

Going On ...

Before we move on to more advanced easter eggs, I need to explain a new tool you will be using to explore your computer: MacsBug.

MacsBug

MacsBug snoops in the hardware components of your computer, primarily the ROM and RAM. You should be able to find MacsBug almost anywhere. I found my copy on America Online, but have seen it in other places. Place MacsBug in your System Folder; it is not an application. To use it, simply restart your computer and push the sequence of keys that would normally get you to the debugger (usually Command and the Start-up key).

Another note about MacsBug: When MacsBug is installed, if your computer bombs it will go straight to MacsBug. I suggest that you restart your computer at that point. Also, while running MacsBug, do not have an application open, and save all work. Do not leave MacsBug on for a long time or it could result in screen burn in (screen savers don't effect it). Finally, MacsBug is a risky application. You should not fool with it unless you know what your doing or follow the instructions I give you. Remember, its whole purpose is to screw with your system.

Using MacsBug

Once in MacsBug, simply follow the directions explained in the following chapters. If you would like to find more eggs on your own, on a non-PCI Mac type DMA 40800118 999 (display memory in ASCII from location 40800118 and on up) and keep pushing return until you see something interesting. If you reach 408A... you should stop because then it gets pretty boring and I don't think there is anything past there. Some computers will have the "What are you staring at?" message, and others will have the messages you will see in the next two chapters.

It is possible to find things out of the range I mentioned, so feel free to look. You can always return to the desktop by simply typing G and pushing Return. In some earlier versions of MacsBug DMA does not work; simply type DM instead. They both do the same thing, just one displays it only the ASCII text. Also, MacsBug is not case sensitive, so you don't have to use caps.

I recommend trying most of the locations for the Performa, Powerbook, or any system that is, or closely resembles, yours.

 ROM vs. RAM

I have now found the ROM really starts at address \$40800000 on any non-PCI Mac and \$ffc00000 on a PCI PowerMac. Smaller numbers, like between 0 and \$03000000 (that's 0 to 48 megs), are in RAM. Things that you hit above that space are hardware components, like the memory controller or sound chips, of which the ROM is one. Anything in the RAM or hardware components will shift around (ROM stays the same). The best way to find the ROM is to type dl rombase in Macsbug (that stands for display the data in the variable rombase).

Finding the ASCII Character

I have also found that there is a way to search for ASCII text; handy for locating easter eggs in the ROM. In order to find something, type F 0 FFFFFFF 'allocate globals'. This instruction says "Find 'allocate globals' from hardware location 0 to FFFFFFF". This will search all of your ASCII from '0' up to the point specified. Once MacsBug has found something, take the left-most number, which is the ROM location, and type DMA "Your Given Number" 999 (without quotes). It will go to the desired egg. Press Return if you would like to keep searching. To find anything else, just replace "allocate globals" with another search term.

Take note that the search will not go past six characters and will probably have an error before the given maximum. For this reason, you can not use it for high ROM locations. Another problem is where the name of your search repeats over and over again in a location of the ROM. Once you reach that, it is best not to go on.

Finding the Pictures in the ROM

To find pictures in the ROM, use ROMmie to create a dump file. Then, use CanOpener to read that dump file. You should find at least one picture. The pictures are compressed in JPEG and are usually marked in the ROM with "AppleMark". If you don't have CanOpener, locate "AppleMark" in MacsBug, create a log file (explained below) of the JPEG script, and try to open it with a JPEG viewer. Also, for extra fun, use BBEdit to read the dump file to see what's there.

Creating a Log File

You can also create a log file that will save all of the text in MacsBug. This can be very useful if there is something you want to keep. Just type log name of the file. The name can be anything you want. The file will be put on your desktop and can be opened with SimpleText. It will also continually update until you stop using MacsBug.