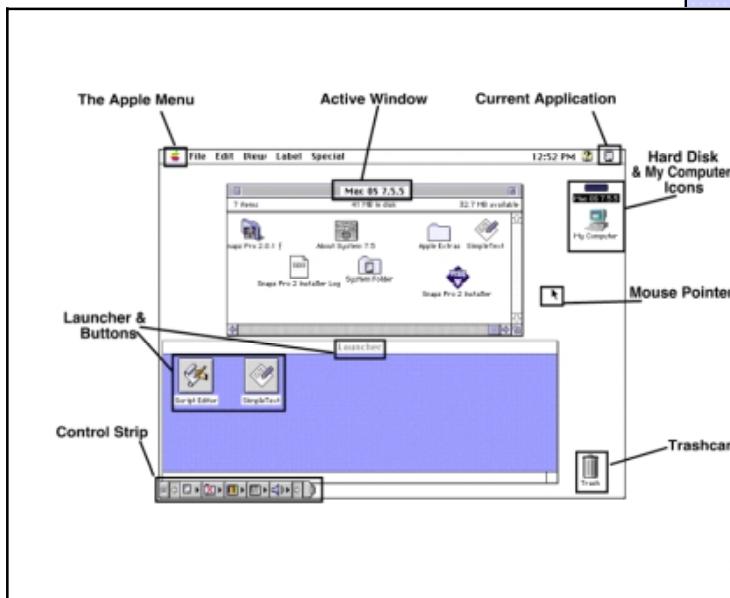


Figure 5-1:
The Mac OS 7.5.3 Desktop.

Macintosh Disks...

The Macintosh handles disks a little differently than Windows does. In Windows, when you insert a floppy disk or a non-autorun CD ROM, you really don't know that the disk is in the drive unless you double click My Computer and then double click one of the icons corresponding to your floppy or CD ROM drive. The Mac OS is a bit more efficient and direct when using disks. For example, when you insert a CD ROM, no matter if it has autoplay (the Macintosh equivalent of Windows Autorun) turned on or not, an icon appears on the Mac's desktop to let you know that there is a disk in the drive, and that it's ready to be used. To open that disk, all you need to do is double-click its icon. The same holds true for floppy disks, as well as other removable media and fixed hard disks. The only exception to this rule comes into play when we add Basilisk II to the picture. When using Mac OS 7.5.3 or above and you have Basilisk II's My Computer option turned on, Basilisk II creates an icon on the Mac's desktop called My Computer. This icon essentially acts the same as your Windows' My Computer icon. When you double click it, icons appear that represent your Windows drives. It's the best way to bridge the gap between the Mac and Windows. Basilisk II gives you a familiar starting point, especially if you know nothing about the Mac OS. These icons are shown in Figure 5-1.

Macintosh Application Menu...

The Macintosh and Windows have different ways to switch between multiple running applications. In Windows, the Taskbar lets you

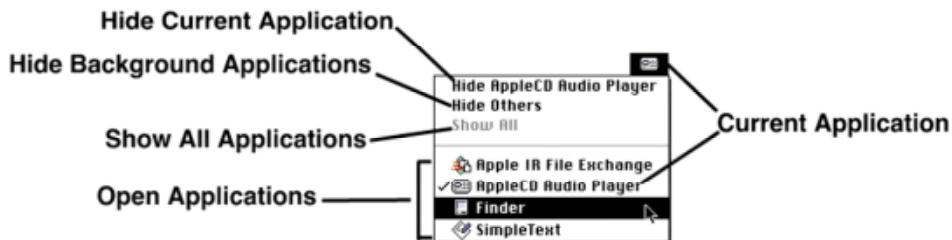


Figure 5-2:

The Macintosh Application Menu.

switch between applications. On the Macintosh, application switching is handled by the Application Menu in the upper right hand corner of the Mac's screen. The menu's icon represents the current application. When you click it, you get a listing of all running applications,

including the current application which has a check mark next to it. You can switch to another application by clicking it. You can also choose to hide the current application, hide all other background applications, or show all applications. Hiding certain applications can really help to reduce clutter on the Mac's Desktop, especially when there are many applications running at one time.

Get the Info...

You can automatically hide the current application by holding down the Macintosh's Option Key and selecting a different application from the Application Menu.

If you like the Windows Taskbar, you can always go with Action GoMac!, a wonderful Windows-like taskbar for the Macintosh. Get the info here:

[<http://www.poweronsoftware.com/site2/html/products/agm.html>](http://www.poweronsoftware.com/site2/html/products/agm.html)

Macintosh Window Elements...

Macintosh windows are quite similar to their Microsoft counterparts. There are some differences that may throw some Windows diehards, so here's a rundown of what you'll be faced with in Mac-land. Each window has its own set of "gadgets" that allow you to resize, close, scroll, and minimize. Resizing is pretty much the same on both computers, as you can see in Figure 5-3. The resize gadget is located in the bottom right corner of each window, and you can drag it to make the window bigger or smaller. Unlike Microsoft Windows, the close box is located in the upper left corner of the window instead of the upper right. Scroll arrows and scroll boxes work in pretty much the same way as in Windows. To

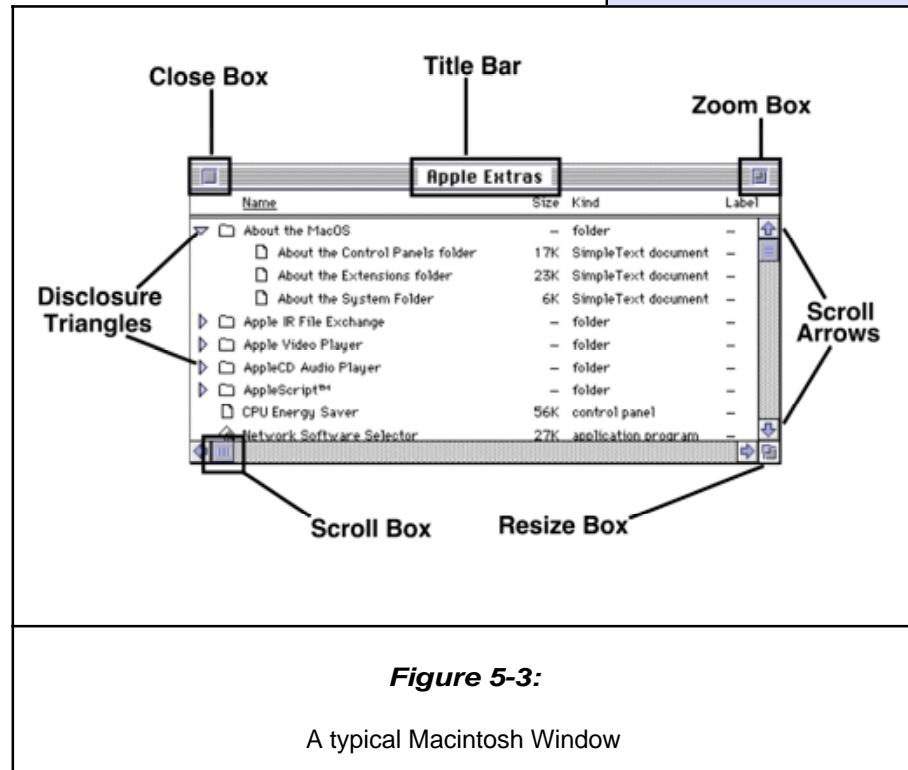


Figure 5-3:

A typical Macintosh Window

scroll up, you click the up arrow. To scroll down, click the down arrow. The same holds true for side to side scrolling. To scroll to a specific point in a window, you can also drag the scroll boxes.

The Macintosh does not have a true Windows-like minimize option. Instead, it has something called Windowshade. Windowshade collapses the window to its title bar, making room on your screen for other information. By default, the Windowshade is turned off. To turn it on, you'll need to do the following:

- 1. Click the Apple Menu, point to Control Panels, and click Windowshade.**
- 2. On the options screen, choose the bullet option 2.**
- 3. Close the Windowshade window by clicking the close gadget in the upper left corner of the window.**

Now, whenever you double click the title bar of any window, the window collapses.

If you want to scale a window so that it fits its contents (sometimes called Size to Fit in some programs), you can click the Zoom Box gadget. Alternately, you can enlarge the window by holding the Option key and clicking the Zoom Box.

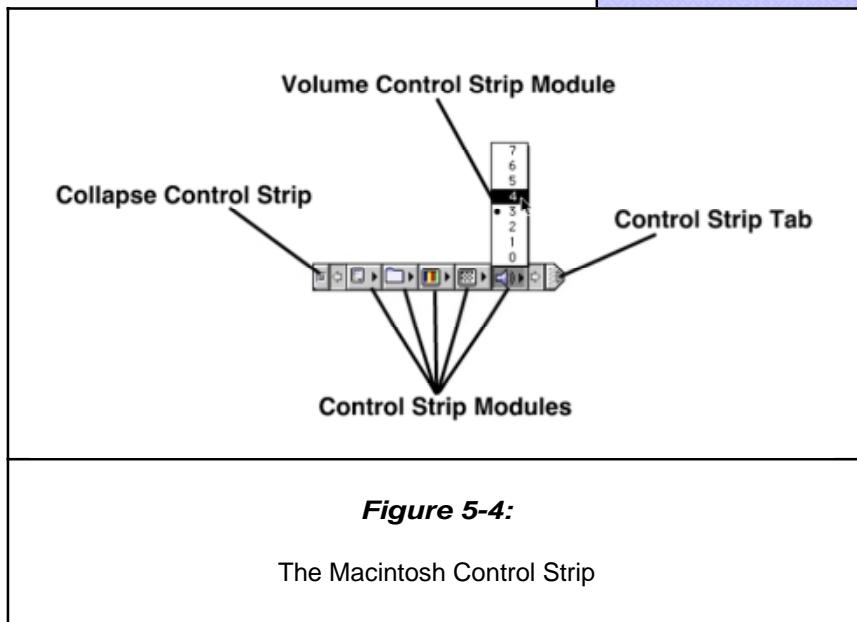
Viewing information in a Macintosh window is again similar to the Microsoft Windows format. You have the option to change the way that you view information by clicking the View menu at the top of the screen. I recommend using the By Name option, as this sorts the contents of a window and presents it in alphabetical order. With large listings, this comes in very handy. When viewing icons in this format, the Mac OS adds an extra element added to the screen: the Disclosure Triangle (hey...I didn't name it that). This ominous sounding gadget simply allows you to expand the contents of a folder without actually having to open that folder. Notice in Figure 5-3 how the Disclosure Triangle at the top of the window is facing down. This reveals the window's contents. All you need to do is click any Disclosure Triangle to reveal the contents of a folder. You can also click the triangle again to hide the folder's contents.

Get the Info...

In case you're wondering, the Option key is a pretty useful tool in the Macintosh world. For example, if you have a folder that contains many different folders, which in turn contain even more folders, you can reveal the contents of every one of those folders with a single mouse click. Just hold down the Option key and click the Disclosure Triangle next to the parent folder. All folders within that parent folder expand to show their contents. Alternately, you can close all these folders by Option-clicking the parent folder's Disclosure triangle.

The Control Strip...

The Macintosh's Control Strip is quite similar to Windows' System Tray. It contains useful functions that extend the functionality of the Mac OS. Many third-party software developers have added their own Control Strip Modules to enhance the Control Strips' functionality even further. The Control Strip stretches and shrinks to fit your needs. To increase its length, simply click and drag the tab at the end of the strip (frankly, it reminds me of a big, gray Band-Aid). If you want to collapse the Control Strip, simply click the collapse box on the far left side of the tab. To use the various modules on the Control Strip, just click them. In Figure 5-4, I've clicked the Volume Control Strip Module which allows me to increase or decrease the volume of the Mac's sound output. Other strip modules can be used in a similar fashion, depending upon their function.



Get the Info...

Yes, here comes yet another tidbit from the Macintosh Option Key archive. You can move the Control Strip by holding the Option Key and dragging the strip up and down the screen. You can even position it on the right side of the screen using this method. You can also rearrange the order of the various modules on the Control Strip by holding the Option key and dragging a module to a new location on the Strip.

The Launcher...

The Macintosh Launcher is a kind of catch-all for commonly used programs and documents that you need quick and easy access to without having to burrow through menus and folders. It's not set to

launch at startup, so to turn it on you will have to do the following:

- 1. Click the Apple Menu, point to Control Panels, and click General Controls.**
- 2. On the window that pops up, put an X in the box that reads Show Launcher at Startup.**
- 3. Close the General Controls by clicking the close box gadget in the upper left of the window and restart your Mac.**

Each item on the Launcher is represented by a button. You don't even have to double-click the item to run it as a single click will do it for you.

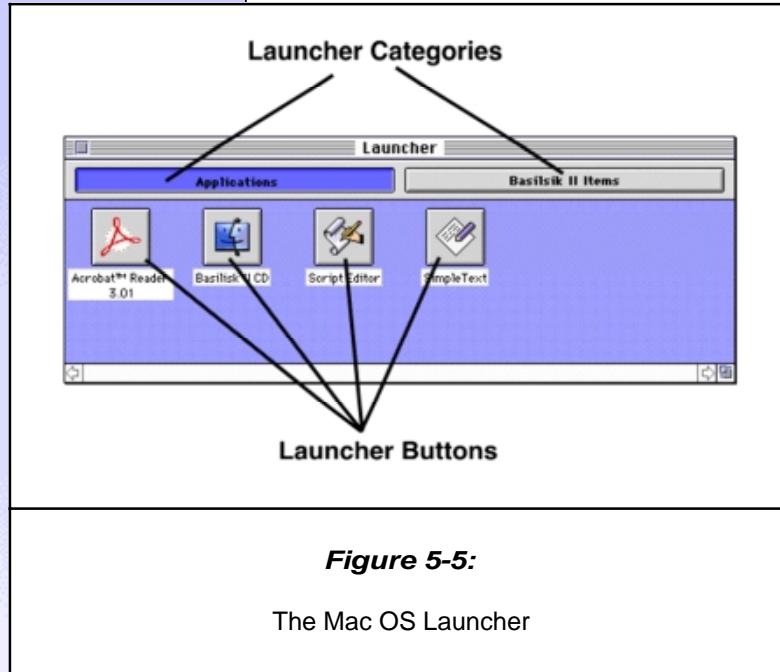


Figure 5-5:

The Mac OS Launcher

You can add items to the launcher by dragging the icon of the original program or document to the launcher area. The Mac will automatically create a button on the Launcher for your item. To remove an item, hold down the Mac's Option Key while dragging the unwanted item to the trash can. You can also have Launcher categories to separate your programs and documents. For example, in Figure 5-5, I have set up two categories: Applications and Basilisk II Items.

Switching between these categories is a simple mouse click. However, category setup is a bit trickier than simple drag and drop, and requires you to go into the Macintosh's System Folder. The System Folder contains the "guts" of the Macintosh's operating system, the files needed to boot the machine and the basic operating system components such as Extensions and Control Panels (more on these later). To set up Launcher categories, try the following:

- 1. Double click the Macintosh's hard drive icon in the upper right corner of the screen.**
- 2. In the window that pops up, double click the folder labeled System Folder.**

3. Inside the System Folder, locate and double click the folder named Launcher Items. This folder displays all the items in your Launcher.

4. While in the Launcher Items folder, click the File menu and choose New Folder. In order for this folder to become a Launcher category, it needs to have a special name. You can call it anything you wish, just so long as it has a bullet (•) in front of its name. You can type the bullet by pressing the Mac's Option key and the number 8 key. So for my special category of Basilisk II Items, I typed •Basilisk II Items.

5. Close the Launcher Items, System, and hard drive folders (*hint: you can close all windows with a single mouse click by holding the option Key and clicking the close box gadget of any window*).

6. If your Launcher is closed, re open it by going to the Apple menu, pointing to Control Panels, and clicking the Launcher.

The Extensions Manager...

The first thing you might be asking yourself is what in the world are extensions, and why do I need to manage them? Extensions are the Macintosh equivalent of Windows .dll files. They increase, or *extend*, the abilities of the operating system. You'll get your first look at extensions when you boot Basilisk II (or any Macintosh running Mac OS 7.5.x). As the computer boots, those little icons streaming across the bottom of the screen are the extensions loading up (see Figure 5-6). When extensions were first introduced, there weren't that many of them. But as more and more software companies made their own custom extensions to add functionality to their programs, we began to see a kind of extensions "overload". Adding to the problem was the introduction of another type of startup element called a Control Panel

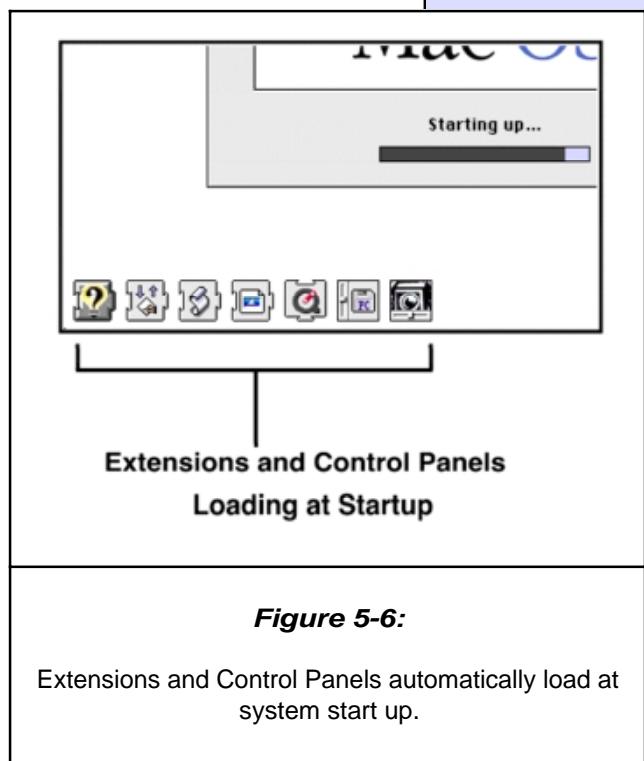


Figure 5-6:

Extensions and Control Panels automatically load at system start up.

that loads right alongside the extensions. Control panels are similar to extensions with one big difference; extensions are not programs, and therefore must load at system startup. Most control panels must load at system startup, but they also act as separate applications, meaning that you can double click and run them once the Macintosh is booted. For example, the Launcher control panel can be set to either start up after the Mac boots, or you can run it once the Mac is up and running. Since there were so many control panels and extensions out there, we began to see some conflicts arise. The only way to solve problems with extension conflicts was to move extensions out of the System Folder's Extensions Folder, the place that the Mac OS keeps its extensions. Likewise, offending control panels had to be moved out of the System Folder's Control Panels Folder. Still much easier than troubleshooting problems on Windows (imagine if the Registry were this simple), there still had to be a better way to manage these little buggers.

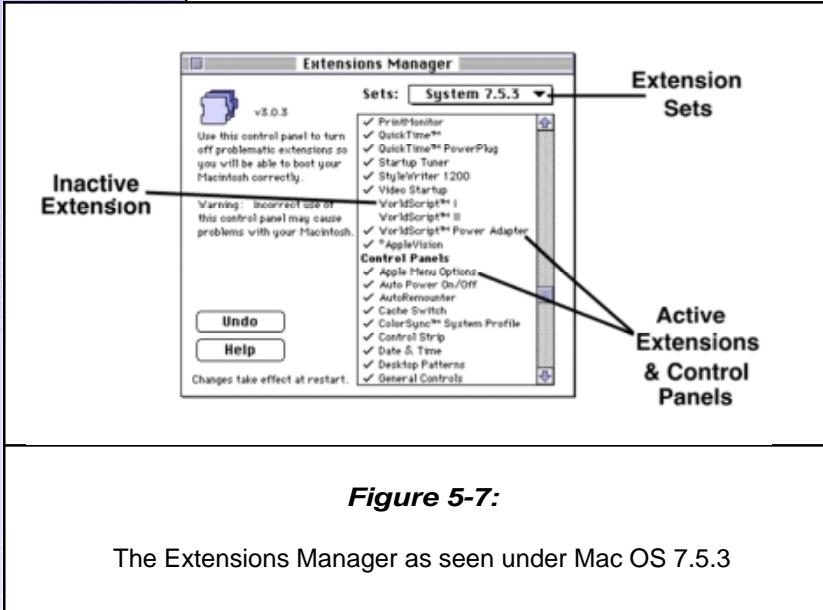


Figure 5-7:

The Extensions Manager as seen under Mac OS 7.5.3

Enter the Extensions Manager. A control panel in and of itself, it makes the job of turning extensions and control panels on and off quite easy. You can activate it by going to the Apple Menu, pointing to Control Panels, and clicking Extensions Manager. The window that greets you should appear similar to Figure 5-7. The right hand column has a listing of the control panels and extensions currently on your Macintosh. The items with check marks next to them are turned on and ready to load at system startup. Those items without a check are turned off, and are moved automatically to folders named Control Panels (Disabled) or Extensions (Disabled) where they will not load when the Macintosh boots. You can change which control panels or extensions load at system startup by checking or unchecking them. This is particularly useful when your Macintosh is acting strangely, such as crashing very often. It could very well be an extension or control panel conflict. One of the best ways to check if this is the case is to create an Extensions Set. An Extensions Set is similar to Windows Profiles, in that you can create custom boot configurations. The Extensions Manager contains a default set called System 7.5.3 or System 7.5.5. These sets are the bare minimum needed to boot the Macintosh and excludes all extra

third party extensions and control panels you may have installed. If the Mac is crashing, this is a wonderful way to get things going again. You can then turn on your other third party extensions one at a time to see which one(s) might be causing the problems. You can select built-in and custom sets by clicking the Sets drop down menu shown in Figure 5-7. You can also save custom sets by clicking the Save Set option. Keep in mind that once you change the configuration in the Extensions Manager, you'll need to restart the Macintosh for the changes to take effect.

Get the Info...

You can boot your Macintosh with all extensions turned off by holding the Mac's Shift key during the system's startup. Once you see a screen that says Extensions Disabled or Extensions Off, you're in business and can release the shift keys. Also, to find out more on just what all those extensions do, you can download InformINIT. It contains a library of different extensions on the Mac platform, and definitions on what they do:

[<http://mc04.equinox.net/informinit/>](http://mc04.equinox.net/informinit/)

Rebuilding the Mac's Desktop File...

Much more ominous sounding than it really is, rebuilding the desktop file is quite easy, and is necessary maintenance to keep the Mac's hard drive running smoothly and to prevent system crashes. Keep in mind that this does not defragment the hard drive. It only rebuilds the Desktop File. What is the Desktop File, you might ask? It's a set of files on the Mac's hard disk that keeps track of what programs created what files. It makes searching for files on the hard drive much more efficient. And, for some inexplicable reason, it helps to head off system crashes and erratic behavior. To rebuild it, do the following:

- 1. When the Macintosh is booting up, either from a cold boot or from a restart, hold down the Mac's Option key and the Command Key. Keep holding these down throughout the entire boot up sequence.**
- 2. When you see a requester asking you if you would like to rebuild the desktop file, click Yes or OK.**
- 3. The rest is automatic. Do this about once a month, and your Mac will love you.**

Shutting Things Down and Restarting...

Now we come to the easy part. Just like Windows, the Macintosh needs to do some housecleaning before shutting down or restarting. We've all seen the Windows screen that states "...your computer was not shut down properly..." followed by the stern warning that you need to shut your computer down by selecting Shut Down from the Start menu. Of course, 90% of the time, the computer crashed and it wasn't your fault that the computer was "improperly" shut down. I always yell at my computer when I see that message. The Macintosh is similar. You need to shut it down properly or else you'll get that stern warning. To either shut down or restart your Mac under Basilisk II, it's pretty much the same as on a real Mac. Just go to the Special menu at the top of the screen and choose either Restart or Shut Down. It's as simple as that.

6:

Chapter Getting to Know the Mac OS...

Mac OS 8

Chapter Objectives:

- Macintosh Disks
- Macintosh Application Menu
- Macintosh Windows
- Contextual Menus
- The Control Strip
- The Launcher
- The Extensions Manager
- Desktop Patterns
- Shutting Things Down
- Rebuilding the Desktop File

In similar fashion to Chapter 5, we're now going to go through Mac OS 8. Again, this chapter is for Windows users new to the Mac OS, and should help guide you through a basic understanding of Mac OS 8. Much of the following content mirrors that of Chapter 5, as there are many similarities between Mac OS 8 and 7.5.3. Whenever differences arise between the two, I'll note them.

For the experienced Windows user, the Mac OS is quite similar to what you're used to. Undoubtedly, Microsoft used the Mac OS for inspiration when it created Windows 95. Many of the operations that you're familiar with in Windows were pioneered in the Mac OS, so the learning curve is quite shallow and you'll be up and running in no time.

Mac OS Basics: The Macintosh Desktop...

The Macintosh main screen area is called the Desktop. This is analogous to the Windows Desktop, and the two contain much of the same information. Both environments contain picture elements called icons. These icons can represent files, disks, programs, or shortcuts (called Aliases on the Macintosh). Double clicking these icons produces similar effects in both OSes: double clicking a program icon launches that program. Double clicking a file icon opens that file in the program that created it. In the event that the original program isn't found, both OSes

present you with a listing of possible alternative programs in which to open the file.

The Macintosh has the Apple Menu in the upper left corner of the screen, and Windows has the Start Menu. Windows uses the Recycle Bin, and the Mac uses the Trash can. They both serve to delete unwanted files. To delete the files in the Trash can, you need to choose Empty Trash from the Special Menu.

Of course, there are differences between the two. This section helps you to make the transition so that things don't seem

quite so foreign when you start using the friendliest OS around.

Mac OS 8 adds a new feature called Pop-Up Windows not found in older versions of the Mac OS. This is similar to Windows' minimize option, in that you can reduce a window to the bottom of the screen without completely closing it. Unfortunately, there is no actual minimize "gadget". In order to switch a window to its pop-up state, simply drag the window by its title bar down to the bottom of the screen. The window automatically changes to a tab. You can click the tab to make the window pop up to reveal its contents. Clicking elsewhere on the screen causes the window to return to its tabbed state. To restore the window to its normal state, simply drag the tab upward.

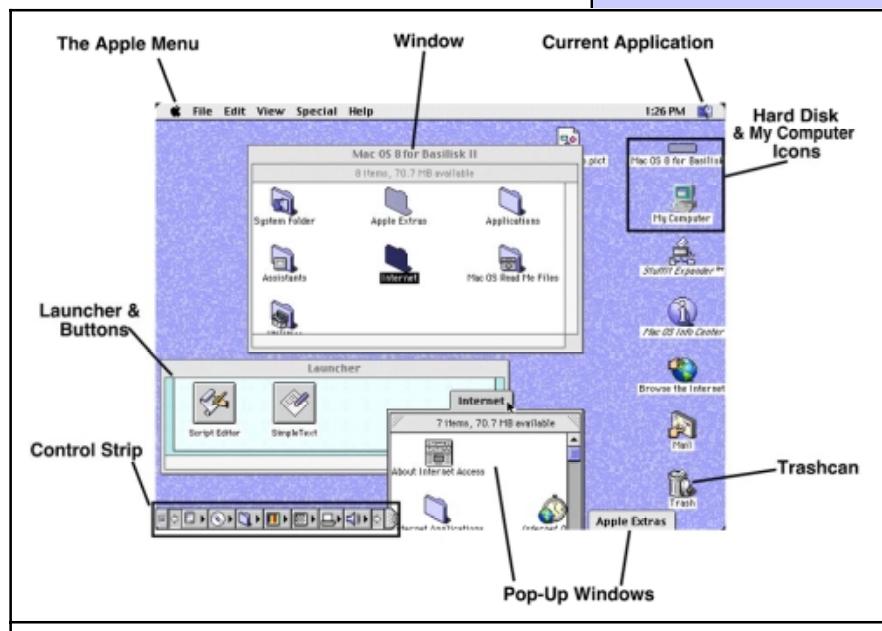


Figure 6-1:

The Mac OS 8 Desktop

Another new addition to the Mac's interface in OS 8 is contextual menus. No doubt drawing upon Windows 9x's right-click menus, contextual menus are a welcomed sight to the Mac OS. Of course the argument rages as to just who really invented the contextual menu; there are those who say Microsoft did it with Windows 95. Then there are those who say that Apple invented them in their failed "Copeland", an OS project that never saw the light of day. But again, I digress. In any case, since the Mac lacks a second mouse button, normal Mac users must hold the Mac's Option key and click the mouse, producing a contextual menu. Since Basilisk II can map this routine to your computer's right mouse button, all you have to do is right-click. To make sure that Basilisk II is set up to map the Control-click sequence to your right mouse button, see Mouse Options on [page 17](#).

Get the Info....

You can change Macintosh windows to and from the pop-up state by right-clicking a window's title bar. This produces a menu. Point to the View option and click either "As pop-up window" or "As window".

Macintosh Disks...

The Macintosh handles disks a little differently than Windows does. In Windows, when you insert a floppy disk or a non-autorun CD ROM, you really don't know that the disk is in the drive unless you double click My Computer and then double click one of the icons corresponding to your floppy or CD ROM drive. The Mac OS is a bit more efficient and direct when using disks. For example, when you insert a CD ROM, no matter if it has autoplay (the Macintosh equivalent of Windows Autorun) turned on or not, an icon appears on the Mac's desktop to let you know that there is a disk in the drive, and that it's ready to be used. To open that disk, all you need to do is double-click its icon. The same holds true for floppy disks, as well as other removable media and fixed hard disks. The only exception to this rule comes into play when we add Basilisk II to the picture. When using Mac OS 8 with the Basilisk II My Computer option turned on, you can see an icon on the Mac's desktop called My Computer. This icon essentially acts the same as your Windows' My Computer icon. When you double click it, you have icons that represent your Windows drives. It's the best way to bridge the gap between the Mac and Windows. Basilisk II gives you a familiar Windows 9x starting point, especially if you know nothing about the Mac OS. These icons are shown in Figure 6-1.

Macintosh Application Menu...

The Macintosh and Windows have different ways to switch between multiple running applications. On Windows, the Taskbar lets you switch between applications. On the Macintosh, application switching

is handled by the Application Menu in the upper right corner of the Mac's screen. The menu's icon represents the current application. When you click it, you get a listing of all running applications, including the current application which has a check mark next to it.

You can switch to another application by clicking that application. You can also choose to hide the current application, hide all other background applications, or show all applications.

Hiding certain applications can really help to reduce clutter on the Mac's Desktop, especially when there are many applications running at one time.

Perhaps drawing from Microsoft Windows for inspiration, Apple added a convenient application switcher to Mac OS 8. By holding the Mac's Command key while tapping the Tab key, you can cycle through all running applications.

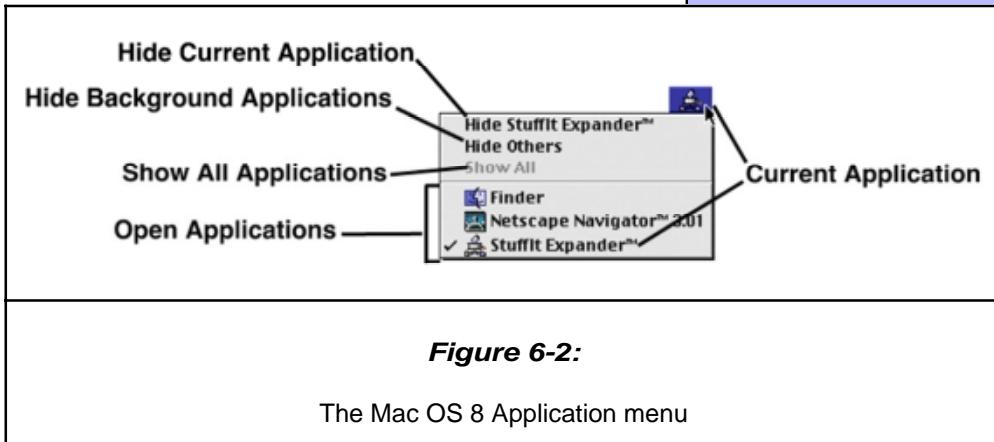


Figure 6-2:
The Mac OS 8 Application menu

Get the Info...

You can automatically hide the current application by holding down the Macintosh's Option Key and selecting a different application from the Application Menu.

If you like the Windows Taskbar, you can always go with Action GoMac!, a wonderful Windows-like taskbar for the Macintosh. Get the info here:

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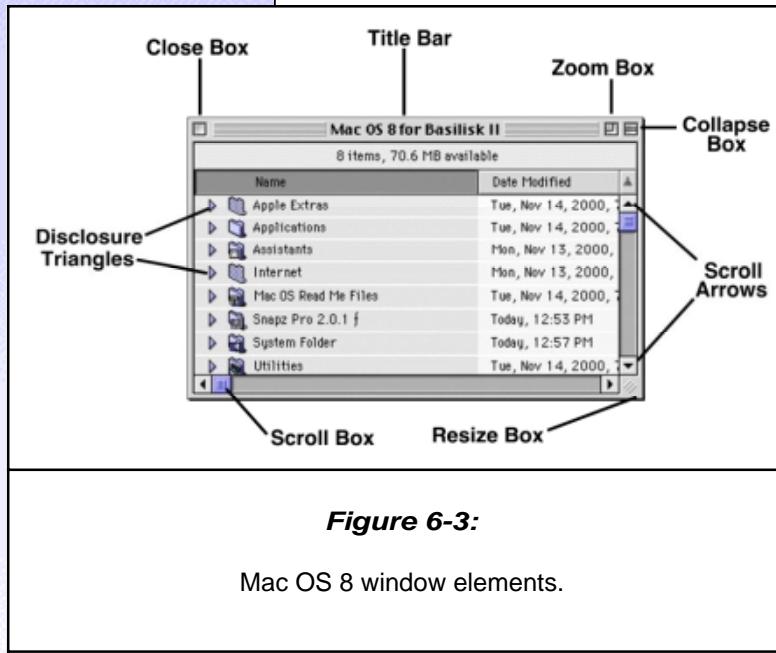
close box is located in the upper left corner of the window instead of the upper right. Scroll arrows and scroll boxes work in pretty much the same way as in Windows. To scroll up, you click the up arrow. To scroll down, click the down arrow. The same holds true for side to side scrolling. To scroll to a specific point in a window, you can also drag the scroll boxes. You may also “freestyle” scroll by holding the Command key while dragging the mouse pointer inside a window.

In OS 8, Apple integrated the Windowshade function from Mac OS 7.5.3 (see [page 73](#) for more information on Windowshade) into a new gadget called the Collapse Box, located in the upper right corner of every window (see Figure 6-3). Clicking this gadget collapses the entire window to its title bar, making room for other windows.

Clicking the gadget again restores the window to its previous form. You can also collapse all windows on the Mac’s desktop by holding the Option key and clicking any Collapse Box on any window. You can restore all windows from their collapsed state the same way using this shortcut.

If you want to scale a window so that it fits its contents (sometimes called Size to Fit in some programs), you can click the Zoom Box gadget.

Alternately, you can enlarge the window by holding the Option key and clicking the Zoom Box. If you want to scale a window so that it fits its contents (sometimes called Size to Fit in some programs), you can click the Zoom Box gadget. Alternately, you can enlarge the window by holding the Option key and clicking the Zoom Box.



icons in this format, you’ll see an extra element added to the screen: the Disclosure Triangle (hey...I didn’t name it that). This ominous sounding gadget simply allows you to expand the contents of a folder without actually having to open that folder. Just click any Disclosure Triangle to reveal the contents of a folder. You can also click the triangle again to hide the contents of a folder. The Disclosure Triangle is similar to Microsoft Windows’ plus and minus (+ and -) signs to the left of folder names. Clicking the plus expands the folder to reveal its contents. Clicking the minus sign closes the folder back up.

Get the Info...

In case you're wondering, the Option key is a pretty useful tool in the Macintosh world. For example, if you have a folder that contains many different folders, which in turn contain even more folders, you can reveal the contents of every one of the folders with a single mouse click. Just hold the Option key and click the Disclosure Triangle next to the parent folder. All folders within that parent folder expand to show their contents. Alternately, you can close all of these folders up by Option-clicking the parent folder's Disclosure triangle.

The Control Strip...

The Macintosh's Control Strip is quite similar to Windows' System Tray. It contains useful functions that extend the functionality of the Mac OS. Many third-party software developers have added their own Control Strip Modules to enhance the Control Strips' functionality even further. The Control Strip stretches and shrinks to fit your needs. To increase its length, simply click and drag the tab at the end of the strip (frankly, it reminds me of a big, gray Band-Aid). If you want to collapse the Control Strip, click the collapse box on the far left side of the tab. To use the various modules on the Control Strip, just click them. In Figure 6-4, I've clicked the Volume Control Strip Module which allows me to increase or decrease the volume of the Mac's sound output. Other modules can be used in a similar fashion.

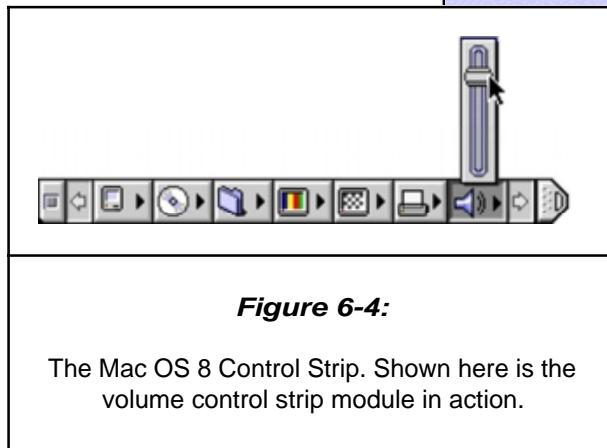


Figure 6-4:

The Mac OS 8 Control Strip. Shown here is the volume control strip module in action.

Get the Info...

Yes, here comes yet another tidbit from the Macintosh Option Key archive. You can move the Control Strip by holding the Option Key and dragging the strip up and down the screen. You can even position it on the right side of the screen using this method. You can also rearrange the order of the various modules on the Control Strip by holding the Option key and dragging a module to a new location on the Strip.

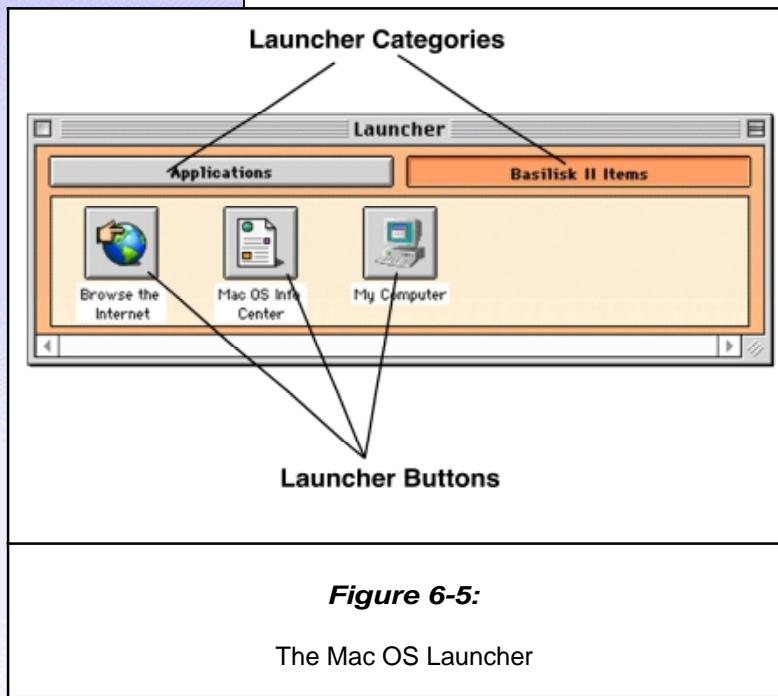
The Launcher...

The Macintosh Launcher is a kind of catch-all for commonly used programs and documents that you need quick and easy access to without having to burrow through menus and folders. It's not set to launch at startup, so to turn it on you will have to do the following:

- 1. Click the Apple Menu, point to Control Panels, and click General Controls.**
- 2. On the window that pops up, put an X in the box that reads Show Launcher at Startup.**
- 3. Close the General Controls by clicking the close box gadget in the upper left of the window and restart the Mac.**

Each item on the Launcher is represented by a button. You don't even have to double click the item to run it as a single click will do it for you.

You can add items to the launcher by dragging the icon of the original program or document to the launcher area. The Mac will automatically create a button on the Launcher for your item. To remove an item, hold the Mac's Option Key while dragging the unwanted item to the trash can. You can also create Launcher categories to separate your programs and documents. For example, in Figure 6-5, I have set up two categories: Applications and Basilisk II Items.



Switching between these categories is a simple mouse click. However, category setup is a bit trickier than simple drag and drop, and requires you to go into the Macintosh's System Folder. The System Folder contains the "guts" of the Macintosh's operating system, the files needed to boot the machine and the basic operating system components such as Extensions and Control Panels (more on these later). To set up Launcher categories, try the following:

- 1. Double click the Macintosh's hard drive icon in the upper right corner of the screen.**
- 2. In the window that pops up, double click the folder labeled System Folder.**
- 3. Inside the System Folder, locate and double click the folder named Launcher Items. This folder displays all the items in your Launcher.**
- 4. While in the Launcher Items folder, click the File menu and choose New Folder. In order for this folder to become a Launcher category, it needs to have a special name. You can call it anything you wish, just so long as it has a bullet (•) in front of its name. You can type the bullet by pressing the Mac's Option key and the number 8 key. So for my special category of Basilisk II Items, I typed •Basilisk II Items.**
- 5. Close the Launcher Items, System, and hard drive folders (*hint: you can close all windows with a single mouse click by holding the option Key and clicking the close box gadget of any window*).**
- 6. If your Launcher is closed up, reopen it by going to the Apple menu, pointing to Control Panels, and clicking Launcher.**

The Extensions Manager...

The first thing you might be asking yourself is what in the world are extensions, and why do I need to manage them? Extensions are the Macintosh equivalent of Windows .dll files. They increase, or *extend*, the abilities of the operating system. You'll get your first look at extensions when you boot Basilisk II. As the computer boots, those little icons streaming across the bottom of the screen are the extensions loading up (see Figure 6-6). When extensions were first introduced, there weren't that many of them. But as more and more software companies made their own custom extensions to add functionality to their programs, we began to see a kind of extensions "overload". Adding to the problem was the introduction of another type of startup element called a Control Panel that loads right alongside the extensions. Control panels are similar to extensions with one big difference; extensions are not programs, and therefore must load at system startup. Most control panels must load at system startup, but they also act as separate applications, meaning that you can double click and run them once the Macintosh is booted up. For example, the Launcher control panel can be set to either start up after the Mac boots, or you can run it once the Mac is up and running. Since there were so

many control panels and extensions out there, we began to see some conflicts arise. The only way to solve problems with extension conflicts was to move extensions out of the System Folder's Extensions Folder, the place that the Mac OS keeps its extensions. Likewise, offending control panels had to be moved out of the System Folder's Control Panels Folder. Still much easier than troubleshooting problems on Windows (imagine if the Registry were this simple), there still had to be a better way to manage these little buggers.



Figure 6-6:

Extensions loading at Mac OS startup

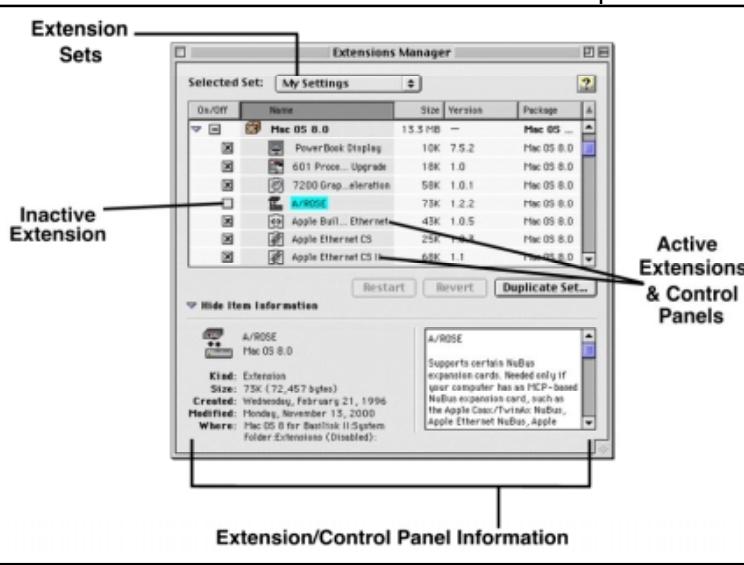


Figure 6-7:

The Mac OS 8 Extensions Manager

Enter the Extensions Manager. A control panel in and of itself, it makes the job of turning extensions and control panels on and off quite

easy. You can activate it by going to the Apple Menu, pointing to Control Panels, and clicking the Extensions Manager. The window that greets you should appear similar to Figure 6-7. It contains a listing of the control panels and extensions currently on your Macintosh. The items with X marks in the boxes next to them are turned on and ready to load at system startup. Those items without a check are turned off, and are moved automatically to a folder named Control Panels (Disabled) or Extensions (Disabled) where they will not

load when the Macintosh boots. You can change which control panels or extensions load at system startup by checking or unchecking them. This is particularly useful when your Macintosh is acting strangely, such as crashing very often. It could very well be an extension or control panel conflict. One of the best ways to check if this is the case is to create an Extensions Set. An Extensions Set is similar to Windows Profiles, in that you can create custom boot configurations. The Extensions Manager contains a couple of default sets called Mac

OS 8 Base and Mac OS 8 All. These sets are the bare minimum needed to boot the Macintosh and excludes all extra third party extensions and control panels. If the Mac is crashing, this is a wonderful way to get things going again. You can then turn on your other third party extension one at a time to see which one(s) might be causing the problems. You can select built-in and custom sets by clicking the Selected Sets drop down menu shown in Figure 6-7. You can also save custom sets by clicking the New Set or Duplicate Set options under the File menu at the top of the screen. Keep in mind that once you change the configuration in the Extensions Manager, you'll need to restart the Macintosh for the changes to take effect.

You can view the extensions in different ways as well. Go to the View menu and click “As Folders...” This groups all extensions and control panels into their locations in your Mac’s System Folder. You can view the contents of the Extensions folder, Control Panels folder, Shut Down Items folder, Startup Items folder, and the System Folder itself. If you would rather group extensions and control panels together by the programs that installed them, you can select “As Packages...” from the View menu. Do you want to see all the extensions installed by Internet Explorer? Cruise on over to its package in the listing and find out (there are quite a few of them). If you simply want to view extensions and control panels in a raw listing, you can select “As Items...” in the View menu. If that’s not enough for you, you can also group the extensions/control panels in other ways by clicking the column headers above each column. For example, if you want to view items as to their on or off status (whether or not they have an X mark in them), simply click the On/Off column header. You can do the same by clicking the other column headers for Name, Size, Version number, and the Package each item belongs to. All in all, the Extensions Manager rocks greatly.

Get the Info...

You can boot up your Macintosh with all extensions turned off by holding down the Mac’s Shift key during the system’s startup. Once you see a screen that says Extensions Disabled or Extensions Off, you’re in business and can let up on the keys. Also, to find out more on just what all those extensions do, you can download Extensions Overload. It contains a library of different extensions on the Mac platform, and definitions on what they do. Be sure to download only version 5.5, as the author of this program no longer supports 68K Macs:

<http://www.extensionoverload.com>

Adding Desktop Pictures...

In Mac OS 8, Apple finally added the ability to spruce up the desktop a bit by adding desktop pictures (called wallpaper on Windows), in

addition to traditional, tiled desktop patterns. To bring up the Desktop Pictures control panel, click the Apple Menu, point to Control Panels, and click Desktop Pictures. The screen that pops up should look similar to Figures 6-8 and 6-9. On the left side of the window, you can select which mode you want to use: Pattern or Picture.

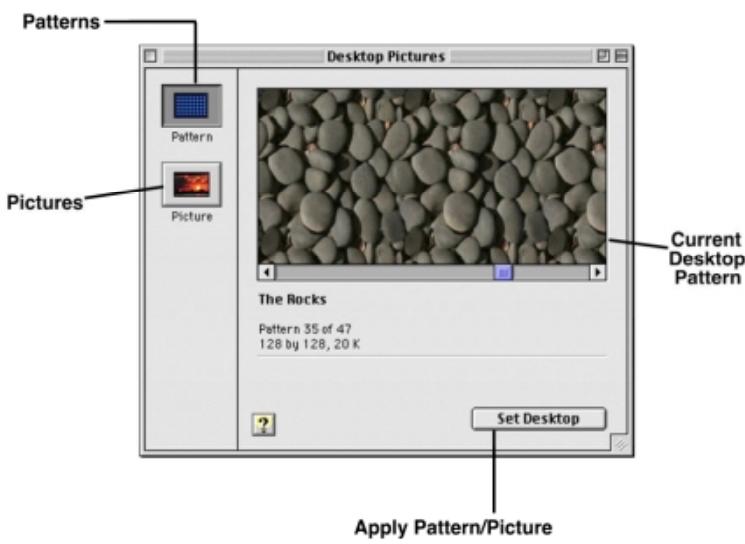


Figure 6-8:

The Mac OS 8 Desktop Pictures Control Panel, Patterns screen.

Patterns Pictures

The patterns function is responsible for placing repeating, tiled patterns onto the Mac's desktop. Patterns are made up of small pictures that the Mac then combines and places onto the Mac's screen. There are several built-in patterns that ship on the Mac OS 8 CD, ranging from bland color patterns to complex marble sequences. The example shown in Figure 6-8 shows a pebbly, rocky pattern. This is actually made up of many tiny squares, but because the edges of each of the squares fit together seamlessly, this appears to be one continuous picture. It's really a clever illusion. You can change the current pattern by clicking either of the scroll arrows, as is shown in Figure 6-8.

When you decide on a pattern, click the Set Pattern button to apply the

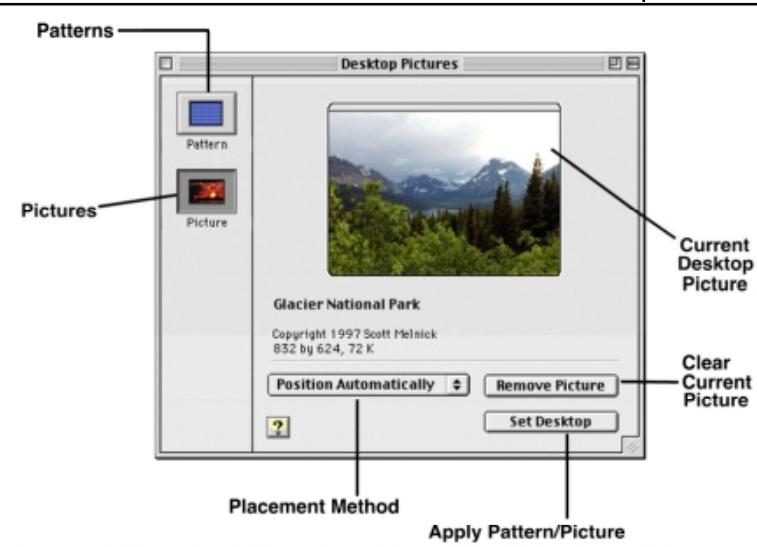


Figure 6-9:

The Mac OS 8 Desktop Pictures Control Panel, Pictures screen.

changes to your desktop.

Perhaps the prettier option, the Pictures section allows you to place an entire image on the Macintosh's desktop instead of smaller, tiled pattern elements. Click the Place Picture button and browse your hard drive for a suitable picture to use. Once you choose one, you can control how the picture is placed onto your desktop via the placement method menu. You can tile, stretch, or even scale the image to fit your screen. Clicking the Set Desktop button applies the changes. If you decide that you don't want your current image, click the Remove Picture button. You can then choose a new one by clicking the Place Picture button.

Get the Info...

You can call up the Desktop Pictures control panel quickly by right-clicking on the Mac's Desktop. This brings up a contextual menu. Left-click "Change Desktop Background...", which brings up the Desktop Pictures control panel.

Rebuilding the Mac's Desktop File...

Much more ominous sounding than it really is, rebuilding the desktop file is quite easy, and is necessary maintenance to keep the Mac's hard drive running smoothly and to prevent system crashes. Keep in mind that this does not defragment the hard drive. It only rebuilds the Desktop File. What is the Desktop File, you might ask? It's a set of files on the Mac's hard disk that keeps track of what programs created what files. It makes searching for files on the hard drive much more efficient, and it helps to head off system crashes and erratic behavior. To rebuild it, do the following:

- 1. When the Macintosh is booting up, either from a cold boot or from a restart, hold down the Mac's Option key and the Command Key. Keep holding these down throughout the entire boot up sequence.**
- 2. When you see a requester asking you if you would like to rebuild the desktop file, click Yes or OK.**
- 3. The rest is automatic. Do this about once a month, and your Mac will love you.**

Shutting Things Down and Restarting...

Now we come to the easy part. Just like Windows, the Macintosh needs to do some housecleaning before shutting down or restarting. We've all seen the Windows screen that states "...your computer was not shut down properly..." followed by the stern warning that you need to shut your computer down by selecting Shut Down from the



Start menu. Of course, 90% of the time, the computer crashed and it wasn't your fault that you improperly shut down. I always yell at my computer when I see that message. The Macintosh is similar. You need to shut it down properly or else you'll get that stern warning. To either shut down or restart your Mac under Basilisk II, it's pretty much the same as on a real Mac. Just go to the Special menu at the top of the screen and choose either Restart or Shut Down. It's as simple as that.

7:

Chapter Printing in Basilisk II...

Chapter Objectives:

- Installing Stuffit Expander
- The Macintosh Chooser
- Installing PrintToPDF
- Printing Documents with PrintToPDF

By now, you should be getting pretty familiar with the Mac OS, no matter which version you are running. Thus far, we've concentrated mainly on how to get things *into* Basilisk II. This section deals with how to get things *out* of Basilisk II in the form of printing. There have been many ways proposed on how to get print output from Basilisk II, but the one way that I have had the most success with (and the fewest headaches from) printing is using a shareware Macintosh extension called PrintToPDF, which allows you to turn virtually any document in any Macintosh program into an Adobe Portable Document Format (PDF) file. PDF is a universally accepted document format that you can view on either a Mac or PC, and many Unix systems. So the plan pretty much goes like this: you save your document as a PDF file in Basilisk II, transfer the document to your PC via the My Computer function (*see page 30 for details on My Computer*). You can then open the PDF file on your PC and print it using your normal Windows printer. So, let's get going...

Stuffit Expander Revisited...

Recall that in Chapter 3, we used Stuffit Expander to decode and decompress a series of files. We're going to do this again. But in order to do this, we'll need a file disk with Stuffit Expander on it. If you

installed Mac OS 7.5.3 in Chapter 3, then you already have this disk image. If you don't have the image, you can download it here:

<http://www.kearney.net/~mhoffman/basiliskII/manual/macosinstall.dsk.zip>

You also need a program such as WinZip or the PC version of Aladdin Expander to decompress this file, as it is in zip format.

1. Decompress the macosinstall.dsk file to your Basilisk II directory.

2. Launch the Basilisk II GUI and click the Disk tab.

You should see your standard boot disk in the Installed disks column. The entry you see here depends on whether you installed Mac OS 8 or 7.5.3. On the right column, you should see the macosinstall.dsk file. Double click it to move it over to the left column. If the macosinstall.dsk is already on the left column, make sure that it is second on the list. Disks toward the top of the list get greater boot priority. Once you have these disks in place, you're ready to boot into the Mac OS again.

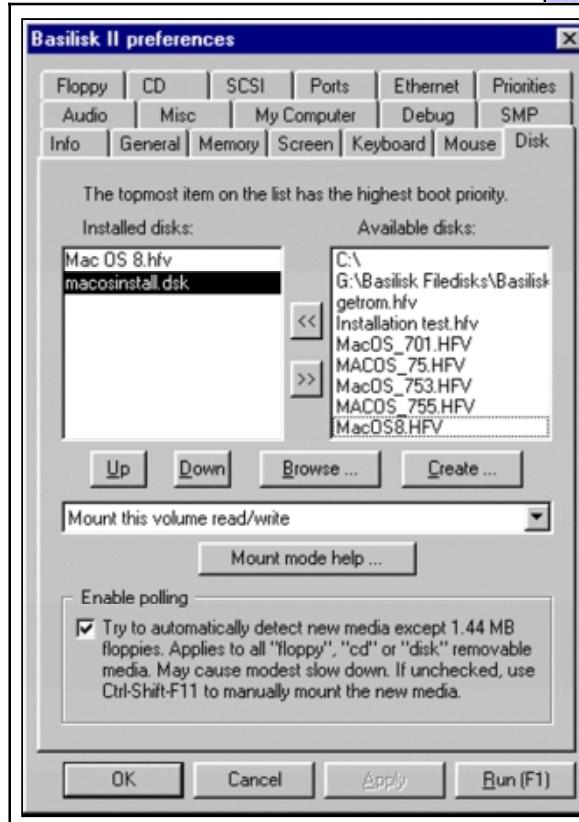


Figure 7-1:

In addition to your standard Mac OS disk (I have Mac OS 8 shown here), make sure that you have the macosinstall.dsk placed in the Installed Disks column. Make sure that it is placed second in this list.

3. Click the Run button, or hit the F1 key.

4. Once the Mac is booted, double click the Installer Disk icon on the Mac's Desktop.

5. A new window pops up. Double click the Aladdin Expander 5.5 Installer icon.

The Aladdin Expander installer screen pops up. Just click Continue a couple of times, read and agree with the license, and click the Install button.

6. Specify the location where you want to install Stuffit Expander.

This is the tricky part. We need to install Stuffit Expander on your Mac's startup disk.

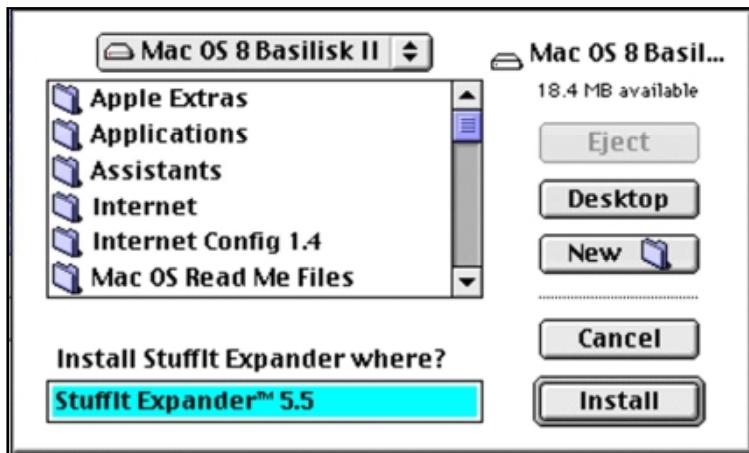


Figure 7-2:

Install Stuffit Expander on your Mac OS startup disk.

7. Click the New button, type Stuffit Expander 5.5, click Create,

and click Install.

This installs Stuffit expander in a folder on your Mac's hard disk called Expander. Once the installation process completes, shut down the Macintosh by clicking the Special menu and clicking Shut Down.

8. Re-launch the Basilisk II GUI, click the Disks tab, and remove the macosinstall.dsk from the left column.

9. Click the My Computer tab, and make sure that Enable External File System is turned checked.

10. Start Basilisk II again by clicking the Run button, or hitting the F1 key on your keyboard.

Downloading and Installing PrintToPDF...

What is PrintToPDF? Simply put, PrintToPDF is a pseudo, or "fake" printer driver that you install on your Mac. With this driver installed, your Mac doesn't print to a physical, real printer such as an Epson or Lexmark. Instead, it writes the data that normally would go to the

printer to your hard disk in the form of a PDF file. This file can then be viewed and printed on your Windows computer using Adobe's Acrobat reader, which is available free of charge. You can pick up a copy of the Acrobat Reader for Windows here on Adobe's download page:

[<http://www.adobe.com>](http://www.adobe.com)

Normally, creating PDF files costs over \$200 for the entire Adobe Acrobat program. However, I'm using PrintToPDF and AppleWorks 6 to create this entire manual in PDF. PrintToPDF works. You can download PrintToPDF here:

[<http://www.jwwalker.com/pages/pdf.html>](http://www.jwwalker.com/pages/pdf.html)

Please keep in mind that PrintToPDF is shareware, and not freeware. If you use it, please pay the shareware fee of \$20 to author James W. Walker. There are two download links on Mr. Walker's site. Make sure to download the file with the ".bin" file extension (PrintToPDF.sit.bin). The reason for this is that we need to preserve the file's resource fork (*for more information on the resource fork and other Mac file oddities, please see "Get the Info..." on page 30*). Download this

file to your Virtual Desktop folder in the Basilisk II folder.

1. Unstuff the PrintToPDF package and copy it to your Macintosh's System Folder.

Decompressing the PrintToPDF archive is just as simple as drag and drop. Open the My Computer icon on the Mac's desktop by double clicking it. You should see the file named PrintToPDF-2.x.x.site.bin, where the letter x stands for the version number of PrintToPDF. At the time of this writing, the version number is 2.2.0. Now, drag the PrintToPDF-2.x.x.site.bin and drop it onto the Stuffit Expander alias icon on your Mac's

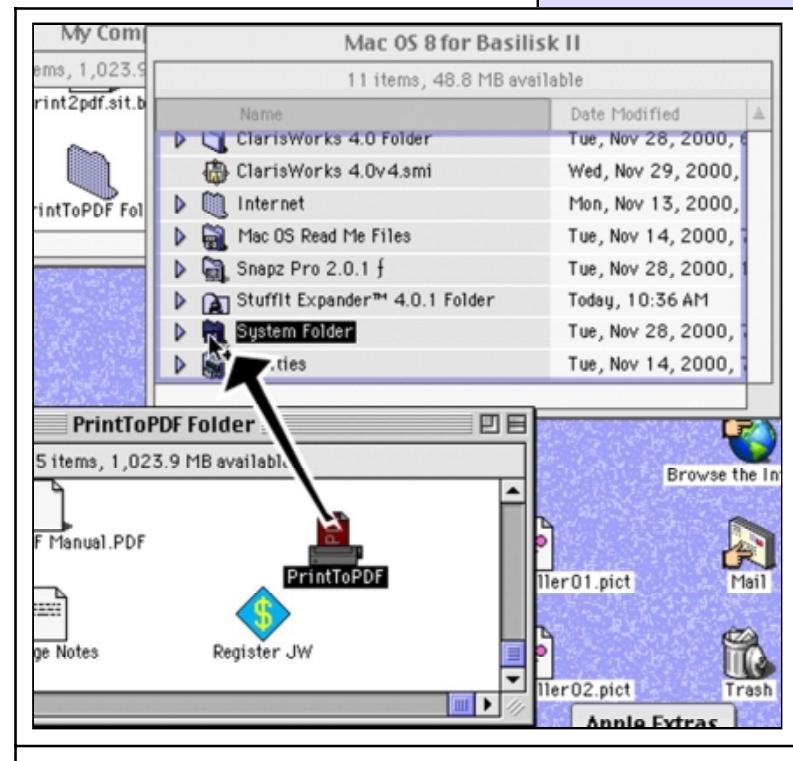


Figure 7-3:

Copy the PrintToPDF icon to the Mac's System Folder Icon

desktop. When Stuffit Expander finishes, you should see a new folder in the My Computer window that reads PrintToPDF Folder. Double click it. Now, double click your Mac's main hard disk icon. Find your System Folder icon. Now, drag the PrintToPDF icon to the System Folder icon, as is shown in Figure 7-3. The Mac tells you that PrintToPDF belongs in the Extensions Folder, and asks you if you would like to put it there. Tell it yes. The Mac automatically places the icon where it needs to go (neat, huh?).

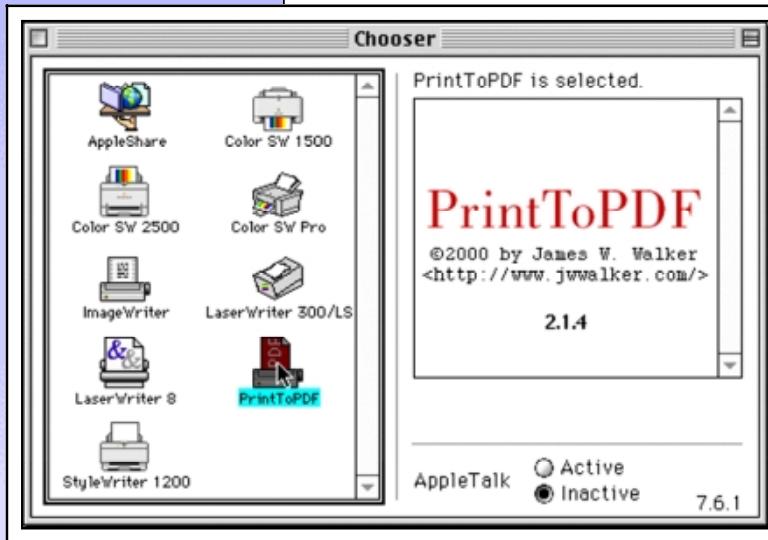


Figure 7-4:

Select the PrintToPDF icon in the Chooser

Now we need to make PrintToPDF the Mac's default printer. Click the Apple menu in the upper left corner of the screen and select Chooser. The Chooser pops up, and should appear similar to Figure 7-4. Find the PrintToPDF icon and click it once. Close the Chooser by clicking the close box in the upper left corner.

Remember that PrintToPDF

is a pseudo printer driver. When the Macintosh tries to print, it will access the PrintToPDF driver and save whatever you are trying to print as a PDF file on your hard drive.

Printing Using PrintToPDF...

Now that we have things ready to go, let's try a sample printout.

1. If the Launcher is not open, open it by clicking the Apple Menu, pointing to Control Panel, and clicking Launcher.

2. Click the SimpleText button on the Launcher.

SimpleText is the Macintosh equal of Windows' Notepad. It's a simple text editor or primitive word processor.

3. Once a blank page pops up, type some text.

You can type whatever you'd like on this blank page. We just want to

get some sample text so that we can use PrintToPDF to convert this page into a PDF file.

4. Click the File menu and choose the Print option.

This brings up the PrintToPDF printer requester, as is shown in Figure 7-5. Click the OK button. You should see some disk activity and a message stating that the computer is printing the document.

5. Save the PDF file to the My Computer directory.

After Basilisk II creates the PDF file, a file requester pops up. Click the Desktop button on the right side of the window, double click the My Computer entry, and type a name for the PDF file with the .PDF file extension on the end of the name. For example, in Figure 7-6, I named the file:

test_document.pdf

After typing the name, click the Save button. You can now open the PDF file on the Windows side in the Adobe Acrobat reader software. In Windows double click the PDF file, and your Windows Acrobat Reader software brings the file up. You can then print by going to the File menu and choosing Print, just as you would in any other Windows program.

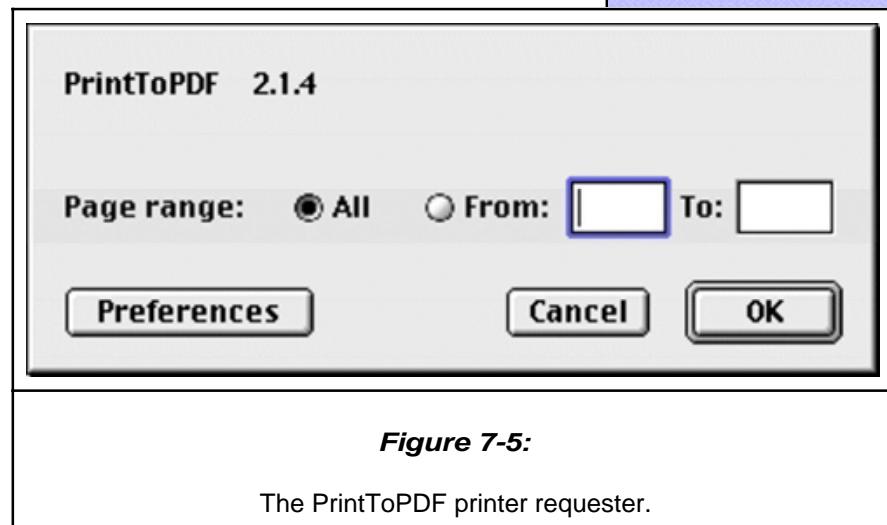


Figure 7-5:

The PrintToPDF printer requester.

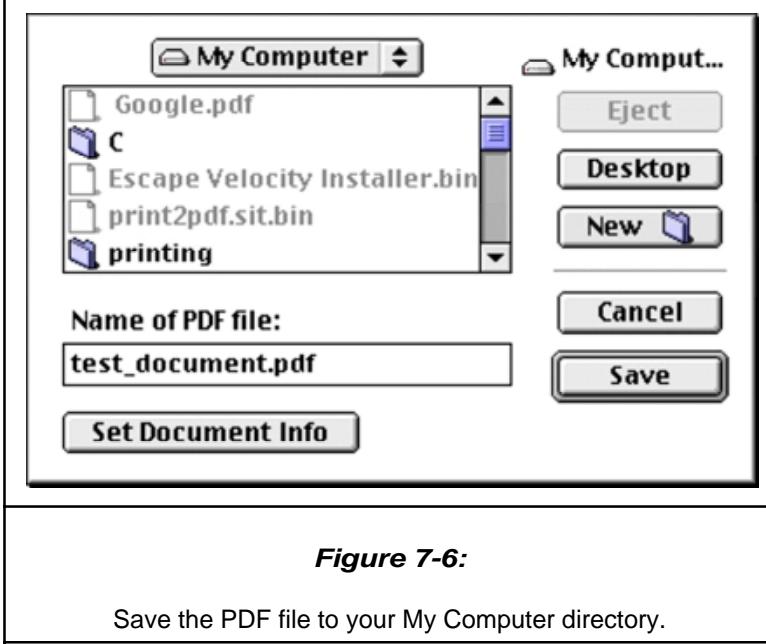


Figure 7-6:

Save the PDF file to your My Computer directory.

8:

Chapter

The Router: Sharing the Internet...

Chapter Objectives:

- What is the Router?
- Using the Router to Share Your Internet..

Basilisk II has three ways of connecting to the internet: through a dedicated modem dial-up connection, through a dedicated ethernet network, and through the magical Router. The first two ways are discussed in the following two chapters, but to be quite honest, the easiest and most exciting way to get onto the net is through the Basilisk II Router. Deceptively bland in its name, the Router does one thing, and it does it well: it allows your PC to share whatever internet connection you might have with the emulated Macintosh. You can be connected with a dial-up account through an ISP on your Windows computer, and the Macintosh automatically taps into this connection to browse the internet. Or, you can have a dedicated DSL or cable “always on” connection with your PC, and the emulated Macintosh can use that connection as well. It simply doesn’t matter. This in itself sets Basilisk II light years ahead of any other Macintosh emulator out there, whether freeware or commercial.

Getting Your Emulated Mac Ready for the Internet...

Before you can start surfing with your Mac through your PC, you’ll need to have a few prerequisites. You will of course need some sort of internet access. As mentioned earlier, it doesn’t matter if you have dial-

up, cable modem, DSL, or LAN. Just as long as your PC can access the net, you're good to go. Additionally, if you're using Windows 95, you'll probably need to update your Windows Sockets to 2.0. The Windows sockets control how Windows connects to the internet and networks in general. You can pick up the update from Microsoft's website here, free of charge:

http://www.microsoft.com/windows95/downloads/contents/wuadmintools/s_wunetworkingtools/w95sockets2/

Note that you'll only need this if Windows gives you an error indicating that the Router cannot start, and that you'll need to update your version of Windows Sockets. Windows 98, Me, NT, and 2000 users shouldn't need to worry about any of this. Ahh...that magic of progress.

These chapters assume that you've installed either Mac OS 7.5.3, 7.5.5 or Mac OS 8. These versions of the Mac OS have the needed software built right in for a connection to the internet. Additionally, if you're using OS 7.5.3/5, you'll need to install an internet browser. I recommend Netscape Navigator 3.04 for this. Make sure that you download to the Virtual Desktop folder inside your Basilisk II directory:

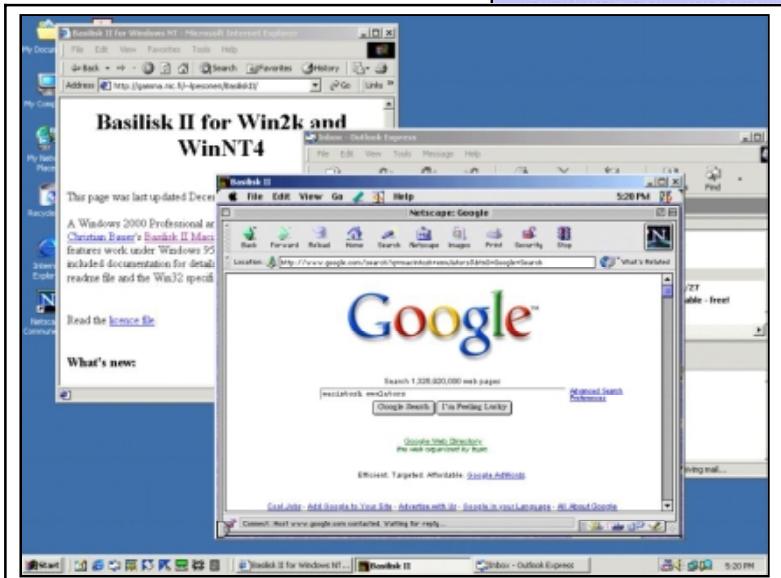


Figure 8-1:

Basilisk II sharing the Windows 2000 ethernet connection to the Internet. Notice that Internet Explorer and Outlook Express are running in the PC's background, as Netscape for the Macintosh is running in the foreground.

archive.netscape.com/archive/navigator/3.04/shipping/english/mac/68k/navigator_complete/netscape3.04.hqx

These files are in Binhex format to preserve the Macintosh's resource fork. For instructions on how to extract and decompress them from this format, please refer to Chapter 7, [page 95](#).

Get the Info...

What is Open Transport? It's the base for all Macintosh internet communication. It is analogous to Microsoft's Network control panel. This is where you place your DNS numbers and protocols. The nice thing about Open Transport is that after you make changes to the values, you don't need to restart your Mac. Microsoft finally got this right in Windows 2000, but the Mac has been this way for years.

Preparing Mac OS 7.5.3/7.5.5 for the Internet: Open Transport and Netscape...

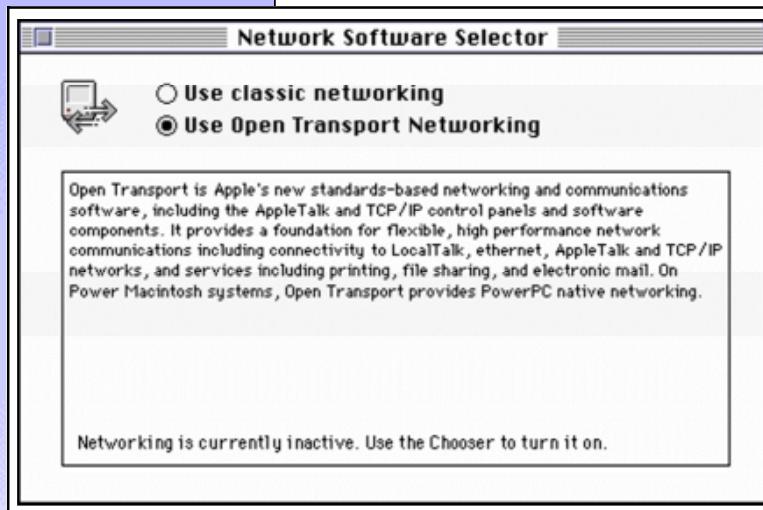


Figure 8-2:

The Macintosh Network Software Selector. Use this program to change the default networking client on the Mac.

As the title implies, this section is only for those users running Mac OS 7.5.3 or 7.5.5. The reason is that on older Macintoshes, the standard networking software was MacTCP. Although good in its day, it was replaced by Open Transport which offers much greater performance and stability. Sometimes the older MacTCP gets installed as the default networking software instead of Open Transport.

As noted previously, Mac OS 7.5.3/5 doesn't have any built-in internet browsing software. Be sure that you download the Netscape Navigator 3.04 software

from Netscape's website.

1. Open the Basilisk II GUI application, and click the General tab. Set the CPU option to 68040.

The main requirement of Open Transport is that it must be running on a 68030 or higher Macintosh. Since many programs require a 68040, we're setting Basilisk II up to its highest processor setting. Once this step is finished, start Basilisk II by clicking Run.

2. After the Macintosh boots, double click the Macintosh's hard drive, and then double click the Apple Extras folder.

3. Find and double click the Network Software Selector icon.

4. The Network Software Selector screen pops up. Make sure that the Use Open Transport Networking option is selected. If it isn't, make the change (see Figure 8-2).

5. Close the screen by clicking the close box in the upper left of the window.

6. Restart the Mac by clicking the Special menu, and then clicking Restart.

Now we need to install Netscape Navigator. Decode and decompress the Navigator package in the same way as you did in Chapter 7, [page 95](#). Once you have finished decoding and decompressing Navigator, double click its installer icon and follow the directions. Again, you may need to restart the Mac. If asked, go ahead and restart.

Preparing Open Transport for Internet Access...

This section could be named “aren’t you glad you’re using Mac OS 8?”, because Mac OS 8 has all the software needed to connect to the internet built right in. But, one is free, and the other is not. I’m not going to condemn you for using the free one. This section is for people using both Mac OS 8 and 7.5.3/5, as the set up process is identical from here on out.

1. Click the Apple Menu, point to Control Panels, and click TCP/IP.

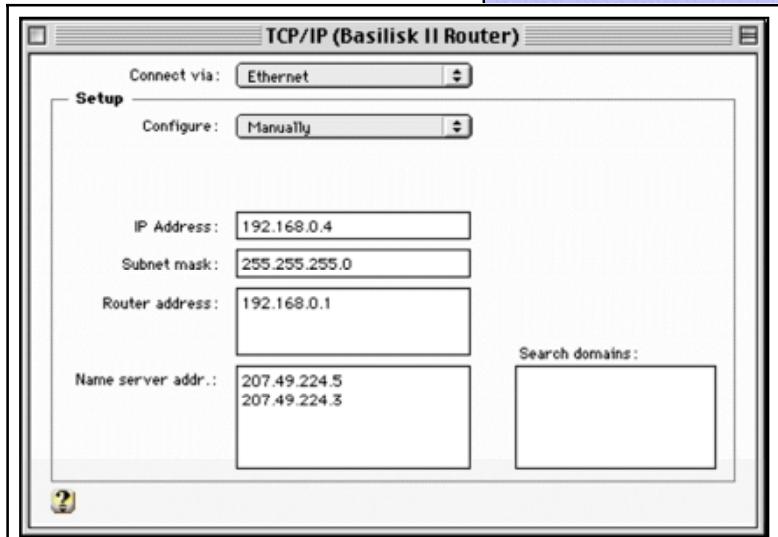


Figure 8-3:

The Macintosh TCP/IP control panel. Use this panel to set up your network settings for Basilisk II to share your PC’s internet connection.

2. When this control panel pops up, make sure that Ethernet is selected in the “Connect Via:” tab and that Manually is selected in the “Configure:” tab.

The boxes labeled IP Address, Subnet Mask, Router Address, Name server addr, and Search domains should all become active. For the most part, the following information will work just fine for home users on a dial-up ISP connection or broadband DSL or cable modem connection.

Beware: If you are on a corporate LAN or similar network, make sure that you have permission from your system administrator to use the Basilisk II Router feature. Make sure that he or she assigns you an IP address, subnet mask, and router address before you try anything yourself. Failure to do so may cost you your job!

That being said, enter the following information in the proper fields:

**IP Address: 192.168.0.4
Subnet Mask: 255.255.255.0
Router: 192.168.0.1**

In addition, in the Name Server Addr field, enter the DNS numbers assigned you by your ISP or system administrator. You can also type the domain name of your ISP or network in the Search Domains field, but this is not really necessary.

3. Close the TCP/IP control panel, telling the Macintosh to save the changes.

Connecting to the Internet...

Now, we're finally ready to connect to the internet! Make sure that your PC is connected to the internet. Depending on what Mac OS you're using, the next steps can vary. If you're using 7.5.3/5, then double click Netscape Navigator. Netscape should be located on the Macintosh hard drive in the folder named Netscape Folder. You might want to drag the Netscape program icon in this folder out to the Mac's desktop just for convenience. If you're using Mac OS 8, simply double click the Browse the Internet icon on your Mac's desktop. This automatically launches your default internet browser. If you're using Mac OS 8, then this default browser is Netscape Navigator or Internet Explorer, depending on how old or new your Mac OS 8 CD is. Both are very capable browsers. From here on out, things are pretty much the same as browsing the net on your PC. The only difference is that now you can browse the net on both the Mac and PC on the same internet connection, all at the same time!

9: Chapter Internet With Apple's PPP...

Chapter Objectives:

- Configuring Apple's PPP for Dial-Up Connection.

So now that you've seen the easy way to connect to the internet using the Basilisk II Router function, here's the hard way, part I. This chapter describes how to connect to the internet using Apple's PPP. This requires that you dial up to the internet via your modem from *within* Basilisk II. That also means that if you have an internet connection established via your PC's modem, you'll need to disconnect it and then re-dial the internet within your emulated Macintosh. I'm including this chapter only for completeness, and in the event that the Router function doesn't work for you.

Getting Started: Make Sure You Have What's Needed...

As before, these chapters assume that you've installed either Mac OS 7.5.3, 7.5.5 or Mac OS 8. If you are using 7.5.3/5, you'll need to install Netscape Navigator 3.04. For information on this process, see the previous chapter on [page 101](#).

Also, both Mac OS 7.5.3 and 7.5.5 don't include the OT/PPP software needed to dial your ISP. You'll need to install it as well, downloading it to your Virtual Desktop directory inside your Basilisk II folder. Make sure that you download the Net Install, Binhex version. it's the one with the .hqx extension:

<<http://asu.info.apple.com/swupdates.nsf/artnum/n10754>>

You also need the Netscape 3.04 browser suite, located on Netscape's homepage:

archive.netscape.com/archive/navigator/3.04/shipping/english/mac/68k/navigator_complete/netscape3.04.hqx

These files are in Binhex format to preserve the Macintosh's resource fork. For instructions on how to extract and decompress them from this format, please refer to Chapter 7, [page 95](#).

You also need a dial-up internet account through an Internet Service Provider (ISP). The internet has exploded with providers all over the world, and so finding one in your area should not be difficult.

Make sure that Basilisk II is set up to match the port number of your PC's modem. You can do this by going to the Ports tab in the Basilisk II GUI. Under the Modem Port field, select the correct PC COM port that matches your PC's modem port. See [page 41](#) for an example screenshot, which shows the correct port to be COM1. Of course, your PC may differ.

Get the Info...

What is Open Transport and OT/PPP? These two gems are separate software components that work together to help your Macintosh communicate over a dial-up internet connection. The OT/PPP portion of the package is a Macintosh Control Panel which functions much like Microsoft Windows' Dial-Up Networking. This control panel is responsible for dialing the phone number and sending your username and password to the ISP. The Open Transport portion is analogous to Microsoft's Network control panel. This is where you place your DNS numbers and protocols. The nice thing about Open Transport is that after you make changes to the values, you don't need to restart your Mac. Microsoft finally got this right in Windows 2000, but the Mac has been this way for years.

For further reading, you can find info on Open Transport and OT/PPP on Apple's website here:

<<http://asu.info.apple.com/swupdates.nsf/artnum/n10739>>

<<http://asu.info.apple.com/swupdates.nsf/artnum/n10754>>

Preparing Mac OS 7.5.3/7.5.5 for the Internet...

As the title implies, this section is only for those users running Mac OS 7.5.3 or 7.5.5. The reason is that on older Macintoshes, the standard networking software was MacTCP. Although good in its day, it was replaced by Open Transport which offers much greater performance and stability. Sometimes the older MacTCP gets installed

as the default networking software instead of Open Transport. In addition, Mac OS 7.5.3/5 doesn't have any built-in internet browsing software or dial-up software. Again, make sure that you have downloaded the OT/PPP software from Apple's website, and the Netscape Navigator 3.04 software from Netscape's website.

1. Open the Basilisk II GUI application, and click the General tab. Set the CPU option to 68040.

The main requirement of Open Transport is that it must be running on a 68030 or higher Macintosh. Since many programs require a 68040, we're setting Basilisk II up to it's highest processor setting. Once this step is finished, start Basilisk II by clicking Run.

2. After the Macintosh boots, double click the Macintosh's hard drive, and then double click the Apple Extras folder.

3. Find and double click the Network Software Selector icon.

4. The Network Software Selector screen pops up. Make sure that the Use Open Transport Networking option is selected. If it isn't, make the change.

5. Close the screen by clicking the close box in the upper left of the window.

6. Restart the Mac by clicking the Special menu, and then clicking Restart.

The Macintosh restarts, and you're ready to install and set up your Mac to connect to the internet.

The second portion of getting OS 7.5.3/5 up to date is to install OT/PPP.

1. Once you've downloaded the OT/PPP software package to your directory on your PC's hard drive, transfer it over to the Macintosh using Basilisk II's My Computer function and decode and decompress it using Stuffit Expander. These steps are explained in Chapter 7, page 95.

2. The installer places a folder named OT PPP 1.0-Net Install Folder into your Basilisk II My Computer window. Double click this new folder. Inside is a folder named NetInstall. Double click this folder.

3. Inside this new folder is an icon named Installer. Double click it and follow the installation directions, using the defaults. Once the installation completes, the installer asks you to restart your Mac. Go ahead and do so.

The third portion of getting OS 7.5.3/5 up to date is to install Netscape Navigator. Much in the same way that you decoded and decompressed the OT/PPP package above, do the same for the Navigator 3.04 package. Once you have finished decoding and decompressing Navigator, double click its installer icon and follow the directions. Again, you may need to restart the Mac. If asked, go ahead and restart.

Configuring your Mac for the Internet...

This section could be named “aren’t you glad you’re using Mac OS 8?”, because Mac OS 8 has all the software needed to connect to the internet built right in. But, one is free, and the other is not. Whichever one you have chosen, this section covers both OS 8 and 7.xx. The remaining set up process is identical for both.

1. Boot your emulated Macintosh. Once it’s up and running, click the Apple menu in the upper left corner of the screen, point to Control Panels, and click Modem.

2. The “Connect Via:” should be set to Modem Port. If it isn’t, go ahead and change it.

3. The Modem setting contains a listing of various modem drivers. Select the modem that best matches your modem. If you’re not sure what kind of modem your PC has, you can find this information in your PC’s Modems control panel (Start Menu --> Settings --> Control Panel --> Modems).

4. You can disregard the Sound, Dialing, and Ignore dial tone options, and close the Modem control panel by clicking the close box in the upper left corner. When the Mac asks you if you want to save the changes you just made, go ahead and save them.

5. Now, click the Apple Menu, point to Control Panels, and click TCP/IP.

6. When the control panel pops up, make sure that PPP is selected in the “Connect Via:” section, and Configure Using PPP Server is selected in the “Configure:” section.

7. Type your DNS numbers in the Name Server Addr section at the bottom of the window. These will have been given to you by your internet service provider.

8. Type the domain name of your internet service provider in the Search Domains section. Again, this can be obtained by calling your internet service provider. Close the TCP/IP control panel, again saving the changes.

9. Click the Apple Menu, point to Control Panels, and click PPP. This is the control panel where you enter your username, password, and ISP phone number. Enter this information as it was given to you by your ISP. You can check the Save Password box if you don't want to enter your password each time you connect.

10. Close the PPP control panel by clicking the close box in the upper left corner, saving the changes when asked.

And Finally, the Connection...

Now, we're finally ready to connect to the internet! All that needs to be done is to launch your internet browser, and Basilisk II should dial up using your newly created internet connection. Depending on what Mac OS you're using, this could vary. If you're using 7.5.3/5, then you'll double click Netscape Navigator. Netscape should be located on the Macintosh hard drive in the folder Netscape Folder. You might want to drag the Netscape program icon in this folder out to the Mac's desktop just for convenience. If you're using Mac OS 8, all you'll need to do is double click the Browse the Internet icon on your Mac's desktop. This automatically launches your default internet browser, which may be either Netscape Navigator or Microsoft Internet Explorer, depending on how old or new your Mac OS 8 CD is.

If you're having problems connecting to the internet, you may wish to increase the priorities of the Serial Port In and Serial Port Out options. These are located on the Priorities tab in the Basilisk II GUI. This may be necessary for some software based modems, such as the WinModem.

10:

Chapter

Ethernet of Basilisk II...

Chapter Objectives:

- Installing the Ethernet driver.
- Configuring Windows to use the driver.
- Configuring Mac OS

Last on the list of internet connection methods is Basilisk II's ethernet functions. This chapter deals with getting your newly emulated Macintosh communicating with the internet on your local area network. If you're using Windows NT, 95, 98, or Me, then the process is pretty much the same across the board. If you're using Windows 2000, the setup process is a bit different. Also if you're using Mac OS 7.5.3/5, you'll read to read how to prepare the Mac to connect to the internet as outlined on page 101-104. If you haven't read this yet, I strongly suggest doing so before reading on.

Installing the Basilisk II Ethernet Driver in Windows 9x and Me...

Basilisk II is equipped with a very flexible ethernet driver that's quite easy to install. The following section outlines this process, touching upon Windows 9x and Me, while the next explains Windows 2000 and NT.

The first thing that we need to do is install the driver using the Windows Network control panel.

1. Click the Start menu, point to Settings, and click Control Panel.

2. Double click the control panel marked Network.

This is Microsoft's interface for adding, controlling, and managing the network properties of your computer. Make sure that you are on the Configuration tab across the top of the screen.

3. Click the button marked Add, and then double click the choice marked Protocol.

A protocol is a kind of language that the computer uses in order to communicate on a network. Basilisk II contains a custom protocol to enable the emulated Macintosh to communicate with Microsoft Windows' ethernet connection.

4. Click the button marked "Have Disk...", navigate to your Basilisk II directory\ethernet drivers, and choose the appropriate folder that corresponds to your operating system.

Of course this step varies depending on the version of Windows that you're using. If you're using Windows 95, 98, or 98 SE (Second Edition), then double click the folder marked Win9x. If you're using Windows Me, then choose WinMe.

5. Click OK three or four times, depending on your version of Windows, and then restart your computer.

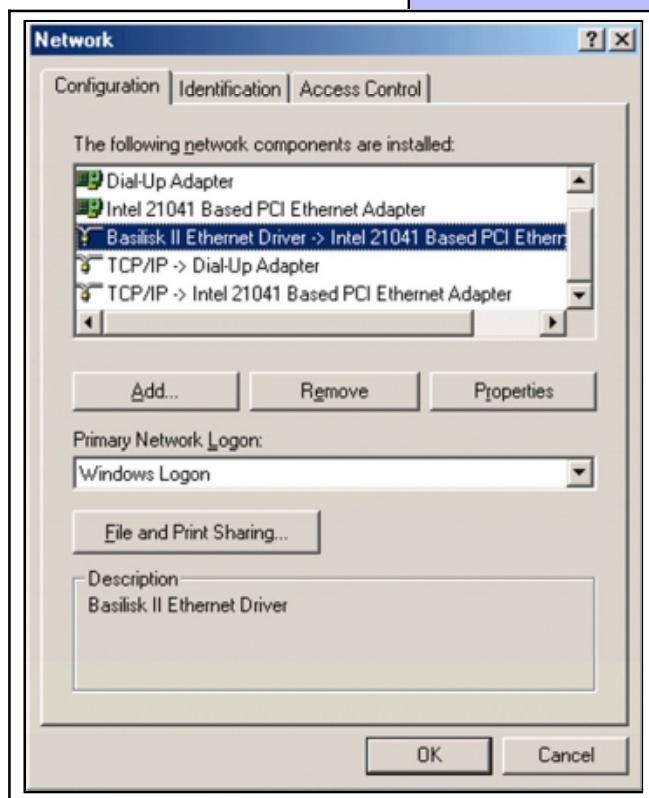
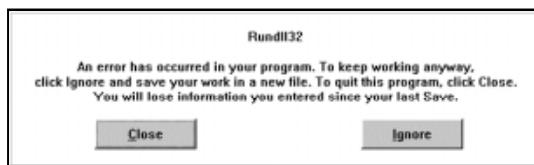


Figure 10-1:

The Network control panel under Windows Me.
Notice the Basilisk II Ethernet Driver.

Get the Info...

There was a bug in some earlier builds of Basilisk II's ethernet driver that caused problems during the installation process. If your system inexplicably crashes during the installation with this error:



then make sure that you are using the latest version of Basilisk II. This problem was caused by bugs in the .inf code, the file that tells Windows how to install the ethernet driver.



Figure 10-2:
The Local Area Connection Properties under Windows 2000. Notice the Basilisk II Ethernet Driver.

Installing the Basilisk II Ethernet Driver in Windows 2000 and NT 4...

If you've chosen to go with Microsoft's heavyweight OSes, the installation process is still pretty much the same as with Me and 9x. You need to add the Basilisk II ethernet driver via the network control panel. To install the ethernet device, make sure that you are logged into NT or 2000 as Administrator, or with an account with administrator rights.

For Windows 2000:

1. Click the Start Menu, point to Settings, and click Network and Dial-Up Connections.

2. Double click the Local Area Connection icon, and then click the Properties button.

3. Click the Install button, double click Protocol, and click Have Disk.

This allows you to choose an alternate protocol that's not listed in the standard Windows listing.

4. Using the “Browse...” button, navigate to your Basilisk II directory\ethernet drivers\win2k folder. Once there, click the OK button, and then click OK again.

This process tells Windows 2000 to install the Basilisk II ethernet driver as a protocol so that the emulated Macintosh can share the Windows ethernet/internet connection. When the process is complete, Windows adds a component called Basilisk II Ethernet Driver to the listing of items in the Local Area Connection Properties control panel. This is shown in Figure 10-2.

5. Click Close on the Local Area Connection Properties window, click Close again, and restart your Windows 2000 computer.

For Windows NT:

1. Click the Start Menu, point to Settings, and click Control Panel.

2. Double click the icon marked Network, and then click the Services tab.

Unlike Windows 2000, 9x, and Me, the Windows NT version of the Basilisk II ethernet driver is added as a service, and not a protocol.

3. Click the “Add...” button, and then click “Have Disk...”

4. Type the path to your Basilisk II directory\ethernet drivers\NT4 and click OK three times. You will have to reboot.

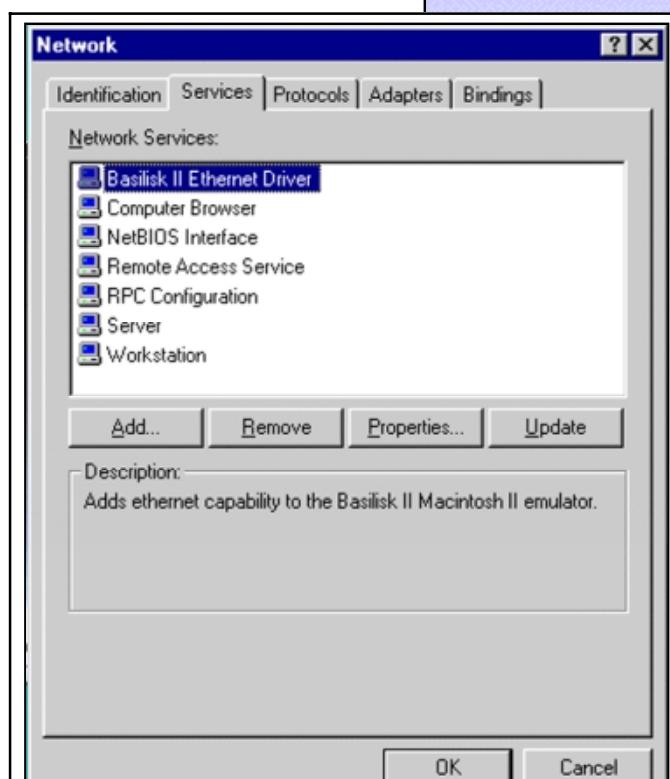


Figure 10-3:

The Network control panel under Windows NT 4. Notice the Basilisk II Ethernet Driver.

Unlike 2000, Windows NT 4 does not provide a browse box so during this step, you'll have to manually enter the path to the ethernet driver. So much for New Technology, which is what "NT" stands for.

Preparing Windows and Macintosh to Use the Ethernet Driver...

OK -- now that we have the ethernet driver installed on whatever Windows flavor you happen to be using, it's now time to release the

Windows' IP address to Basilisk II. The reason for this is that when you try to go online with Basilisk II while using the Basilisk II ethernet driver, the internet packets are not routed correctly back to the Macintosh. For example, when you open a web browser within the emulated Macintosh, it sends out request packets to whatever website you're trying to connect to. When the website sends a reply message to your computer, that response is not routed to the Macintosh. Instead, it is routed back to your PC, which doesn't know what to do with what it sees as useless data. For this reason, we need to give Basilisk II exclusive access to the ethernet connection. The downside to this is obvious: while the Mac is using the internet, your PC

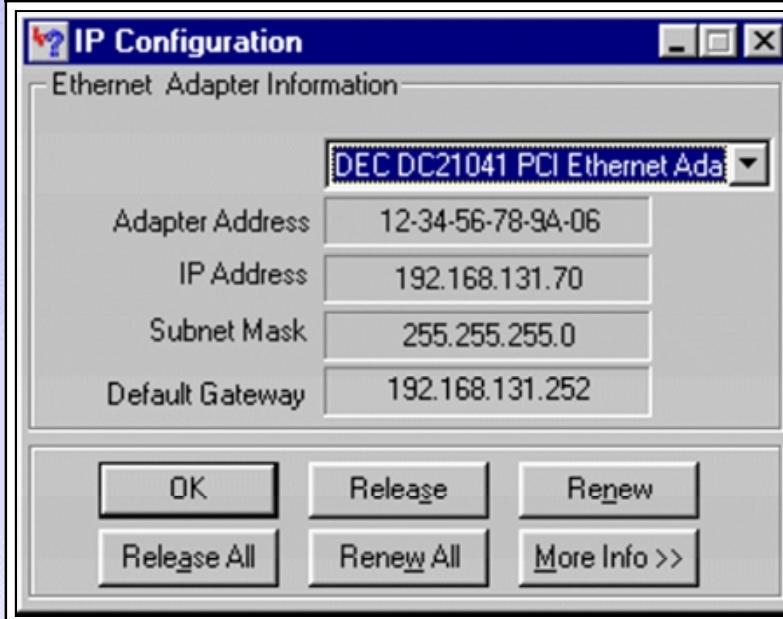


Figure 10-4:

The Windows IP Configuration utility under Windows 9x and Me. Use this tool to release the Windows IP address to Basilisk II.

can't. The perfect solution to this problem is the Basilisk II Router function, described in Chapter 8. Unfortunately, the strategy described below does not work with Windows 2000. For Windows 2000 users, I have a separate strategy, described in the next few paragraphs.

For Windows 9x and Me users, you'll need to configure the Windows IP Configuration utility to release the ethernet connection to Basilisk II.

- 1. Click the Start menu and click “Run...”**
- 2. In the window that pops up, type: winipcfg**
- 3. A window pops up similar to that in Figure 10-4. Click the button marked Release All.**

This releases the ethernet card for use in Basilisk II. As stated earlier, this also takes the ethernet away from your PC. In order to restore the connection to Windows, you'll need to run the winipcfg program again (or simply leave it open and minimize it during your Basilisk II session) and click the Renew All button. This restores the network configuration to its previous settings so that the PC can use the internet again.

Now, boot your emulated Macintosh.

- 4. Click the Apple Menu, point to Control Panels, and click TCP/IP.**

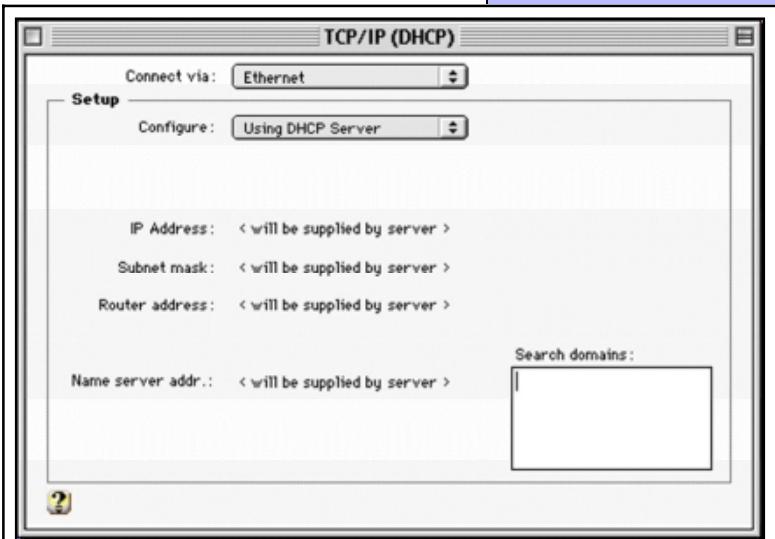


Figure 10-5:

Make sure that the Macintosh is set to obtain its internet connection via DHCP.

The Macintosh TCP/IP control pops up, similar to Figure 10-5. This is the Macintosh equivalent of the Windows Network control panel.

- 5. Set the “Connect Via:” option to Ethernet and the “Configure:” option to Using DHCP Server.**
- 6. Click the close box in the upper left corner of the window. The Macintosh asks if you would like to save the changes. Click Save.**

If you're using Windows NT 4, the process is similar to that explained with Windows 9x and Me.

- 1. Click the Start button, point to Settings, and click Command Prompt.**
- 2. A DOS-like windows pop up. Type: ipconfig /release**

This releases the internet connection to Basilisk II. Again, to restore

the connection to the PC, you need to re-run this configuration program and type: **ipconfig /renew**

3. Boot the emulated Macintosh.

4. Click the Apple Menu, point to Control Panels, and click TCP/IP.

Again, as with the Windows 9x and Windows Me example, we need to configure the Mac's network to use the DHCP option. This is shown in Figure 10-5.

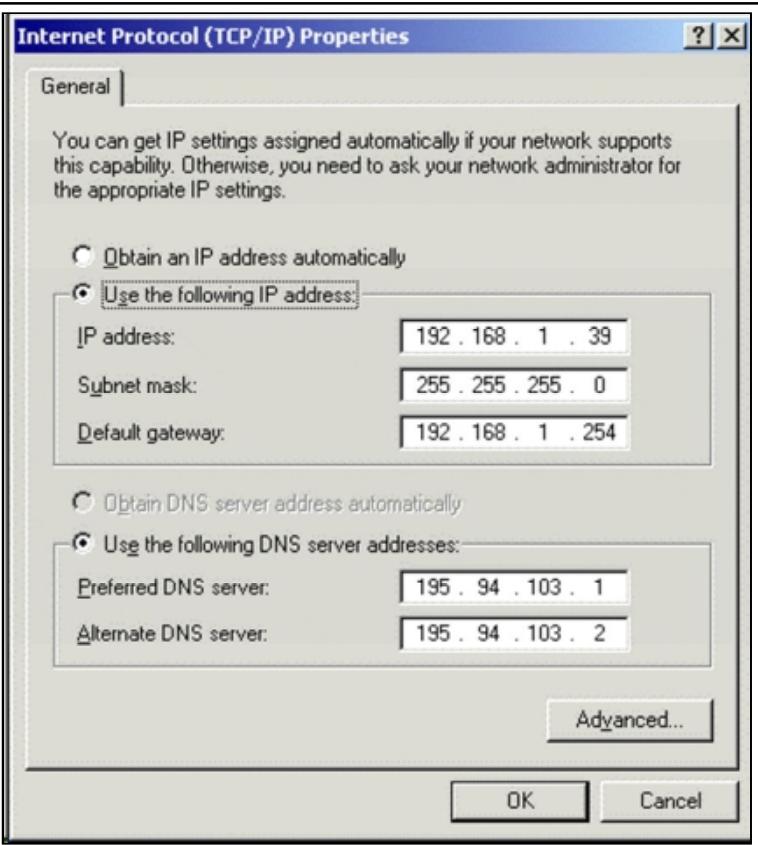
5. Set the “Connect Via:” option to Ethernet and the “Configure:” option to Using DHCP Server.

6. Click the close box in the upper left corner of the window. The Macintosh asks if you would like to save the changes. Click Save.

Windows 2000 is a special case. The instructions above don't seem to work with it. Although Windows 2000 does have an ipconfig command similar to Windows NT 4, Basilisk II refuses to use the

Figure 10-6:

The TCP/IP properties under Windows 2000. Make sure to copy your IP address, subnet mask, default gateway, and DNS numbers. You'll need these when setting up the TCP/IP control panel on the Mac.



internet connection once it's released. So, the only way that we can seem to get the ethernet driver to work with Windows 2000 is to assign a bogus IP address similar to the way that the Router option does (see [page 101](#) for details). But the catch here is that your Windows PC must have a static IP address. A dynamically assigned IP address doesn't seem to work. So if your PC is on a network where its IP address is assigned via DHCP, or dynamically, I recommend using the Router function and forgetting the Basilisk II ethernet driver altogether.

1. Click the Start Menu, point to Settings, and click Network and Dial-Up Connections.

2. Double click Local Area Network, and then click Properties.

3. Double click the TCP/IP item (not the checkbox).

Windows presents you with a screen similar to Figure 10-6. Remember that if the window has Obtain IP Address Automatically, you should close up everything and use the Router function described in Chapter 8 on page 101.

4. Copy the numbers in the IP Address, Subnet Mask, Default Gateway, and Preferred and Alternate DNS Servers.

You need these numbers in order set up the TCP/IP control panel on the Macintosh side. After copying the numbers, close the network control panel by clicking Cancel twice.

5. Boot your emulated Macintosh. Once it boots, click the Apple menu, point to Control Panels, and click TCP/IP.

6. On the window that pops up, make sure that the "Connect Via..." is set to Ethernet, and "Configure:" is set to Manually.

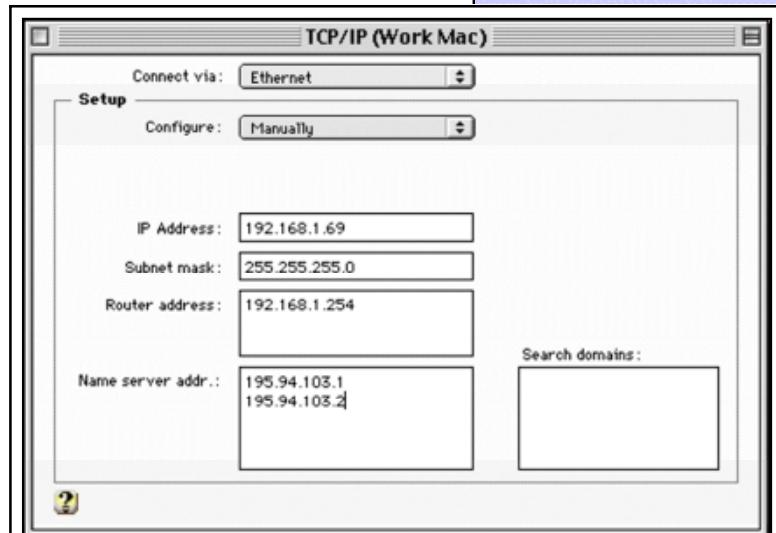


Figure 10-7:

Set up the ether net numbers to correspond with your PC's settings except for the IP address, which should be different.

Notice that the Subnet Mask, Router Address, and Name Server Addresses correspond to the PC's Subnet Mask, Default Gateway, and Preferred/Alternate DNS servers, respectively.

7. Enter the correct numbers into “IP Address:”, “Subnet Mask:”, “Router Address:”, and “Name Server Addr:”.

This is the point where those numbers you copied from your Windows 2000 network come in handy. The only number that should differ from your original settings in Windows 2000 is the IP address: it *must* be different from your PC's IP address. It can be pretty much anything, but bear in mind that it can't be the same address as any other computer on your network. *This is where you must make sure that you speak with your network administrator to ensure that you don't pick an IP address that conflicts with other machines on the network.* As shown in Figure 10-7, all the other numbers are identical to your Windows 2000 settings. Note that “Router:” on the Mac side is the same as “Default Gateway:” on the Windows side.

6. Click the close box in the upper left corner of the window. The Macintosh asks if you would like to save the change. Click Save.

Connecting to the Internet on the Macintosh...

And finally, we're ready! Barring any major problems, your Macintosh should now use the PC's connection through your LAN to access the internet. All that needs to be done is to launch your internet browser. Depending on what Mac OS you're using, this could vary. If you're using 7.5.3/5, then you'll double click Netscape Navigator. Netscape should be located on the Macintosh hard drive in the folder named Netscape Folder. You might want to drag the Netscape program icon in this folder out to the Mac's desktop just for convenience. If you're using Mac OS 8, all you'll need to do is double click the Browse the Internet icon on your Mac's desktop. This automatically launches your default internet browser, which is either Internet Explorer or Netscape Navigator.

11:

Chapter

Useful Stuff for Your Mac...

Chapter Objectives:

- Disk Tools
- Internet Utilities
- Emulation

No manual on Macintosh emulation would be complete without a chapter on actual software that you can run on your new emulator. Throughout this chapter, we'll cover some of the various (useful) software that you can run on Mac OS under Basilisk II.

Disk Tools...

No matter what anyone tells you, Norton Utilities is not the best disk utility program for keeping Basilisk II running smoothly. There's one big reason for this: the newest versions of Norton Utilities for Macintosh run only on a PowerMacintosh. Since Basilisk II emulates 68k Macs, Norton is out. But, never fear. There is a compatible solution, and an outright better solution, and it's called TechTool 3 by MicroMat, Inc. On a real Mac, this software checks RAM, ROM, PRAM, the desktop file, disk files, disk structure, physical disk condition, and even Macintosh viruses (although there are only about 50 Macintosh specific viruses out there). Basilisk II fails some of the tests dealing with the actual Macintosh hardware, such as RAM and the PRAM chip because Basilisk II doesn't emulate the actual hardware of a real Mac. But other tests that deal with the file structure and disk defragmentation are quite nice when you want to speed up your Macintosh disk access. You can even have TechTool defragment and rebuild the disk's directory structure. This accelerates the speed at

which the Macintosh accesses the “map” of the drive. To round out the list, TechTool backs up the directory structure of the Macintosh volume so that repairs can be made in the event that something goes wrong.

TechTool Pro is a commercial product with no demo. It costs around \$70, but is worth it. And if PowerMac emulation should come out, you'll have a ready-made fix-it shop ready to go! Check out TechTool Pro on MicroMat Corporation's website:

<http://www.micromat.com>

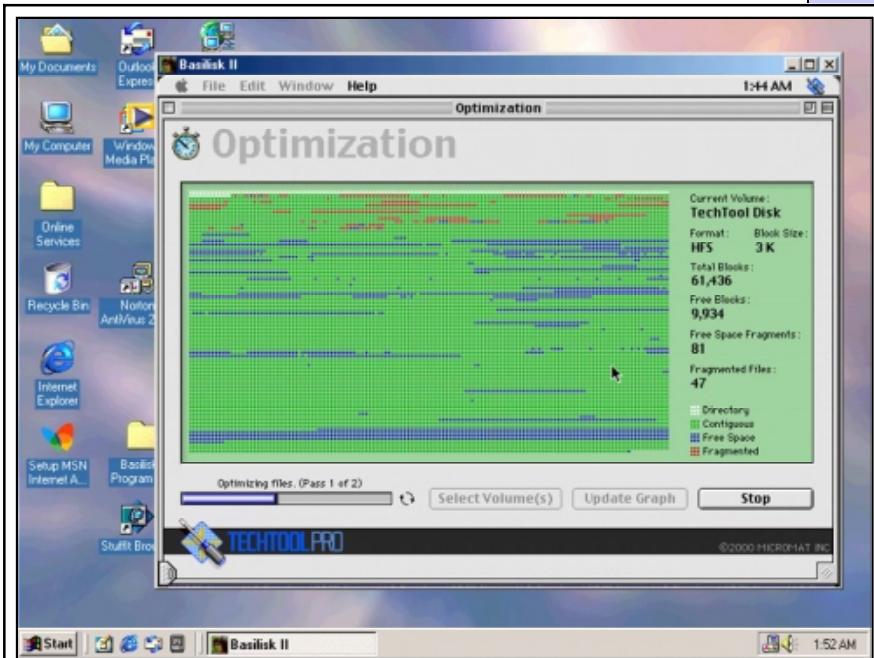


Figure 11-1:

TechTool 3 checks almost every aspect of a Macintosh except for how much dust is in the case. Although many of the diagnostics won't work correctly with Basilisk II, the drive defrag functions and file checking features are quite useful for keeping your Basilisk II/Macintosh hard disk files in shape.

Compression...

Every computing platform has some form of file compression, needed when that one file will take forever to send over the internet unless it is a bit smaller. In comes compression software, able to almost half a file

in size with just a single mouse click. Just as Windows has its own compression tools, so does the Macintosh. Unlike the PC, which uses the ZIP compression format, the mainstay compression agent on the Mac is called Stuffit. Stuffit is similar to ZIP, and can in some cases give better compression than ZIP. There are two solutions on the

Macintosh for compressing data into the Stuffit format: Stuffit Lite and Stuffit Deluxe. Both are similar in application, allowing you to create a window and simply drop files into that window. The software then does the rest, compressing the files as fast as is computingly possible. This all happens without losing any of the original files' data. You can even create self-extracting archives, files that don't need a copy of Stuffit Expander for decompression. And to make sure that the data fork and resource fork stay intact on a Macintosh file, you can also encode the completed archive into

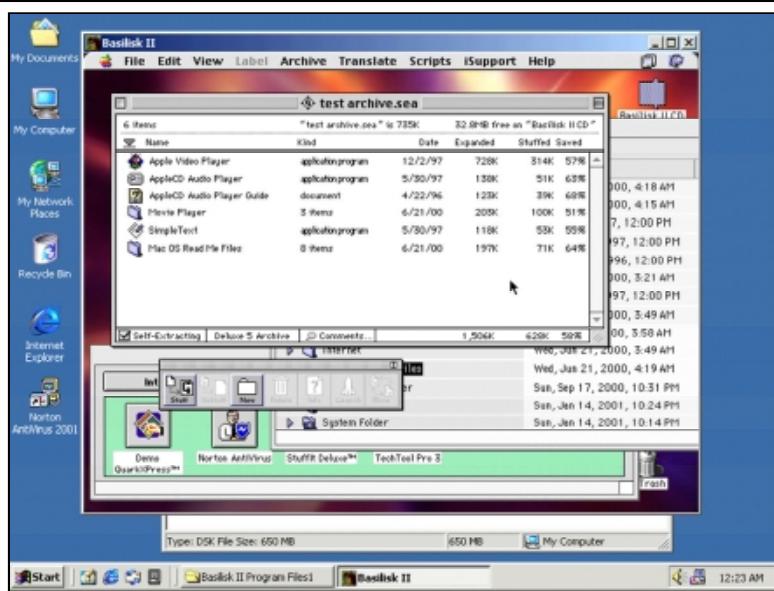


Figure 11-2:

Stuffit Deluxe 5.5 allows you to create compressed archives similar to the Zip format on Windows.

MacBinary or Binhex (for more information on this, see “Get the Info...” [on page 30](#)).

You can pick up a trial copy of Stuffit Lite at:

[<http://www.aladdinsys.com/stuffitlite>](http://www.aladdinsys.com/stuffitlite)

Keep in mind that Stuffit Lite is a commercial product, and that if you use it, you're obligated to pay for it. But, it only runs about \$30, so you won't need a second mortgage to pay for it. If you are wanting to update to Stuffit Deluxe, which does considerably more, adding the ability to create PC ZIP files and PC self extracting archives, you'll need to call and talk directly with Aladdin Systems. The current version of Stuffit Deluxe, version 6, will only run on PowerMacintoshes. All previous versions should run just fine with Basilisk II. I've tested it successfully with Stuffit Deluxe 5.5 with no problems. After speaking with Aladdin's support personal, I was told that they plan to continue supporting 68K Macs. So version 5.5 should still be available, by special order only however.

If you're only looking to compress to the PC ZIP format, and you don't want to pay any money, then MacZIP may be the ticket for you:

<<http://www.sitec.net/maczip>>

To use it, all you need to do is drag and drop files on top of the MacZip icon, and the software does the rest, based on several options that you provide. It also has a nice command line, something almost unheard of in the Mac OS. This should please those of you who love DOS prompts.

One other program that lets you create ZIP archives is called simply ZipIt:

<<http://www.maczipit.com>>

ZipIt also allows you to create self-extracting ZIP archives that decompress on a real Windows computer, as well as Macintosh self-extracting archives. This is similar to Stuffit Deluxe, but the price for ZipIt is a bit more palatable at about \$15.

Internet Software...

We've seen that there are two very big browsers out there for the Macintosh: Internet Explorer from Microsoft, and Netscape Navigator from Netscape Communications Corporation. But there are also alternative browsers available, too. One of the best "rebel" browsers out there is a little 2.7mb program called iCab:

<<http://www.icab.de>>

With 68k and PowerPC flavors, this browser works just fine with Basilisk II, and runs a bit faster than the offerings from Netscape and Microsoft. It's also continually updated, and has no Windows equivalent meaning that it's 100% Macintosh. So you're sure to see a lot more development going into this product for the Mac than with rival Microsoft and Netscape.

If downloading is your game, you'll want to check out Monica:

<<http://www.blackdiamond.co.za/bdmonica.html>>

Monica is a rather useful if you're performing multiple downloads, and want to queue them in a specific order similar to a print queue. Perhaps you're downloading a program that has multiple parts. With Monica, you can queue them up to download one right after the other, or even two to four parts at a time (recommended if you're using a high speed internet connection such as DSL or cable).

For strictly FTP downloads and uploads, the Macintosh has several choices. The one that I use the most is Transmit, from Panic (yes, it is a rather interesting name):

<<http://www.panic.com>>

Transmit not only does the standard FTP upload and download tasks, but also provides for resumable downloads in the event that your internet connection gets lost in the middle of a transmission. You can also synchronize a folder on your hard drive with a folder on a server, making website maintainance a snap! Transmit costs around \$25, and is well worth the price.

If you're looking for one of the oldest (and free) FTP programs on the Mac, try Fetch:

[<http://www.dartmouth.edu/pages/softdev/fetch.html>](http://www.dartmouth.edu/pages/softdev/fetch.html)

Fetch was quite the program back in 1997, but is beginning to show its age today. But, for just straight FTP'ing, you can't go wrong with this tried and true solution. And you can't beat the price.

Remote control software is very useful for transferring files if you're on the road, and need to access the office computer. Basilisk II works quite well with one of these, Timbuktu 4.06 for Macintosh:

[<http://www.netopia.com>](http://www.netopia.com)

Timbuktu also has a Windows version, allowing Macintosh computers to control or access Windows computers, and vice versa. What's really nice about having this software installed on Basilisk II instead of having the PC version is if you already have a PC remote control program such as pcANYWHERE installed on the PC. You can't install Timbuktu on top of pcANYWHERE, as the two have conflicts. Not to mention, there is no Macintosh version of pcANYWHERE. Now, you can have Timbuktu and pcANYWHERE on the same computer without conflicts.

You can use Timbuktu to

contact other Macintoshes over the internet, and use pcANYWHERE to contact other PCs over the internet. Now, if you've already headed on over to Netopia's site only to find Timbuktu Pro or Timbuktu 2000 with no hint of the older 4.06, there's a reason for this. Netopia doesn't sell it separately. You'll need to buy Timbuktu 2000 for Macintosh, which includes the newest, PowerPC-only version of

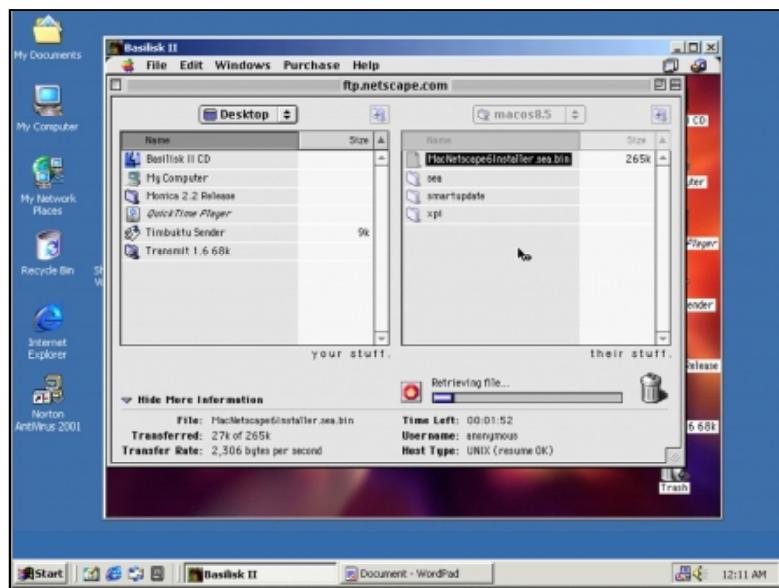


Figure 11-3:

Transmit is an excellent FTP program, allowing you to both upload and download files in a simple to use interface.

Timbuktu, plus the older 4.06 version that runs on 68k Macintoshes.

Note: I have noticed that at least while using the Router function

(*Chapter 8, page 101*)

of Basilisk II that I can't access Windows computers running Timbuktu; I can only access other Macintoshes. But the fact that this software even runs is quite amazing. Timbuktu for Macintosh retails for about \$80.

Unfortunately, Netopia doesn't have a demo version available of Timbuktu 4.06. So, if you'd like to play around with remote control software without shelling out the \$80, you can try AT&T's Virtual Network Computing, or VNC:

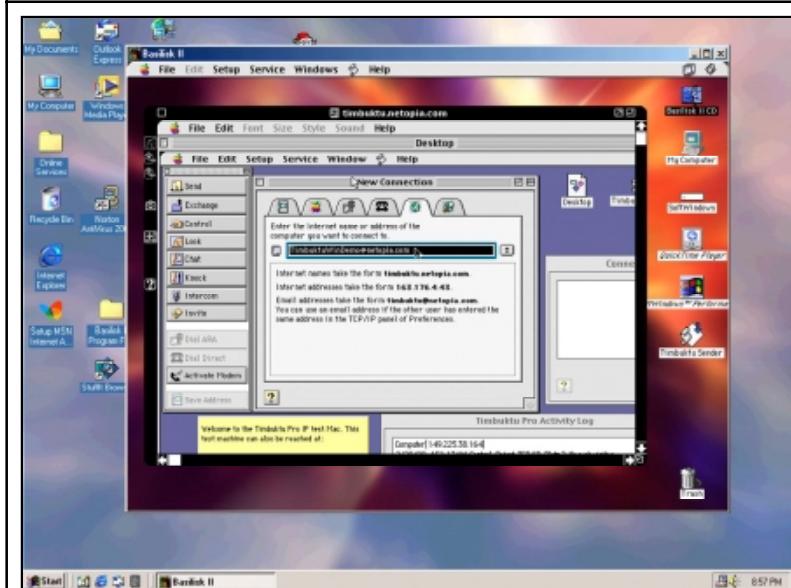


Figure 11-4:

Timbuktu 4.06 allows Basilisk II to access other computers running Timbuktu. This screenshot shows Basilisk II accessing another Macintosh over the internet.

<<http://www.uk.research.att.com/vnc>>

VNC gives Basilisk II remote control abilities, much like Timbuktu, except that it's free. It also includes Linux and Windows versions as well, allowing you to remote control many different platforms.

One key piece of software lacking in the Mac OS, in any version, is simple network software the lets you ping another computer, or to trace the path that your computer takes to reach a site on the internet. Once such free program for the Mac is OTTool. It requires Mac OS 7.6 or above. You can get a copy from Neon Software's website:

<http://www.neon.com/demos_goodies.html>

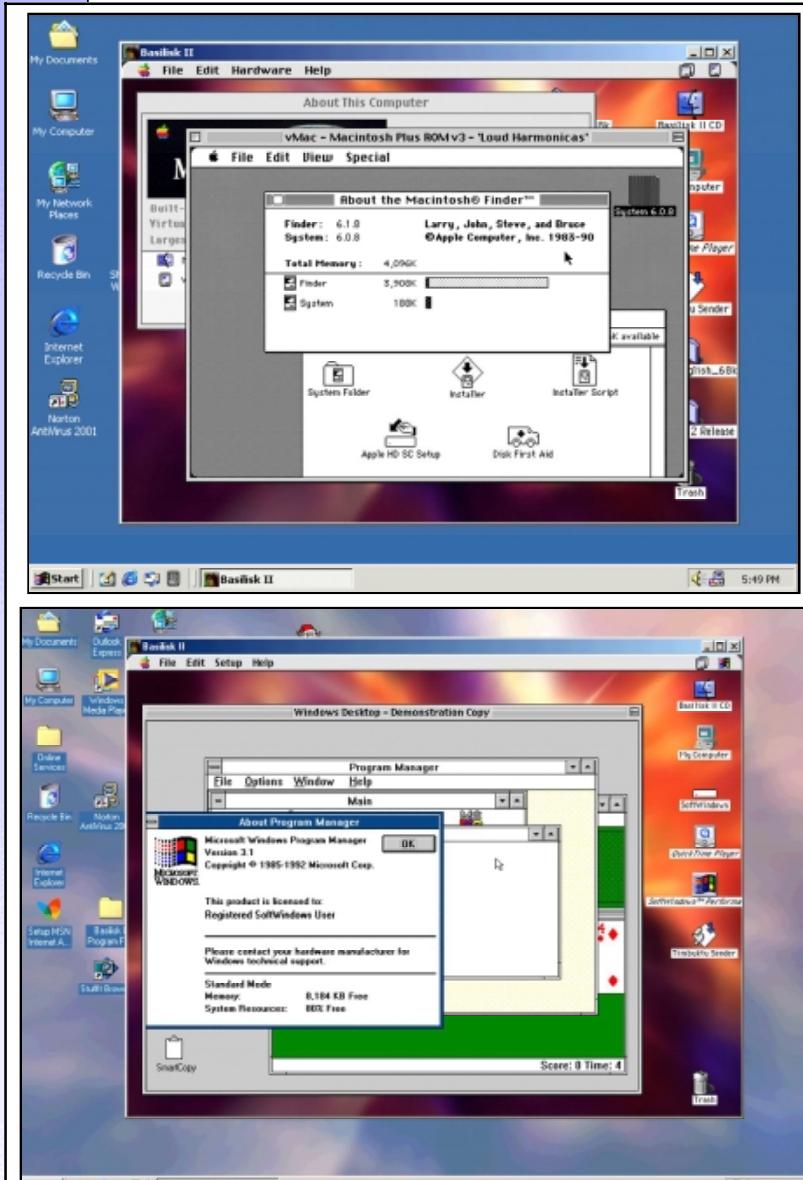


Figure 11-5:

Although probably not the most useful of scenarios, it's sure interesting to try. The top shows vMac with Mac OS 6 running on Basilisk II, and the bottom shows SoftWindows 1.03 with Windows 3.1 running on Basilisk II.

Emulation Software...

Although probably more a curiosity than a useful software category, wouldn't it be neat to try and run an emulator inside of an emulator? Well, with Basilisk II, you can do just that. First on the list is SoftWindows 1.03 for Performa, sold several years ago as a Windows 3.1 and DOS compatibility solution for the Macintosh. It was able to run on both PowerPC based Macs and 68k based Macs. It does run on Basilisk II, and the speed isn't all that bad! The problem is that SoftWindows 1.03 is not officially on sale any longer, and so you'll have to pick up a copy on Ebay.

<<http://www.ebay.com>>

If you really want to get extremely ridiculous, you can emulate another Macintosh on Basilisk II with vMac, a freeware Macintosh Plus emulator:

<<http://www.vmac.org>>

It's not the fastest of emulators, and granted, there is a Windows version of vMac, but who said any of this stuff had to make sense?

12:

Chapter Support Sources..

Chapter Objective:

- Places to Find Help on Basilisk II

So now that we've reached the end of this manual, I hope that you enjoy using Basilisk II. It's one of the best Macintosh emulation solutions available, and the price is just right. I leave you with a list of support links that you may find helpful, along with an FAQ in Chapter 13.

The Basilisk II HomePage:

[<http://www.uni-mainz.de/~bauec002/B2Main.html>](http://www.uni-mainz.de/~bauec002/B2Main.html)

The Basilisk II Windows port HomePage:

[<http://gamma.nic.fi/~lpesonen/BasiliskII>](http://gamma.nic.fi/~lpesonen/BasiliskII)

My page, the OS Emulation HomePage:

[<http://www.kearney.net/~mhoffman>](http://www.kearney.net/~mhoffman)

Simon Biber's Basilisk II Page:

[<http://www.pona.net/basilisk>](http://www.pona.net/basilisk)

Jim Watters' Macintosh Emulation Station:

[<http://run.to/mes>](http://run.to/mes)

E-Maculation Station:

[**<http://www.emaculation.com>**](http://www.emaculation.com)

Getting Onto the Internet Using a Cable Modem:

[**<http://members.nbcu.com/b2coll/internet-cablemodem.htm>**](http://members.nbcu.com/b2coll/internet-cablemodem.htm)

Basilisk II discussion forum:

[**<http://www.delphi.com/basilisk2/start>**](http://www.delphi.com/basilisk2/start)

Macintosh emulation discussion forum:

[**<http://www.delphi.com/MacEmulation/start>**](http://www.delphi.com/MacEmulation/start)

MacWinDOS discussion forum:

[**<http://www.delphi.com/macwindos>**](http://www.delphi.com/macwindos)

13:

Chapter Frequently Asked Questions

Chapter Objective:

- Frequently Asked Questions for Basilisk II

This last section addresses many of the questions that people have brought up regarding problems with Basilisk II. If you are having some problems with Basilisk II, this chapter should be very helpful.

Q: When I try to run a Macintosh game such as Marathon, the computer tells me that I need at least 256 colors. I'm running Basilisk II in thousands or millions of colors. This should be plenty of colors to run a game that only requires 256, shouldn't it?

A: Some older Macintosh games actually required 256 colors, and *that's it*. They wouldn't use any of the higher color modes available on newer Macintoshes. If the Mac was running in thousands or millions of colors and the game asked for only 256 colors, the Mac would normally change video modes "on the fly" to 256, and the game could then play normally. Basilisk II has one large weakness in its graphics engine. It is unable to switch video modes on the fly like a real Macintosh can. For this reason, you need to tell Basilisk II to start up in 256 colors.

- 1. Open the Basilisk II GUI and click the Screen tab.**
- 2. Set the graphics mode to Direct X [Full Screen] and Colors to 256.**

You can now boot Basilisk II, and your game should play at optimum speed without any more color problems.

Q: Why is the Apple on the Apple Menu black, and not multi-colored like other Macintosh screens that I've seen?

A: This sometimes happens after you've set the display mode to thousands or millions of colors, but the Macintosh thinks that you are set to gray scale.

1. While in the Macintosh, Click the File menu and click Find.

2. Type the word "Monitor" and hit the Enter key on your keyboard.

3. Glance through the files until you see the word Monitors (not Monitors and Sound). Double click Monitors.

4. A new window pops up. On the upper left corner of the window are two options: Grays and Colors. Click Colors.

5. Close the Monitors window by clicking the close box in the upper left corner.

Q: When I try to install Mac OS 7.5.3, the Macintosh keeps crashing with an error stating that there is a "Bad F-Line Instruction...".

A: This problem is caused by problems with the Basilisk II FPU emulation option. This seems to crop up less often than it used to, but may still occur every



Figure 13-1:

Marathon running on Basilisk II in 256 colors.

 Sorry, a system error occurred.
"System 7.5.3 01of19.smi"
bad F-Line instruction

Figure 13-2:

Try adjusting the CPU and FPU settings to avoid this error.

now and then. To solve the problem, simply uncheck the FPU option on the General tab in the Basilisk II GUI. Sometimes changing the CPU type to 68030 helps, but is not always necessary. Try going the 68030 route if turning off the FPU option doesn't work by itself. After you've finished installing your new software on the Mac, you can switch the FPU and CPU options back to normal.

Q: I'm trying to boot my emulated Macintosh, and it keeps crashing with a "System Error A/ROSE unimplemented trap". I can't get past this error.

A: The culprit here is the infamous A/ROSE system extension. This has been known to crash other Macintosh emulators as well. To fix it, see [Removing A/ROSE](#) on page 67.

Q: When trying to run Adaptec Toast 4 to record on my CD-R drive on Basilisk II, I get an error that states "Sorry, a system error occurred. 'Adaptec Toast' unimplemented trap".

A: This is most likely due to problems with your version of Toast 4. Updating to version 4.12 should solve the problem. For information on this, [see page 40](#).

Q: I'm trying to run a program on Basilisk II, but the Mac keeps telling me that it needs a PowerPC processor in order to run my software. I can't do anything else with the program.

A: There are two different types of Macintoshes. Older Macintoshes were based on the Motorola 680x0 line of processors, called 68k Macs. In the early 90s, Apple built a new line of Macintoshes based on a RISC processor known as the PowerPC. Present day Macintoshes are still based on the PowerPC. Basilisk II emulates the older 680x0 Macintoshes; specifically, it emulates the older Mac II line. If a program requires a PowerPC based Mac to run, then it can't be run on Basilisk II. Sometimes software manufacturers will create what are known as "fat binaries" that contain the information to run on both PowerPC and 680x0 Macs. Check the software manufacturer of your program to see if there is either a 68k version, or a FAT binary that includes a 68k version.

Q: When trying to boot Basilisk II, I keep getting an error stating "Invalid ROM file size. Basilisk II requires a 512K or 1MB Mac II ROM".

A: As stated in the previous question, Basilisk II only emulates older 68k based Macs. If you're getting this message, chances are that

you're either using a ROM from a PowerPC based Mac which won't work for reasons described above, or a ROM from a really old Mac, such as the old MacPlus or the original Mac. The ROM must be from a Mac that contains a 512K or 1MB ROM. In general, if you're using a Macintosh Quadra or any Mac II computer, the ROM should work.

Q: I'm running Mac OS 7.5.3, and trying to use the Desktop Patterns in the Apple Menu --> Control Panels --> Desktop Patterns. The only patterns that I can see are in black and white, even though I'm running Basilisk II in thousands or millions of colors.

A: Due to problems with Basilisk II and Mac OS 7.5.3 or 7.5.5, the Desktop Patterns don't show up in color when you're running your Mac in thousands or millions of colors. You must run it in 256 colors in order for your desktop patterns to display in color. You can set Basilisk II to 256 colors in the Basilisk II GUI under the Screen tab.

Q: I'm running Mac OS 7.5.3 or 7.5.5, and I want to be able to add a picture to the desktop similar to the way Mac OS 8 does. How can I do this?

A: Mac OS 7.5.3 and 7.5.5 do not support background images. The only way to get a background image on the Desktop is to add a third party utility such as Decor:

<<http://pauillac.inria.fr/~fpottier/hqx/Decor.sit.hqx>>

Remember that even with Decor, you need to be running Basilisk II in 256 colors. As with the Desktop Patterns, you can only display the background image when running in the lower 256 color mode.

Q: I'm trying to set the Macintosh to run in 256 colors in a window, but it keeps opening in thousands or millions



Figure 13-2:

Decor allows placement of wallpaper images on pre-Mac OS 8 systems.

of colors.

A: This problem occurs when trying to run Basilisk II in windowed Direct X mode. Running in this mode limits your ability to alter the number of colors available on the Mac's screen at one time. The fixed number of colors is in thousands or millions. If you need to run 256 colors in windowed mode, you need to set the display mode to Windows GDI on the Screens tab on the Basilisk II GUI. If you need to have 256 colors in Direct X mode, you need to set the Direct X to full screen. Again, this is done on the Screen tab.

Q: I'm trying to get Basilisk II to read some of my old 800K floppy disks, but it won't recognize them.

A: Early Macintosh disks stored 800k on one floppy disk. The drives used to read these disks were specially designed by Apple, and were able to vary their speed when reading floppies. PC drives don't have this ability, and therefore can't read these older floppies. Basilisk II can only read and write to 720k and 1.4MB floppies.

Q: I've upgraded to Windows 2000, and now Basilisk II refuses to recognize any floppy disks.

A: There seems to be a problem with Basilisk II and Windows 2000 with floppy disks. In order to get the floppy to mount on the Mac's desktop, hit the Control, Shift, and F11 keys at the same time. This mounts all media in all drives set up in Basilisk II. You may need to hit these keys a couple of times in order to get the floppies to show up.

Special thanks go to the following for helping me with this manual, and for keeping me sane:

•

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<http://www.kearney.net/~mhoffman>

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