

# Macintosh Startup Sequence

Step	Description	Success Indicators	Problem Indicators
1. Power On	The power supply sends voltage to the logic board electrical circuits, initiating the startup sequence.	You should hear the fan and power supply come on.	If absolutely nothing happens, suspect a power problem and check power outlet, cables, and all connections.
2. Hardware Self-Testing	Start Manager continues the startup sequence by initiating tests of CPU, ROM, drives, ports, expansion slots (NuBus, PCI), and finally RAM. The Start Manager verifies that all hardware components on the logic board are working. Hardware is initialized by the invoking of the different “managers” that live in ROM.	The startup chord, or boot tone, indicates this step is successful. Also, the raster (gray desktop) appears on the screen, along with the pointer.	If something happens to interrupt the startup sequence at this point, you hear a series of tones (called “error tones” or “death chimes”). Different Macintosh computers sound different tones to identify various problems stored in their ROMs. A sad Mac icon may also appear.
Steps 1 and 2 involve initializing and testing the computer hardware. The next steps involve the startup disk.			
3. Macintosh Operating System Starts Up	The operating system reserves for itself a portion of the RAM that has just been tested. This area is called the system partition.		
4. Search for a Startup Disk	The Start Manager directs the search for a startup device that contains the System file. After searching the floppy drives, the Start Manager looks inside the Startup Disk control panel (if you’ve indicated one), which is saved in battery powered PRAM. The Start Manager continues its search along the SCSI bus looking for startup devices in order of descending SCSI ID number.	When the Start Manager finds a startup device with a System file you see the happy Mac icon.	If a startup device containing a System file is not found, you see one of two problem indicators: a blinking “?” icon, or a blinking “X” icon. Either icon means that something is preventing the System file from ending up in the system heap.
5. System File Is Found and Opened	When a valid System file is located, the System file, containing ROM patches, is loaded into the system heap. Other managers are initialized.	If the step completes successfully the happy Mac icon is replaced by the “Welcome to Macintosh” box.	If problems, such as a system freeze, a crash (possibly accompanied by a “bomb” icon and error message), or a spontaneous restart, occur during this step, suspect a corrupt System file.

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6. Extensions Are Loaded	Other resources are loaded into the system heap as the Start Manager searches through the System Folder's Extensions folder and Control Panels folder. Finally, any extensions found at the root level of the System Folder are loaded.	If all goes well, icons representing extensions and control panels appear along the bottom of the screen as they are loaded. The icons should appear in this order: extensions in the Extensions folder, in alphabetical order; control panels in the Control Panels folder, in alphabetical order; extensions loose in the System folder, in alphabetical order.	If problems, such as a system freeze, a crash (possibly accompanied by a "bomb" and error message), or a spontaneous restart, occur during this step, suspect conflicting or corrupt extensions or control panels as the cause.
7. Finder Is Launched	The Finder is loaded into its own application heap by the Process Manager.	When this step completes successfully, the desktop environment with all its icons appears on the screen.	An error message either before the desktop appears or while any physically connected disks are mounting may signal a hard disk problem. A "Can't load the Finder!" alert box may signal too many extensions and not enough physical RAM, or software defects. Errors at this point may also indicate trouble with the boot blocks on the startup device.
8. Startup Items Folder Is Searched	The Finder launches any applications or aliases in the Startup Items folder.		