



Software Troubleshooting





Introduction

Use the following information to troubleshoot System software problems with your Macintosh computer. Study the symptoms for those that match your computer's symptoms, and then perform the associated remedy. (For third-party devices or software, follow the manufacturer's recommendations.) If you do not find a match for your computer's symptoms, or you find more than one match, try the remedies in the order listed until you fix the problem.





Before using this document, it would be helpful to review the systematic troubleshooting steps listed in the “[Troubleshooting Apple Products](#)” document.

Note: Text that appears in blue and underlined indicates a link to related material. Click the text to view the information.

Important: To minimize the risk of data loss, be sure to back up your hard drive before attempting any of the following procedures.





Individual File Problems

Symptoms

Problems occur with one file only.

Cause

File is corrupt.

Remedy

Recover data using Norton Utilities or other data recovery tools. Delete corrupt file.





Individual Application Problems

Symptoms

Problems occur with one application only.

Cause

Application is corrupt, incompatible with system software, or missing from hard drive.

Remedy

Update application or reinstall application from original disks.





Extensions Problems

Symptoms

Applications quit unexpectedly or freeze at any time. System crashes. Computer hangs up when idle. Many other symptoms.

Cause

Extension, control panel, or INIT is corrupt or incompatible with system software, application, or another extension.

Note: Extensions are sometimes also called INITs; they are usually in the Extensions Folder or the Control Panels folder within the System Folder. Sometimes they are at the root level of the System Folder itself. As they load into memory at system startup, their icons usually appear on the bottom of





the computer screen.

Remedy

Troubleshoot extensions: Disable all nonstandard extensions. Then enable extensions one at a time until you find the problem. See the following procedures.





Troubleshooting Extensions: System 7.5 & Mac OS 8

To troubleshoot extensions using System 7.5 software, follow these steps:

- 1 Start up the computer holding down the Space bar.
- 2 Release the Space bar when the Extensions Manager control panel opens.
- 3 Go to the Sets menu and select System 7.5 Only, or select Mac OS 8.0 Base from the Selected Set menu. (This procedure deselects all non-standard extensions and control panels, such as virus protection, screen savers, compression utilities, etc.)
- 4 Close the Extensions Manager control panel to continue startup.
- 5 Attempt to recreate the original problem. If you cannot,





continue these steps to determine which of the nonstandard extensions is causing the problem.

- 6 Open the Extensions Manager control panel, turn on one of the disabled extensions by clicking its name, and restart the computer.
- 7 Attempt to recreate the original problem.
- 8 Repeat the previous two steps for each disabled extension until the problem recurs. The last item enabled is probably the cause of the problem.
- 9 Check the problem extension's version number for compatibility. Try reinstalling the extension from original floppy disks, or contact the software vendor.

Note: If you are unable to find the problem extension after testing all nonstandard extensions, perform a clean install of the system software.





Troubleshooting Extensions: Other Systems

To troubleshoot extensions using system software other than System 7.5, follow these steps:

- 1 Start up the computer with the Shift key down, until you see the box with the message “Welcome to Macintosh – Extensions Off.”
- 2 Attempt to recreate the original problem. If you cannot, continue these steps to determine which of the extensions is causing the problem.
- 3 Create a new folder on the desktop and name it “Disabled Extensions.”
- 4 Check the Extensions folder, Control Panels folder, and root level of the System Folder for non-Apple system extensions and control panels (such as virus protection, screen savers, compression utilities, etc.).





- 5 Drag these nonstandard items to the Disabled Extensions folder.
- 6 Close the System Folder, and restart the computer.
- 7 Move one item from the Disabled Extensions folder onto the icon for the closed System Folder and restart the computer.
- 8 Attempt to recreate the original problem.
- 9 Repeat the previous two steps for each item in the Disabled Extensions folder until the problem recurs. The last item returned to the System Folder is probably the cause of the problem.
- 10 Check the problem extension's version number for compatibility. Try reinstalling the extension from original floppy disks, or contact the software vendor.





Note: If you are unable to find the problem extension after testing all nonstandard extensions, perform a clean install of the system software. You'll find clean install instructions in the "[System Clean Install](#)" document.





Desktop File Problems

Symptoms

Finder cannot locate applications that are on the disk drive, or Finder is slow. Application and file icons appear as generic rather than custom icons.

Cause

Drive is overloaded with applications and icons, or applications contain excessive number of file comments.

Note: Because the invisible Desktop file keeps information about each program ever installed on the hard drive, the file can become very large. Rebuilding it reduces its size, and as a result applications start up more quickly.





Remedy

Rebuild Desktop file by holding down the Option and Command keys while starting up the computer. Click on OK when asked if you want to rebuild the desktop.





Hard Drive Software Problems

Symptoms

System doesn't recognize or start up from the hard drive.

Cause

Startup instructions (boot blocks) on the hard drive are damaged or the hard disk driver is damaged.

Remedy

Restart your computer by booting from the Disk Tools floppy disk.





Disk Tools & System Discs

The Disk Tools disk that comes with your system software includes a System Folder and two utilities—Disk First Aid and Drive Setup or Apple HD SC Setup. Because Disk Tools includes a System Folder, you can use the disk to boot up your Macintosh when you have a problem starting from the hard drive.

More recent releases of the Mac OS are distributed on CD-ROM discs that include a System Folder and disc images that you can use to create Disk Tools diskettes.

To start up from Disk Tools, insert the disk into the floppy drive and turn on the Macintosh. The Disk Tools icon should display in the upper right corner, and your hard drive should appear below it.

Note: If you do not see the hard drive icon after you start up





from Disk Tools, the problem may be with the hard drive itself and not with the software.

Disk First Aid

Use Disk First Aid to check your internal hard drive for directory problems, especially after a system crash.

To run Disk First Aid,

- 1 Launch the program.
- 2 Click Drive until the selected drive is your internal hard drive.
- 3 Click Open.
- 4 Click Start.

If Disk First Aid finds a problem it can't repair, you may





want to try third-party disk utilities to correct the problem. However, if you cannot repair the disk, you need to reformat it. Make sure you have a backup of your data before reformatting. If you don't have a backup, you may want to consult with a service provider who specializes in hard drive recovery.





Drive Setup & Apple HD SC Setup

Use Drive Setup or Apple HD SC Setup to test your hard drive, reinstall/update hard disk drivers, or reformat the drive. Use Drive Setup for Power Macintosh and Macintosh computers with a 68040 microprocessor; use Apple HD SC Setup for 68030 or older Macintosh computers.

Note: Drive Setup and Apple HD SC Setup are disk formatting utilities for Apple hard drives. If you have a third-party hard drive in your Macintosh, you get the message that Drive Selection Failed when you launch Drive Setup or Apple HD SC Setup. In this case, use the third-party disk formatting utility that came with your drive, or contact the vendor of the drive.





To use Drive Setup or Apple HD SC Setup on an Apple hard drive,

- 1 Launch the utility.
- 2 Click the Update button to reinstall the hard disk drivers.

You can also use the Test button to test the hard drive and the Initialize button to reformat the disk.

Important: Initializing erases all data on your hard drive. Make sure you have a backup before attempting this procedure.





Peripherals Problems

Symptoms

Problems occur with individual peripherals.

Cause

Driver is out of date or there is a SCSI ID or software conflict.

Remedy

Troubleshoot peripherals (SCSI devices, printers, networking, extra monitors, etc.) by disconnecting all external devices and then testing each one separately.





Troubleshooting Peripherals

If you were experiencing problems that go away when you disconnect your peripherals, follow these guidelines:

SCSI Devices

If you have SCSI devices connected to your Macintosh, make sure that you have followed the vendor's instructions for installation. Specifically, check

- Termination — SCSI chains should be terminated only at the beginning and end of the SCSI chain. Your internal hard disk (if any) is considered the beginning of the chain and has terminating resistors. Check the manuals that came with the other devices in your SCSI chain to determine if they are internally terminated. If the last device is not terminated, it needs an external terminator. Devices in the middle of the chain should not





be terminated; if they are, check the manuals or contact the vendor about disabling the termination.

- Unique SCSI ID — Each device on the SCSI chain requires a unique ID number between 0 and 7. ID 0 is generally used on internal hard disks; ID 7 is reserved for the Macintosh itself. You can therefore assign numbers 1 through 6 to your external devices. Consult the manuals that came with your devices to determine how to set their IDs.
- High-quality SCSI cables — Use high-quality cables, the shorter the better (three feet or less). When chaining more than one external SCSI device, try to use the same brand of cable.
- Startup — External SCSI devices should be powered on, one at a time, before starting up the Macintosh. When shutting down, shut down the Macintosh first. Once the Macintosh has powered down (the screen goes dark or you get a dialog box telling you that it is OK to shut





down), turn off each device (as desired). Never connect or disconnect SCSI cables when any device is turned on.

Network Connections

If you have problems starting up your Macintosh with a network connector attached (such as a LocalTalk connector box), there may be problems on the network or with the connector itself. First, swap out the connector with a known-good one; if problems persist, consult with your network administrator.





Apple Desktop Bus (ADB) Devices

If you are experiencing problems starting up when an ADB device, such as a mouse or tablet, is connected, first make sure the connections are snug. Try another ADB port, if your Macintosh has more than one. Also try using a known-good ADB device. If you are still having problems, contact the device vendor.





Parameter RAM Problems

Symptoms

Serial device (modem, printer) is not responding or computer displays an error message that port is already in use.

Cause

Parameter RAM (PRAM) is corrupt.

Note: When an application crashes, it sometimes executes code that corrupts parameter RAM. Resetting PRAM can often be an important troubleshooting step—particularly when serial devices are connected to the computer or when networking software is in use.





Remedy

Reset PRAM by holding down the Command, Option, P, and R keys during startup but before “Welcome to Macintosh” appears. Hold down the keys until the Macintosh restarts itself twice, then release the keys.

Note: Resetting PRAM changes the computer's system to the factory defaults, so anything that has been customized (like background or highlight color) is reset and AppleTalk will most likely be turned off. After resetting PRAM, be sure to recustomize the control panels and restart the computer.

Note: The procedure for resetting PRAM on a System 6.x computer is different. Hold down the Command, Option, and Shift keys while opening the control panel. Click Yes in the dialog box that appears. Close the control panel, and restart the computer.





Note: The procedure for resetting PRAM on the PowerBook 190/5300, 1400, and 3400 differs as indicated below. Also note that resetting PRAM on this system also resets the power manager.

- The PowerBook must be shut down before resetting PRAM (not just restarted).
- Hold down the Command, Option, P, and R keys during startup but before “Welcome to Macintosh” appears.

Note: Do not attempt to invoke multiple PRAM resets by continuing to hold down these keys. If you have held down these keys too long, the screen will go dark, and the PowerBook won’t start with the power key. If this happens, toggle the reset switch on the back of the PowerBook at least twice to restart.

- You will hear a single chime, the screen will go dark, and the green sleep light will be on solid.





- Press the Restart button and, after a brief pause, the PowerBook will power on.

Note: You may have to press the Restart button more than once. If the PowerBook does not power on, press the Power-on key.

Note: Resetting PRAM on a Macintosh computer that has expansion cards based on PCI technology can yield slightly different results. Holding down the Command, Option, P, R keys during a warm or soft restart resets PRAM, but does not reset non-volatile RAM (NVRAM). NVRAM contains display information. To reset both PRAM and NVRAM, shut down the computer. Then hold down the Command, Option, P, R keys immediately after pressing the power-on key.





Insufficient Memory Problems

Symptoms

Computer displays “insufficient memory” error messages, applications won't run, system performance is degraded.

Cause

Insufficient memory is allocated for the application or RAM cache is set too high.

Note: RAM cache acts as a special RAM buffer between applications and drives and can significantly increase application speed. Memory problems occur when RAM cache is set too high, leaving insufficient system memory for running individual applications.





Remedy

Troubleshoot memory by allocating more memory to the application, closing other applications and windows, turning on virtual memory, switching off RAM cache, or reducing the amount of memory allocated to RAM cache.

Troubleshooting Memory

To troubleshoot memory problems, try the following:

Increase Application Memory

- 1 Select the application icon.
- 2 Choose Get Info from the menu bar.
- 3 When the dialog box appears, increase the application's allocated memory.





Turn On Virtual Memory

- 1 Open the Memory control panel and select On for virtual memory.
- 2 Then restart the system.

Alter RAM Cache

- 1 Open the Memory control panel and change the RAM cache allocation as desired.
- 2 Restart the system.





System Enabler Problems

Symptoms

System doesn't start up from hard drive. When system starts up from Installer or Disk Tools, computer displays the error message "System X does not work on this model; you need a newer version that does."

Cause

The appropriate system enabler is not in the System Folder or the enabler is corrupt.

Note: System enablers are software modules, specific to a given Macintosh model. A system enabler overrides system resources at startup to allow existing system software to support new Macintosh models. This mechanism eliminates the need to release computer-specific system software each





time a new Macintosh model is released. System enablers are located at the top level of the System Folder—not in the Extensions folder.

The System 7.1 and System 7.5 base systems have built-in support for all Macintosh models that shipped before these systems' release dates. All new models shipping after the release of System 7.1 or System 7.5 (but prior to the release of Mac OS 8) include system enabler software specific for that model or family of models. For a guide to system enablers, refer to [System Enabler Chart](#) under the Hardware/Compatibility Charts tab.

Remedy

Locate and replace the necessary system enabler file for the computer.





System Software Problems

Symptoms

System doesn't start up, freezes, or crashes. Many other symptoms.

Cause

System file is corrupt or the computer system and the system software are not compatible.

Remedy

Perform a clean install of the system software. You can find instructions for performing a clean install in the “[System Clean Install](#)” document.





System 7.5 Installation Problems

Not Enough Memory

Problem

When you try to use the Installer, you see a message indicating the Installer is out of memory.

Cause 1

There's not enough memory available to open the Installer. Usually this means that your disk cache or RAM disk is set too high.

Solution 1

Quit all open application programs. Also, open the Memory control panel, set your disk cache to the lowest possible





setting and turn on Virtual Memory.

Cause 2

Your Macintosh has less RAM than is required to use System 7.5, QuickDraw GX, PowerTalk, or a combination of these.

Solution 2

Open the Apple menu and choose About This Macintosh. Look at the number next to “Total Memory,” and follow these guidelines:

- If memory equals at least 8,192K (16,384K on a Power Macintosh), you can install System 7.5 with QuickDraw GX and PowerTalk.
- If memory equals 4,096K (8,192K on a Power Macintosh), you can install only System 7.5. You must add additional RAM before installing QuickDraw GX or PowerTalk.





Not Enough Disk Space

Problem

When you try to use the Installer, you see a message indicating there is not enough disk space available.

Cause

Your computer's hard drive has less than the minimum amount of space required to install the software.

Solution

Make more space available on your hard drive by removing some files from the disk. Make backup copies of the files, if necessary, and then drag them to the Trash.

If you're installing from floppy disks, you can also try starting up your Macintosh using the Install Disk 1 disk.





Using the Installer this way requires less available disk space.

Difficulty Modifying the System File

Problem

When you try to use the Installer, you see a message indicating the System file cannot be modified (or repeated messages asking if it's OK to modify the System file).

Cause 1

You have installed virus-protection software that guards against modification of the System file.

Solution 1

Turn off your virus-protection software by dragging it out of the System Folder and restarting your computer. You can





turn the virus-protection software back on after installation.

If you're installing from floppy disks or a CD, you can also try disabling your extensions by holding down the Shift key while you restart the computer. (If you're installing over a network, you must leave the extensions on in order to connect to the network server.)

Cause 2

Your System Folder may be protected, or the System and Finder files may be locked.

Solution 2

To turn off the System Folder protection, go to the General Controls or Performa control panel (depending on your version of system software). To see if your System file or





Finder file is locked, select the file's icon, then open the file menu and choose Get Info. To unlock the file, check the locked checkbox to remove the 'X.'





Floppy Drive on Your Macintosh Plus, SE, or II Doesn't Recognize the Installation Disks

Problem

When you begin the installation, your Macintosh doesn't recognize the installation disks.

Cause

The floppy disks are 1.4 MB disks. System 7.5 components are not available on 800K disks.

Solution

Install System 7.5 components using a CD-ROM drive or install over a network.





Computer Virus Problems

Symptoms

Unexplained system crashes, corrupted or disappearing files.

Cause

Computer has become infected with a virus after using an infected program (often contracted from shareware found on electronic bulletin boards).

Remedy

Run an antivirus program to eradicate the virus, and practice virus prevention in the future.

To eradicate a virus, boot the computer from a startup disk





that contains an antivirus application and launch the eradication program.

Note: Be sure the virus program is compatible with your system software. Incompatible versions can cause unexpected problems that are difficult to track down.

To prevent future virus infection, use an antivirus application program to screen all disks for known viruses. In addition, make sure all master disks remain locked.





Miscellaneous Problems

Menu Bar Freezes at Startup

Symptoms

At startup, computer displays a menu bar with no text, the bar freezes, and the cursor alternates between a watch and arrow. Computer never completes startup sequence. Booting with extensions off and resetting PRAM do not help.

Cause

System is stuck in a loop because the Finder is having trouble with a window coordinate and is not able to draw the window on the screen.





Remedy

Start up with the Option key held down. (This procedure forces the Finder to close all open windows.)





Font Won't Drag to Trash

Symptom

Font cannot be dragged out of the Font folder.

Cause

The font is corrupt.

Remedy

Move the Font folder from the System Folder to the desktop, drag the damaged font to the trash, and return the Font folder to the System Folder.





Long Startup Time

Symptoms

Computer takes a long time to start up.

Cause

Large number of new fonts have been added to the system.
(Fonts are read in at the time the “Welcome to Macintosh” message displays.)

Remedy

Remove unnecessary fonts.





Helpful Hints

- 1 If your system locks up or crashes, avoid simply turning off the computer, as this procedure can damage open applications. Instead, try using the emergency quit command—**simultaneously press the Command, Option, and Escape keys to quit the active application.** After forcing the application to quit, or if you are unable to force it to quit, be sure to restart your computer. If you are unable to use the Restart command, **simultaneously press Command, Control, and the Power On keys.** (Or if these commands don't work, use the programmer's switch to restart.)
- 2 To prevent potential conflicts when installing software, first turn off all system extensions. Also temporarily turn off any virus detection software running in the background.





- 3 If printing problems occur, make sure the relevant applications are left active until the PrintMonitor utility is no longer visible in the applications menu.
- 4 Check the computer's hard drive with a utility program like Norton Utilities. If necessary, optimize or defragment the hard drive. (First make a backup.)
- 5 To improve system performance,
 - Turn off virtual memory in the Memory control panel.
 - Turn off "calculate folder size" in the Views control panel.
 - Turn off file sharing.
 - Rebuild the desktop.
 - For computers with a 68040 processor, check that the 040 cache is on in the Cache Switch control panel.

