
Macintosh® FAQ

Frequently Asked Questions
And Answers

by David Lerner



THE OLD RELIABLE MAC SHOP

 Apple Specialist

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COMMAND KEY COMBINATIONS

I got the Mac because I like menus and hate using command keys. But some Mac actions require command keys. What are the common ones?

Commands for OS 8.6, OS 9.x and OS X:

Startup Manager (most recent Macs)

Option while booting, allows you to choose whether to boot from OS 9.x or OS X or CD

Boot from CD-ROM (most recent Macs)

"C" while booting

Boot in FireWire Target Mode (some Macs)

"T" while booting

Ignore internal hard disk drive

⌘-option-shift-delete while booting

(some Macs ignores selected startup device)

Zap PRAM—System 7 and up

⌘-option-P-R while booting

Force Quit current application

⌘-option-escape

(In OS 9 and down may force you to reboot)

Commands for OS 9.x and below:

Disable extensions at startup

Shift while booting

Open Extensions Manager at startup

Spacebar while booting

Disable startup items

Shift just before Finder loads

Close all open windows (can fix weirdness)

Option while Finder loads

Rebuild Desktop

⌘-option (but read the question about this)

Zap PRAM—System 6

⌘-option-shift while opening Control panel

Reset Applevision Display (v1.52 or later)

⌘-option-A-V while booting

Software reboot (lose all unsaved work)

⌘-control-power on

(to restart after a crash on some Macs)

Tekserve, New York's Old Reliable Mac Shop

What's Tekserve?

We are electronic engineers who used Macs to design products such as robust public access audio/video equipment, industrial controls and product simulators. When our Macs started breaking, we were shocked by the repair costs, so we learned how to fix them.

Tekserve focuses on Macintosh service, repair and upgrade, both in and out of warranty. We always give free estimates. Although we have a special emphasis on fast turnaround PowerBook repair and upgrade (frequently while you wait), we work on all Macintosh models. We have a high success rate and reasonable prices for data recovery, and we only charge if we succeed. We stock memory, drives and parts for nearly all Macs, and we are also happy to install upgrades that you buy elsewhere.

Although we started out offering service only, we have slowly expanded sales, and have become one of the larger Macintosh dealers in New York. We stock the full Apple product line and hundreds of related products, usually at mail order prices, but often with same day configuration and delivery.

In early 2001, the folks from Smart Machines joined us, bringing along their knowledge and skill in configuring more complex video, graphics, networking and storage solutions. Along the way, we have added authorizations for Sony Broadcast & Professional products, Creo-Scitex scanners, Pinnacle Cinewave and other important Macintosh related items.

We are open 9 to 6 weekdays, Tuesday evening until 8, and 10 to 4 on Saturdays, with free validated parking (at 101 West 23rd Street or at 170 West 23rd Street). No appointment is needed, just come on by.

Isn't one service place as good as another?

Every service shop is only as good as their last repair. What we think sets Tekserve apart is that service is our business—our prime focus is on repair, upgrade and custom configuration. We think that's reflected in our shop—no receptionist, no hidden service areas, just a bunch of well-equipped workbenches and technicians (and a huge inventory of parts).

We do sell lots of Macs and accessories too, and in fact we can frequently configure a system (or ten systems) and deliver the same day. Our approach to sales is based on service; not just trying to move boxes, but actually meeting the customer's needs. For instance, we offer turnkey Final Cut Pro video editing systems with everything you need to plug in and start editing. For corporate purchasers we can configure and ship computers to multiple locations, with your standard software install

already loaded and asset tags in place.

Our motto, copied from an old Walker Evans photo from the Library of Congress that we made into a postcard, is "Honest Weights, Square Dealings." And we mean it. If you are ever dissatisfied in any way with our service, please let us know and we'll try to make it right.

Do you really fix things, or just swap parts?

We've been humbled on this one. We started with the premise that we would always fix the broken part, not just swap it. When a floppy drive was a little out of alignment, we aligned it. If a capacitor was bad, we replaced it. But too many things came back with further problems and what seemed like a good policy backfired. People want their repair right now, but careful repair and testing takes time. So now we insist on swapping a

bad part for a new or refurbished one.

So, yes, we actually fix things, but to complete the service quickly we swap parts. We think it's the best of both worlds, because it allows us to stand behind our work with a one-year warranty, and it reduces the need for people to use that warranty. (Note: our Apple warranty and AppleCare repairs are always performed with Apple Service Parts and carry a 90-day Apple warranty. Flat panel LCD repairs and any repairs paid for by third parties also carry a 90-day warranty.)

Don't most other dealers swap brand new parts?

No. Service swap parts are guaranteed (although usually only for three months) to work the same as new ones, but Apple prohibits dealers from claiming that service parts are new. The parts are usually repaired and refurbished at Apple's depot.

Do you provide a messenger service to pick-up and deliver stuff?

We prefer that you use your own messenger service, but in many cases we can arrange to pick up and deliver (for an additional fee). If you send us stuff by messenger, please attach a note telling us who, what, when where, and why. You'd be surprised at the mystery parcels we receive. We also deliver new systems, cables and accessories by messenger, UPS and Fedex.

Do you offer corporate accounts?

Our low cost structure is geared toward payment by cash, check or credit card when the service or purchase is completed. We are happy to accept corporate credit cards, including American Express & Diners Club. If your company's structure requires that you be billed, ask to talk to David and we'll send you a credit application. We do accept written purchase orders from Fortune 1000 companies, governmental entities and universities.

Do you offer financing on new computers?

Yes, for individuals purchasing up to \$10,000 of equipment we offer the Apple Instant Loan program. For corporate purchases from \$2,500 up to millions of dollars, we offer leasing plans from Apple Commercial Credit and others. All financing is subject to credit approval (and lots of other fine print).

HOW TO AVOID COMING TO TEKSERVE IN A PANIC

- 1 Save multiple copies of critical files on multiple disks, cartridges or tapes. In short, backup constantly and religiously, especially when you are under deadline pressure. Save early and often. (An iDisk on Apple's web site is one place to stick an extra off-site backup of a few important files.)
- 2 Don't save the only version of an important file on a floppy, Zip or Jaz disk (really you should never have only one copy of an important file). Make multiple copies. Don't erase your last backup to make a new one—you may be backing up a corrupted file and will need the previous backup.
- 3 At least one of your recent backups should be in a different location (i.e. off-site).
- 4 Install and use the latest version of your preferred anti-viral software. You should be sure to install the monthly anti-virus updates.
- 5 Run the latest Apple Disk First Aid on your drives once a month or so (always backup first).
- 6 If you own a current version of Norton Utilities (6.02 was current as of June 2001), enable FileSaver. (Norton 4 and above only work on Power PCs, use Norton 3.5.2 on 68XXX Macs.) If you prefer TechTool, enable its similar protection.
- 7 Own the software you use, read the manuals, keep the original program CDs in a safe place.
- 8 Minimize the number of gewgaws you add

to your System, and never add two gewgaws with overlapping functions. (e.g. don't use SuperClock and the Apple menu bar clock, don't use Trashback and Undelete). "Screen savers" are mostly entertainment programs. To save your screen, dim the monitor or turn it off. All recent monitors work with Apple's Energy Saver control panel to downshift to a dark low-power mode after a certain idle time. Some "screen savers" will interfere with that.

BEING PREPARED

Spend a little time getting ready to cope with a problem before you have one. All recent Macs come with a bootable CD-ROM with System software—keep it handy. If you own a copy of Norton Disk Doctor or DiskWarrior, keep it up to date and be sure that it will boot your CPU. It's also helpful in many recovery situations to have an external storage device like a hard drive, Jaz or Zip.

My hard drive has trouble getting going, but it always starts after a few tries. Should I bother backing it up?

No, your data is of no importance and you can probably recreate it within a few months. After all, you have lots of paper printouts to recopy from and you're a fast typist. Sorry to be facetious, but we've had people come into Tekserve for urgent data recoveries with this story! If your computer or hard drive is doing anything unusual—squeaking, chirping, having trouble getting going, read/write errors, missing or damaged files—take it as a reminder to do a complete backup. Please!

CRISIS SITUATIONS

I turned on my computer and just see a little blinking picture of a floppy disk or a question mark.

- 1 Try starting from the System Install CD-ROM (or bootable floppy disk) that came

with your computer. If the CD or disk is ejected, you may have a stuck button on your mouse or trackball (or it isn't really a startup disk and is lacking the software needed to boot your computer). With the Mac turned off, unplug the mouse or trackball and see if it now starts okay from the CD or your hard disk. If so, the mouse or trackball is the culprit.

- 2 If it starts up okay from the CD, and you see your hard disk icon below the CD icon, the System on your hard drive may have become damaged. If so, backup your important files, run Disk First Aid to repair any directory damage, and then reinstall the System. If that doesn't solve the problem, try a "clean System install" described later in this FAQ.
- 3 If your hard disk drive icon doesn't show up under the CD or floppy icon, you can try running Disk First Aid. Warning: In some instances repair programs will make things worse. This is why we say to always backup everything; so that, if a repair fails, you have another recourse. If you have any doubts or cannot afford to lose the files on your hard drive, you may want to bring your computer to Tekserve before running any repair programs. We have ways of doing repairs without taking chances. If Disk First Aid sees your hard drive, it may be able to fix problems in the directory. If it finds things to fix, run it again to be sure that everything is really fixed. If it keeps saying it fixed the same thing each time you run it, it's lying to you.
- 4 If you own Norton Utilities or Tech Tool Pro or DiskWarrior, you can try them now (but please read the next question first).
- 5 If this didn't solve your problem, call us.

Can I make things worse by doing repairs with Norton Disk Doctor, Tech Tool, DiskWarrior, or Disk First Aid?

Unfortunately, yes. In most instances these programs are good tools that help solve

problems. But “repairing” certain problems can leave you worse off than before—in some cases, even take a disk from which a professional could easily recover data to a complete loss situation. Basically, when your drive’s directory is scrambled, anything that writes to the disk has the potential to do harm. Running Norton Disk Doctor or Tech Tool Pro actually writes to the directory that it’s fixing, so occasionally it does damage. However, running a data recovery utility such as Data Rescue, Norton’s Volume Recover or Unerase should be fine, if you copy the recovered files to a different drive. If you recover the files onto the damaged drive, you will be overwriting other data you wish to recover, compounding existing directory damage, and making things worse. The latest Norton Utilities offers to save an “undo” file so that you can go backwards, but I’ve had Norton crash in the middle of a repair, and the Undo file itself was corrupted or incomplete.

You can also use DiskWarrior to recreate a disk directory, but don’t rush to write the new directory to the disk. Instead, mount the volume using the new directory and backup your files to another drive. Check the files thoroughly before you write the new directory or reformat the old drive.

If you are well backed up you can use any repair utility with confidence. If you are not backed up and your data is essential to you, consider getting professional help. We’re not trying to scare you into always hiring us—we’re trying to scare you into always making lots of backups!

Word just crashed, and I hadn’t saved, can I get back my work?

Before you restart the computer, search for “Word Temp” or “Word Work” files and move them to the desktop. They may contain some saved work. Also, Chowhound Jim Leff says: “Search & Rescue is a program that floats under most Mac-users’ radar, but it’s

absolutely invaluable. It recovers UNSAVED text. If a word processor, email app, etc, crashes and you’d neglected to save the text you were working on, Search & Rescue recovers all your work. Rarely fails, works like magic for any application, even recovers unsaved text after a restart(!). It has saved my ass many, many, many times. Just \$15 shareware. I’m a fan and beta tester (and the author quotes me on his site), but I have no financial interest and don’t know the guy personally.” <http://www.kagi.com/tjriley>

My keyboard doesn’t work, and I get little beeps when I press a key.

You have probably accidentally enabled Easy Access, a special Apple control panel to help handicapped people use the Mac keyboard. Open the Easy Access control panel and turn off each of its features.

I turn on my computer and hear a series of musical notes (or what sounds like a car crash or broken glass), or I get a picture of an unhappy Mac on the screen with some numbers under it.

This can happen if you have certain older CD-ROMs in your drive when you boot, so first try removing any CD-ROMs. If that doesn’t cure it, read on:

Every time you start your Mac it does some diagnostics on itself. With these symptoms, the Mac is telling you that those diagnostics failed.

- 1 Turn everything off, and disconnect any external SCSI, USB and FireWire devices. These are things such as scanners, hard drives, Zip, Jaz and so on. Now that your external stuff is disconnected, start the Mac and see if the problem was caused by the external devices. If so, reconnect them one at a time to see when the problem returns (with SCSI you must turn everything off before connecting or disconnecting devices).
- 2 Zap the PRAM. This is special parameter

memory that stores crucial settings for your Mac and can become corrupted. Zapping it means resetting it to the original defaults. On newer Macs, hold down **⌘-option-P-R** while turning on the Mac. Keep holding those keys down until you hear the startup bong two or three times. (On the PowerBook 190, 1400, 2300, 2400, 3400 and 5300, when you have successfully zapped the PRAM the screen may be blank and the green sleep LED may be steadily lit, and you will need to then press the reset button on the rear of the computer.) If this didn't help or didn't work, continue with the next step.

- 3 Restart holding down **⌘-shift-option-delete**. You have to hold down all four buttons together, and then, while keeping those buttons down, turn on the computer. This tells the computer to ignore the normal startup drive. If instead of getting the sad tones or sad Mac you now get a blinking picture of a disk or folder, then your disk driver (or the System file) is probably corrupted. The disk driver is special information on your hard drive that tells the Mac how to talk to the hard drive.

We're getting into dangerous territory if you aren't backed up. If you are backed up, or not concerned about anything on your hard drive, try restarting from a System CD-ROM or Disk Tools floppy while holding down those four buttons. If that works, run Apple Drive Setup and select "Update driver" from the Functions selection. Warning: Don't click "Initialize"—that will wipe out everything on your drive. If you have used a driver-level compression program such as eDisk, Times Two or Stacker, even updating the driver can wipe out your data.

- 4 If you recently added RAM to the computer, you may want to try removing it (if you are comfortable doing this and have the right anti-static equipment).
- 5 If you still get the sad Mac tones, your

problems are more serious—either memory, the motherboard, the hard drive, or an add-on such as an accelerator, nuBus or PCI card. At this point if you still have trouble, you should probably bring the computer in for service.

My mouse or trackball is acting weird.

On older mechanical mice, shut down the computer, remove the bottom cover of the mouse (or the twist ring on the trackball), clean the rollers with a Q-tip and just a drop of alcohol. That black ring around the center of the rollers is not a special friction coating—it's congealed dirt and junk.

If you have trouble with the trackpad on recent PowerBooks, check the Trackpad control panel. At the bottom there are options to use the trackpad for clicking and dragging—try deselecting these options. You may also want to try a slower tracking speed.

My trackpad is jumping around.

Brushing a second finger against the trackpad can cause this, but trackpads respond to the capacitance of your finger and are affected by moisture. Try washing and drying your hands. Apple has a "Trackpad Climate Control" extension that may help.

My mouse and keyboard stopped working.

Try unplugging and replugging the mouse. If that doesn't help, turn off the computer, and try plugging only the mouse into the back of the computer and restarting. If it works, your computer itself is okay, but there is probably a bad connection in the jack in your keyboard. Try a replacement keyboard.

Note: Recent Macs and iMacs have USB, and it is fine to plug in USB devices (and FireWire devices) when the computer is on. USB devices have square or rectangular plugs and sockets. Older Macs use ADB ports with a round four-pin plug and socket, and those can be damaged by hot-plugging devices.

A disk is stuck in my Mac.

Don't pull it out with pliers, that may destroy the drive. Try restarting the computer while holding down the mouse button. If that doesn't work, try ejecting the disk by pushing a straightened paper clip into the little hole alongside the drive. If that doesn't work, the Mac probably needs to be disassembled to get the disk out, and the drive might even be damaged. If your Mac has a slot-loading CD or DVD drive, you should only insert regular round 5.25" discs. Minidisks and novelty CDs (like business card shaped discs) will get stuck (and may even void your warranty).

My Mac froze up. Now what?

First check for simple stuff, like the mouse connector came loose from the keyboard.

If you have unsaved work, there is a very slim chance of rescuing it. ⌘-option-escape will let you quit the current program (the one that froze) and you might be able to get to any other programs and save your work in them before quitting and restarting. But you will lose what you've done in the current program. When you restart, move the "rescued items" folder out of the trash (if there is one). It might contain temporary files used by your crashed program, and your unsaved work might be partly there.

If the above didn't work, you've probably lost all your work since you last saved. If that's okay with you, restart with the power switch or the reset button or press these three buttons together: ⌘-control-Power-on (on Macs without a reset button). After restarting you can try to recover lost text with the shareware Search & Rescue, mentioned earlier.

My computer starts normally, but then the cursor freezes in the upper left corner of the screen when the Finder loads.

This can be a bad mouse connection (see earlier question), or a software problem (try starting from the CD that came with the

Mac), or a problem with a SCSI or USB device (with the power off, disconnect all external SCSI and USB devices). Try another mouse.

I just spilled beer/tea/cough syrup on my keyboard (well, my cat threw up on it).

Shut down, unplug the keyboard from the computer, and turn it upside down. Wait a day or few for it to dry. It may all be okay now. If not, bring it for service. (Former Byte columnist Jerry Pournelle says just take it in the shower with you and rinse it thoroughly and then dry it for a few days, but he also believes in Star Wars missile defenses.) If it's a PowerBook, remove the battery and the power cord and bring it in for service immediately. Don't turn it on! The internal backup battery can cause electrolytic corrosion and lead to an expensive motherboard replacement.

Every five to thirty minutes my computer slows down to a crawl and there is a lot of disk activity. What's wrong?

It could be the Autostart worm virus. See "Viruses" later in this FAQ. With Mac OS 8.6 it could also be a problem with DHCP (involved in TCP/IP networking and used to access some networks or DSL/cable modems), updating to Mac OS 9.0 or higher should solve the problem.

My computer takes several minutes to boot.

Your computer may be looking for a server that is no longer available. Try moving the "Servers" folder from your System Folder to the desktop and restarting. If that fixed it, you can throw away the Servers folder, if not, put it back.

BOMBS AND CRASHES**My computer bombs whenever I launch my MajorSoft WordMangler program.**

If your problems only occur with one particular program or action, and are fairly


repeatable, they should be easy to fix.

- 1 Try giving the program more memory. Be sure the program is not running, then, click once on the icon of the program and press -I (Get Info). On newer systems then choose "Show: Memory" from the pop-up list. Increase the "preferred" memory size by 25-100% and try the program again.
- 2 Check the vendor's web site or versiontracker.com for updates or patches to the program, and try installing them. You may have a known problem that has already been solved.
- 3 Try starting without extensions. The vendor will tell you to do this, so try it first. Hold down the shift key while the Mac starts up. It should say "Welcome to Macintosh (or Mac OS), Extensions disabled." If the problem is gone, see the next major question below.
- 4 Quit the program, and then delete any preferences files used by the program (if they are complicated preferences, copy them to another folder or a disk in case they prove not to be the problem and you want to restore them). The preferences file is usually in the Preferences folder in the System Folder, but it could be somewhere else, such as in the folder with the program (or in the "Clariss" or "Aldus" or "your software brand name here" folder). Then reinstall the program from the original disk or CD and run any updaters.
- 5 Some problems can be traced to corrupted, damaged or compressed fonts. Try removing the Fonts Folder from your System Folder (if you are using Suitcase, ATM Deluxe or MasterJuggler, also use it to close all your fonts), restart the computer, and see if the problem is solved. If so, you need to work your way through your fonts and see which one is the culprit. A corrupted ATM cache file or ATM database can also cause grief, you can safely delete them.
- 6 If it's Office 98 (Word, Excel or PowerPoint) that's giving grief or complaining about DLLs or Visual Basic, delete the "Office Registration Cache" and "PPC Registration Database" preference files.
- 7 If these steps don't solve the problem, contact the company that publishes the program. Many vendors offer good free tech support, and sometimes you will have a standard problem that they can quickly identify and tell you how to fix. Many vendors also have support forums online. This is especially useful for those vendors that charge for telephone tech support, as their online support is still free. You also get the benefit of the input from other users, who may have encountered the same problems and have workarounds you can use until the vendor fixes the bug. Some companies also have decent support on their web site.

All my icons are generic with folded corners. Where are all the regular icons?

Your hidden "Desktop" files are damaged or corrupted. See the next question.

I double-clicked on a file and the computer said, "the application that created it cannot be found." Will rebuilding the desktop help?

The invisible "Desktop" file(s) keep track of the icon for each file and which applications are used to open that file. If the desktop file gets corrupted, these problems occur, and the answer is to rebuild the desktop. Restart your computer and press -option. When you see a message saying "Are you sure you want to rebuild the desktop," click yes.

Of course, some files aren't meant to be opened directly and should give that error message. And sometimes you really don't have the required application. The shareware GraphicConverter program is a gem—it can open, edit, print, and save graphics files in any of more than a dozen formats and only costs

\$35. MacLink Plus is the top general-purpose translator program and supports many text, word-processing, spreadsheet and database file types.

My computer bombs when I turn it on.

Many bombs can be traced to extensions and control panels that modify system behavior (and sometimes each other's behavior). Under System 7 and up, holding down the shift key while booting will disable all of them. If that solves the problem, use Extensions Manager to disable specific control panels and extensions. The usual suggestion is to try turning off half your extensions, and if the problem doesn't go away try the other half. When you find the half that cause the problem, disable half of those, and so on until you isolate the problem.

There are commercial programs like Conflict Catcher that automate extension troubleshooting.

If disabling extensions doesn't solve the problem, it may be a hardware or System problem. Try booting from a System install or Restore CD. If that solves things, try a clean System install.

THE SYSTEM (OS 9.X AND BELOW)

What's the big deal about the System Folder?

System software is what makes your Mac smile when you turn it on, allows it to run, read and write hard drives, copy files, run other programs, and all sorts of other goodies. The Finder is part of the System software and is usually the program that runs first when the computer starts up. The System software lives in a folder that is usually named "System Folder" and which contains the critical files "System" and "Finder" as well as many related files. In System 7 and above, these related files are mostly in folders in the System Folder, such as "Extensions," "Control Panels," "Preferences" and in 7.1 & up, "Fonts."

If everyone just used the System Folder the way it comes from Apple, there would be many fewer crashes, bombs and conflicts. But many programs add files or even folders to the System Folder, and most of us have added various system enhancements (anti-virus programs, security programs, font management programs such as Suitcase, FileSaver and so on).

When your system is operating flawlessly, make a backup of your System Folder. It's easiest to do this with a backup program like Retrospect. Or you can boot from a CD or another drive, and then copy your System Folder to another disk or removable media, or use Apple Disk Copy to save a "disk image" of the entire System Folder. Then if you later have trouble, you can restore that backup and get back to work. If you do this, save the messed up System Folder by renaming it and throwing away its Finder, so you can later reclaim any items you may have added since your backup.

What's a clean System install and how do I do it?

As a System Folder grows top heavy with extra stuff, your System can become less stable. Sometimes parts of the System files get damaged or corrupted and you don't know exactly which ones are damaged. Many times Apple, software vendors, or Tekserve will insist that any problem you are having with your computer is due to all the junk in your System Folder, and will suggest that you do "a clean System install." That means making a brand new System Folder just like Apple would put on a new computer. This new folder will be lacking all your added fonts, custom doodads and preferences, including your Internet access setup, so after you solve your problem you'll need to "dirty" the new System Folder again and hope that your problem stays gone (which is why some people first try a much simpler dirty install, which basically means deleting only your Finder, System and

Finder Prefs file and then running the System installer).

With Recent G3s and G4s, you can boot from your Apple System Restore CD and either replace just the System Folder, “restore in place” which will leave most of your Applications and user files and documents alone, or restore the drive to the condition it shipped from Apple, erasing all of your files and everything. (Multi-disc installers can only restore the entire drive.) Note that as with a clean install, all of these options will delete your Internet access settings and some or all of your program and other preferences.

For System 7.6 and up, use the “options” button in the main installer window to bring up the choice of a clean install. Your old System Folder will be renamed “Previous System Folder” and the new one will be called just “System Folder.” (For Systems below 7.6, download an older version of this FAQ from Tekserve.com.)

Now restart to see if your problem is solved: If everything is okay, you can start dirtying your new System with all your old fonts, preferences, control panels and extensions. It is always better to reinstall stuff like fax software from the original disks rather than using the old versions. However, you will want to move over any fax folders and preferences, which contain your address books, old faxes and so on. You’ll also want to move folders such as “Claris” and “Aldus” that various programs may have placed in your System Folder.

We suggest doing this very slowly—move a few items, restart and see if things are okay, move a few more, and so on. This is a great time to do housecleaning—anything you don’t need or don’t recognize can be moved into a holding folder until you are sure you don’t need it. The point is that anything that was freshly installed by the System install should not be replaced—only move unique stuff that you know you need from the old System Folder to the new one. Remember that

less is more. More speed, more reliability, more peace of mind.

You can automate the clean install process with Conflict Catcher if you like.

What System should I use on older Macs?

If you have a PowerPC with a 233 MHz or faster processor and at least 64 MBs of RAM, we suggest that you use Mac OS 8.6 (with less RAM or a slower processor, use System 8.1). With any G3 or any G4, use Mac OS 9.1 or OS X. Both of these Systems are more stable and reliable than previous systems. Remember, this is current as of June 2001.

On older Macs, if your system is stable and happy and you don’t need any new features, stick with it.

I have an old 68040 Mac—should I upgrade to System 7.6 or OS 8?

Newer system software will use more RAM and will operate more slowly, but may enable you to use newer programs. It’s your call. Note that 8.1 is the last System release that supports 68040 (non-Power PC) Macs.

Any problems upgrading to OS 9.x?

Mac OS 9 does have a few compatibility issues, but the good news is that most applications that work with Mac OS 9 will work with Mac OS X as well (not true for extensions and some control panels, which may not be compatible with OS X). Note that working with OS X doesn’t mean optimized for OS X—you will have lots of opportunity to buy updates.

OS 9 does require an update to Adobe Type Manager (in June 2001 ATM 4.62 was available free on Adobe’s web site). You will also need to update software for Global Village PC Card modems, and updates for Virex and Norton Utilities are required. Other things that need updates are Suitcase, Visioneer PaperPort, Office, Word and Excel 98, many HP inkjets, Tech Tool Pro, Conflict Catcher, SoftRaid, and AppleWorks. Sadly,

LaserWriters with built-in PostScript fax modems are no longer supported.

SYSTEM OS X

How come this FAQ is all about OS 9, when OS X has been released?

As of this writing, the vast majority of Macintosh users are still using OS 9 and previous versions of the operating system. Apple just released OS X in March 2001, and started including it on new CPUs in May 2001, but with OS 9.1 set as the default startup system. Over the next year, as major applications are rewritten to take advantage of OS X, we expect the majority of G3 & G4 users to switch to OS X, but it will be a long slow process. We will keep our FAQ up to date.

What's different about OS X?

OS X offers improved stability and reliability (but frankly, OS 9.1 is pretty stable too). Behind the scenes it is a more “modern” operating system with some of the buzzwords (features) people have asked for, like protected memory and preemptive multitasking. Among other things, that means that if one program should crash, you won't have to restart the computer. OS X also has numerous changes to the user interface. As of June 2001, most popular applications haven't been rewritten to take advantage of OS X, although they nearly all run fine in OS X's “Classic” environment.

Should I upgrade to OS X today?

If you are a cautious person and your computer is doing everything you need it to, probably not. But if you enjoy new things and like the new interface, or just want to be “au courant”, then go for it. However, if you are doing specific demanding tasks with your computer, like intense audio or video editing, it's not quite time yet to switch to OS X (as of June 2001). Just before a system upgrade is a perfect time to backup your whole computer,

or at least your important files. And don't forget, any major system upgrade will require some time to make everything right and to get comfortable with new interfaces and commands, so don't upgrade in the middle of a big project or if you are already stressed out. Nonetheless, over the next year we do expect to see compelling reasons to upgrade.

If you are buying a new Macintosh, and are using it for basic home or office productivity, Internet browsing, email and the like, we do suggest going straight to OS X—there is no reason to learn OS 9 at this point.

Can I switch between OS 9 and OS X?

Yes, use the Startup Disk control panel (works even if both OS are on the same disk).

PRINTERS

I chose my printer in the Chooser, and it forgot my choice.

The Chooser is counterintuitive, because you can use it to make several simultaneous choices (printer, network drives, etc.). As a result, it doesn't display what's chosen. Once you select a specific printer, it will remain chosen until you select a different printer (unless your backup battery is dead, see below). To confirm what printer is chosen, select “Page Setup” from the file menu—at the top of the window that's displayed you'll see the name of your printer.

Early Epson Stylus printer software can cause the printer choice to be forgotten—update to a more recent version.

To choose a different Laser printer (or other AppleTalk printer) click on the appropriate driver icon on the left side (such as “LaserWriter” or “LaserWriter 8”). Sometimes you have to scroll down to see the correct icon. The specific LaserWriter you have chosen will show up on the right side highlighted. If it's not highlighted, you need to click on the printer name on the right side to choose it. If you are using LaserWriter 8 or

newer, there will be a little printer icon in front of the printer's name to show that you have already "Setup" for that printer. If not, after highlighting the printer click the "Setup" or "Create" button to select options for that printer. Then close the Chooser with the close box in the upper left corner.

If you have an HP LaserJet or other non-Apple networked laser printer, you will want to pick "LaserWriter 8" on the left side and then highlight your printer on the right side.

When I try to print to my Epson printer, I get an error message that the printer is not responding. What's wrong?

When you turn on your Epson inkjet printer, it performs a self-test before it enters normal operation mode. If one of the components fails the startup test, the printer enters an error mode in which it will not respond to any commands from the computer. Normally it will indicate the error with a flashing light or error light. The first things to check are that the paper is properly seated in the sheet feeder, and that there is ink in the ink cartridge. When the printer is ready you should see a steady green light.

I just upgraded to the latest OS and I can't find my printer's icon in the Chooser. Where did the driver go?

If you own a LaserWriter Select 300, a Personal LaserWriter 300, or a Personal LaserWriter LS, don't sweat. Apple doesn't include the driver for these models with the OS because they have decided not to provide support for these machines. In other words, these printers do work with OS 8.6 and 9, but Apple doesn't guarantee that future versions of the OS will be compatible with the driver. You may download the driver for this printer from Apple's website. The driver is called "LaserWriter LS/300." But to use these printers with a new Mac that lacks a serial port, read the USB question that follows.

If you own a LaserWriter Select 310, a

LaserWriter II SC, or a Personal LaserWriter SC, the driver for your printer is completely incompatible with recent Mac OS. You must either downgrade your OS or replace the printer. The SC models are incompatible with anything beyond Mac OS 7.6.1. The Select 310 is incompatible with anything beyond OS 8.1.

If you have a StyleWriter 2200 or 2400, use the StyleWriter 2500 icon. If you have a StyleWriter, StyleWriter II or 1200, use the StyleWriter 1500 icon.

For most PostScript USB printers, such as the LexMark E310 or E312, you must install the manufacturer supplied "Printer Description File" and then use Apple's Desktop Printer Utility to create a desktop printer icon. Then you will be able to choose that printer in the Chooser (or simply highlight the icon on the desktop and select "Set Default Printer" from the Printer menu).

CONNECTING OLD PRINTERS AND OTHER DEVICES TO NEW MACS

How do I connect my old Epson printer to my USB Mac?

The \$39 Epson USB adapter supports the Stylus Color 440, 600, 640, 800, 850, 1520, Photo 700 and Stylus Color Photo EX.

How do I connect my StyleWriter I, II, 1200, 4100 or 4500 or LaserWriter Select 300 to my USB Mac?

Keyspan's USA-28X Twin Serial Adapter will connect these printers to any USB Macintosh. The Keyspan adapter also works with most HP DeskJets that have a serial connector. The adapter has two serial ports and may be used to connect a PalmPilot, a modem, or a digital camera at the same time, although it doesn't support most other serial devices. For an exact list of supported devices, go to Keyspan's web site: www.keyspan.com.

If you have older networked Macs, you can also share these printers for free. See "How do I share my printer?" later in this section.

How do I connect any serial or LocalTalk or MIDI device, or my serial LaserWriter LS, LW 300, Select 300 to a USB Mac?

Griffin's iPort can be installed inside a 233 MHz iMac (not compatible with 266 or faster iMacs). The iPort offers one serial port which will work with nearly all Mac serial devices and LocalTalk devices. The iPort must be installed inside the iMac by a technician.

Griffin's gPort or GeeThree's Stealth can be installed inside a Blue and White G3 or Graphite G4 Minitor. The gPort or Stealth offers one normal serial port, which will work with nearly all Mac serial devices and LocalTalk devices. It must be installed in the internal modem slot by a technician. Unfortunately, if the G3 or G4 has an internal modem it has to be removed (but you can use an external USB modem instead).

If you have older networked Macs, you can also share these printers for free. See "How do I share my printer?" later in this section.

How do I connect my Color StyleWriter 1500, 2200, 2400 or 2500 to my USB Mac?

The Keyspan USA-28X Twin Serial Adapter can be used to connect these to a single computer. They may also be networked with Farallon's EtherMac iPrint SL to any Mac's Ethernet port. Once the printer is connected to the iPrint, it uses the same software driver that it used before and is accessible by all Macs on the same Ethernet network.

If you have older networked Macs, you can also share these printers for free. See "How do I share my printer?" later in this section.

How do I connect my LocalTalk printer to my USB Mac? Printers like the LaserWriter IINT, NTX, F, Personal LaserWriter NT, NTR, 320, LaserWriter Pro 600, 4/600 PS, Select 360, Color StyleWriter 6500 or an HP LaserJet with "M" or "MP" in its name?

To connect these printers to a new Mac, you must use an Ethernet to LocalTalk Bridge:

1. The AsanteTalk Ethernet to LocalTalk

Bridge includes everything you need to connect a LocalTalk printer to a new Mac. It works with existing drivers.

2. If the printer is already connected to a LocalTalk network, you can use Farallon's iPrint LT. The iPrint LT is similar to the AsanteTalk, except that it has a PhoneNet jack instead of a LocalTalk Din 8 jack. If your existing LocalTalk network has more than eight LocalTalk devices on it, you will need a much more expensive bridge. It might be time to upgrade to Ethernet.

How Do I connect my PC parallel port printer to a USB Mac?

Most PC printers can be connected to a USB Mac, using Infowave's "PowerPrint USB-to-Parallel" adapter and software. One exception is the HP DeskJet 700 series.

How do I connect my LaserWriter IISC or Personal LaserWriter SC to a USB Mac?

Sorry, you need to buy a new printer.

How do I share my StyleWriter, Personal LaserWriter LS, 300 or Select 300 printer?

Printer Sharing is an inexpensive way to connect an older printer to a network. The disadvantage is that the printer must be permanently connected to another Mac with a serial port, the serial Mac must be networked (via Ethernet) to the new Mac(s), and the serial Mac must be turned on all the time. Also, the serial Mac will slow down whatever else it is doing while it is printing a job.

1. Connect a serial Mac to the printer.
2. Connect the serial Mac to the new Mac via an Ethernet crossover cable, or through an Ethernet network.
3. On the older Mac, go to the Chooser and select the printer's driver.
4. On the right side of the Chooser window select the serial port to which the printer is connected.
5. Click the "Setup" button.

6. Click the check box next to "Share this printer".
7. Click the name box and give the printer a name. Give the printer a password if desired.
8. Click "OK" to close the setup dialog box.
9. Open the Chooser on the USB Mac.
10. Select the icon for the printer.
11. On the right side of the Chooser window under "Connect to:" you should see an item called "Shared Printer." Click on it.
12. Close the Chooser window.

You can now print from the new Mac.

Steps 9-12 may be repeated on several networked Macs.

The printer will only be accessible to Macs on the network when the older Mac to which the printer is connected is turned on.

How do I share my inkjet printer without buying an Ethernet print server?

Apple's USB Printer Sharing, included in OS 9.x, supports most USB printers.

Where is the audio input jack on my new Mac?

Recent Macs no longer have analog audio input jacks. If you need to feed analog audio into your Mac, you need a USB audio interface, like a Griffin iMic (which is not a microphone at all, but rather a line/mic level to USB adapter), or a more advanced interface like a Roland UA-30. If you are serious about audio on the Mac, you will be looking at even more sophisticated products like the Digidesign XP or 001, VXPocket PCMCIA card, or a FireWire audio interface.

How do I connect a PalmPilot to my USB Mac?

If your Palm has infrared and you have an iRDA equipped PowerBook or an original 233 MHz iMac, use infrared. The instructions and files you need are in the "iRDA" folder in the "Extras" folder on the MacPac CD. Palm is finally shipping some models with a USB

cradle, but you can also use the original Palm Cradle (or Palm V travel kit) with a Palm USB adapter, Keyspan PDA Adapter or Keyspan Serial Port adapter.

How do I connect my old ADB device to a new USB Mac?

A Griffin iMate adapter will work fine for most mice, keyboards and other ADB devices, including many copy protection dongles. But for more complex devices like a Wacom tablet with a pressure sensitive pen, we suggest buying a new USB version for best results.

SCSI (SMALL COMPUTER SYSTEM INTERFACE)

Macs don't come with SCSI drives anymore, do I still have to worry about this stuff?

Ultra-ATA (also called EIDE or IDE) drives have improved dramatically in the last five years, and performance differences between ATA and SCSI are much smaller than they used to be. But the price differences are still quite large. These days, we only recommend SCSI drives (or disk arrays) for certain audio and video applications with very high data rates. If you don't have any SCSI peripherals and don't do multimedia, you don't have to worry about SCSI.

Is it true that the newest G3s and all G4s have no SCSI?

Recent Mac mini-towers such as the Blue & White G3s and the Graphite G4s do not have SCSI on the motherboard, but some models may ship with a SCSI PCI card installed. You (or we) can also add a SCSI card to any of these models.

I got a new CPU with a wide Ultra2 or Ultra3 SCSI card. What adapter do I use to connect my regular narrow scanner and Jaz drive?

It's preferable not to connect regular

narrow SCSI devices to a wide SCSI bus. The SCSI card will switch to a low speed compatibility mode, slowing down the hard drive too, and you may have problems with proper termination and cable length. If you need to use regular narrow SCSI devices, add a narrow PCI SCSI card such as the Adaptec 2930U. We stock and install a wide variety of SCSI cards at Tekserve. If you don't mind the reduced performance caused by mixing devices, be sure to use a special adapter or cable that includes "high-bit termination" or you may have data reliability problems. Another option is the Adaptec 29160N PCI card, which provides wide Ultra3 internal SCSI connectors for fast internal SCSI drives, but has a narrow fifty pin (HD50) external connector perfect for Jaz drives and scanners.

I added an Adaptec 2906 SCSI card to my Blue & White G3 or G4. Why can't I boot from my external Zip or Jaz drive?

The AVA-2906 card is not bootable (it's not even recognized unless its extension loads). Boot from a CD or trade up to a bootable SCSI card like the AHA-2930U.

FIREWIRE & USB

If my computer has both USB and FireWire, which type of external drive or CD burner should I get?

FireWire is much faster and is the preferred interface for these devices. Some hard drives and CD burners come with both interfaces, so you can use them with older computers that may lack FireWire.

When I add a new device to my computer, like a USB Zip drive, should I install the software that came with it?

As Apple has upgraded the OS, they have included support for all sorts of devices. For instance, OS 8.6 and 9.x and OS X already include drivers for most Iomega Zip and Jaz drives. In fact, the software in the box with the

drive is probably old and out of date and may even be incompatible with your OS. So we suggest trying the device first. If it works without installing new software, you are ahead of the game. And if you are on the Internet and plug in a new USB device that is not supported, the OS may offer to find the latest driver and download it for you.

Do I need special software or extensions to use FireWire devices?

Mac OS 9.1 and OS X include basic FireWire device support and will work fine with most FireWire hard drives and cameras with no third party software or extensions installed. Some drives may offer improved performance if you use the manufacturer supplied "drivers". But usually less is more, so try without the special drivers first. For scanners and some other devices you will usually need to install the drivers that came with the device (but check for updated drivers on the manufacturer's web site).

Can I add FireWire or USB to an older Mac?

For desktop Macs that have PCI slots, you can add a FireWire or USB PCI card, or a single card that has both kinds of ports. For the PowerBook G3 Series, you can add a USB or FireWire PCMCIA card (or both). We recommend using System 8.6 or later if you install one of these cards.

If FireWire runs at 400 Mb/s, is it faster than Ultra160 SCSI running at 160 MB/s?

No. Did you notice that Ultra160 SCSI has a capital "B" (as in MB/s) and FireWire has a small "b" (as in Mb/s)? Ultra160 SCSI runs at 160 MegaBytes per second. A Byte is 8 bits. FireWire runs at 400 Megabits per second. To convert from bits to Bytes you divide by 8, so FireWire is only 50 MB/s. Still darn fast, and much simpler to configure. (Yes, you figured it out—12 Mb/s USB could also be called 1.5 MB/s USB.)

Why do people say that FireWire drives aren't "native" FireWire?

Hard drives have interface cards on them to talk to the outside world. Most drives have Ultra-ATA interfaces. Some drives have SCSI or Fibre Channel interfaces. None of the drive manufacturers has shipped a drive with a FireWire interface yet. All the FireWire drives that are currently being sold are Ultra-ATA drives with a special ATA to FireWire adapter attached. In early 2001 "second generation" ATA-FireWire bridge chips started shipping, and they offer greatly improved performance. If they ever make native FireWire drives, performance may improve further.

Can I use FireWire to network two Macs, or to share a hard drive between them?

One vendor offered a product to allow this, but we suggest using Ethernet for networking. You can't share a regular FireWire drive between two Macs simultaneously. You can unplug a FireWire drive from one Mac and plug it into another without turning anything off (but you'll need to close any open files and dismount the drive by dragging its icon to the trash or using the Put Away command before you unplug it). One company went bankrupt developing a product called SanCube that supports multiple computers connected to and reading from a FireWire hard disk array, although only one computer can have write access to a given volume at one time. A successor company may reintroduce that product.

Is a FireWire drive fast enough for Audio or Digital Video?

With the new "second generation" bridge chips that came out in 2001, the answer is usually yes. DV has a fixed data rate that should be easily accommodated by these drives. However, if you are capturing analog video through a CineWave, RTMac, Igniter or similar card, you will probably have to stripe several FireWire or SCSI drives to achieve the

needed throughput. For serious analog video, you may need to stripe three or four Ultra160 SCSI drives. For HD Video, you might need to stripe as many as six or eight drives, with two channels of SCSI controllers. Ask us to configure an appropriate array for you.

Can I really have 127 hard drives on a FireWire bus?

Well, that's the theory, and maybe you can have 127 devices, but Apple's FireWire version 2.4 and below limited you to no more than eleven individual hard drives connected to a single CPU by FireWire. Later versions of FireWire have gotten past that limit.

What is FireWire Target Mode?

On most Macs with built-in FireWire, you can press the "T" key while starting up, and the computer should enter a special FireWire Target (or disk) mode, indicated by a FireWire icon floating around the screen. That computer will then act like an external FireWire hard drive, and if you connect it to another FireWire equipped Macintosh it should mount on the desktop like another drive. You can then copy data back and forth. In some cases you can even run data recovery or repair programs on a drive this way if a computer won't boot. However, on some Macs you can only start to FireWire disk mode if there is a valid System Folder (8.6 or later) on the disk, so if the computer won't boot and the system is messed up, you might not be able to enter FireWire disk mode.

MONITORS / DISPLAYS

How come my old Apple monitor won't attach to my new Mac?

For the first ten years, Apple used a DB-15 connector with two rows of pins to connect external monitors. If you have one of these monitors, we have a cheap "Mac to VGA" adapter that converts to the industry standard "VGA" connector, which has three rows of

pins. New Macs have had VGA connectors for several years now.

How come my new non-Apple monitor won't attach to my old Mac?

Most industry standard monitors use the VGA connector with three rows of pins. That fits right into new Macs, but for older Macs we have an inexpensive "MacPNP" adapter.

How come my new Apple brand monitor won't attach to my old Mac?

In 2000, Apple introduced the unique "Apple Display Connector" (ADC), to connect any recent Apple brand monitor to most recent Macs with a single plug and cable that includes power, video and USB signals. At first, these new Apple monitors would only work with new Apple CPUs. But now there are products like the Dr. Bott DVIator (\$150), which allow you to connect an Apple ADC display to an older computer. But there's a gotcha: the older computer must have a "Digital Video Interface" also called DVI. Some early G4s had this connector (before ADC). And you can add a PCI card with a DVI connector to any Beige or Minotower G3 or G4. There is even a PCMCIA card to add a DVI connector to a PowerBook. Macs with ADC connectors also have VGA connectors for industry standard monitors to attach.

Even though I added a video card, I'm told that I can't connect two new Apple ADC monitors to one Mac. Can that be true?

If your extra video card has a DVI connector, you can get a "DVIator" that will allow you to connect a second ADC monitor.

How come my new non-Apple flat panel monitor won't attach to my new Mac?

If the monitor has an analog connection, it's VGA plug should go right into your Mac. But if it has a DVI connector for more stable digital connection, you need a \$35 DVI to ADC adapter.

Can you run down all the choices of CPU video support?

Beige Macs: DB-15 with two rows of pins
 Blue & White G3 Macs: VGA connector, 15 pins in three rows
 First Graphite G4s: VGA connector, 15 pins in three rows
 Next Graphite G4s: VGA connector, 15 pins in three rows & DVI
 Current Graphite G4s & Cube: VGA connector, 15 pins in three rows, & ADC
 Recent PowerBooks: VGA connector, 15 pins in three rows
 First iBooks: No Video output
 iBook (Dual USB): special adapter cable to VGA connector, 15 pins in three rows

Can you run down all the choices of display video support?

Beige Apple Displays: DB-15 with two rows
 Blue & White Apple Displays: VGA connector, 15 pins in three rows
 Graphite Apple Displays: VGA connector, 15 pins in three rows
 First Cinema Display: DVI
 Current Apple Clear/Graphite & Cinema Displays: ADC
 Most non-Apple CRTs: VGA connector, 15 pins in three rows
 Non-Apple Flat Panels: VGA connector, 15 pins in three rows and/or DVI
 Barco and other high end displays: individual BNC connectors (Mac or VGA to BNC cables are available).

Every once in a while, the image on my monitor begins to vibrate or shake. After a few minutes it stops. Any idea what could be going on?

Check the position of your monitor—especially if it is near the wall of your kitchen. Author Sandee Cohen tells us that one of her staff had a monitor that would begin to vibrate every time she heated up her dinner in the microwave oven which was on the other side of a very thick wall. Microwave ovens can

generate electro-magnetic disturbances that can cause your monitor screen to vibrate or shake. Similar disturbances can happen near large power transformers, and in basements that are over subway lines. In some challenged locations, a flat panel LCD display (which is much less susceptible to electromagnetic interference) may be the best choice.

My CRT has two faint grey horizontal lines across it. How do I fix that?

We call that the “Trinitron mark of quality.” Aperture Grill CRTs like the Sony Trinitron and NEC/Mitsubishi DiamondTron have those internal support wires as part of their design.

MEMORY

What speed memory do I need for my particular Mac, and how much can I add? Should I add it in pairs?

This has become so complicated that we suggest you call us or use one of the references online like Apple’s Memory Guide. Before calling us, please check your exact Macintosh model and also write down the memory information shown in “About this Macintosh” or “About this Computer” under the Apple menu.

I just installed an Apple Firmware update, and some of my RAM has disappeared, or my Mac won’t boot at all. What do I do?

In early 2001 Apple released a Firmware update for many G3s and G4s that disabled certain non-Apple brand memory. We think that in most cases there was nothing really wrong with that memory, but Apple was being very cautious. Your memory supplier should swap or upgrade that memory at no charge, or you can use the free “DIMM First Aid” program to update the memory yourself. But there’s a gotcha—if all your memory was disabled, you can’t boot the computer at all. So please run DIMM First Aid BEFORE you run

the Apple Firmware update. We don’t understand why Apple didn’t include a test like DIMM First Aid in their Firmware updaters itself.

I get “out of memory” errors in a certain program, even though I just added more memory to my computer. How do I get the program to know about the extra memory?

OS X eliminates this problem completely. But in OS 9.x and down, when you launch a program, it asks the system only for the amount of RAM set as its “Preferred Size.” You need to set the program in question to ask for more RAM. To do this, quit the program, and highlight the program icon. Then select “Get Info” from the File menu or type **⌘-I**. At the bottom of the Info window you should see a section called “Memory Requirements.” (With OS 8.5 and up, select “Show: Memory” from the pop up first.) Then increase the “Preferred Size” by 50 or 100%. If it says 4096, try 8000 (or 8192 if you like base2).

Before increasing a program’s preferred memory setting, it’s a good idea to check “About this Mac” or “About this Computer” under the Apple menu in the Finder to check how much “built-in” memory you have. This will also show you how much memory is being used by the OS and other programs that are running. Don’t set a single program to use more memory than is available. If you want to be able to run several programs at one time, be sure that the preferred memory of all the programs you will run simultaneously, plus the memory used by Mac OS, is less than the total built-in memory.

What’s the cache (or disk cache) in the memory control panel and how big should it be?

The computer uses a little bit of memory to save things it guesses you will soon need to get from the hard drive. It’s faster to get it from memory than from the hard drive. With

System 7.5.3 and up click the “Use Defaults” button in the memory control panel and let Apple set the cache size (that may also turn on virtual memory, which you may want to turn back off). With System 7.5 and down, Set the cache to 128K or 256K and leave it alone.

What’s virtual memory and how much should I have?

Virtual memory uses some clever programming and some hard drive space to simulate more RAM than you really have. Its main virtue is that it’s free, and that PowerPC programs load a little faster and require a little less memory when virtual memory is on. The downside is that it’s slower than real RAM, uses up hard drive space and shortens battery run time on PowerBooks. We prefer adding real RAM and turning off virtual memory. However, if you need to have three or four programs open at once so you can jump between them, virtual memory is okay. You’ll get no benefit if you try to use virtual memory to give one program more RAM than you actually have physically installed, and your computer will slow dramatically. PhotoShop and Final Cut Pro are usually faster and happier with virtual memory turned off.

With Mac OS 8.1 and higher, Apple recommends always leaving Virtual Memory on, but you might want to try it both ways and decide for yourself. In OS X, virtual memory is vastly improved and cannot be turned off.

What about RamDoubler from Connectix?

We think its time has passed.

VIRUSES

I think I have a virus. What should I do?

Buy the latest version of Virex or Norton AntiVirus for Macintosh (or your preferred anti-virus program). But don’t stop there—the virus definitions that come with the product are probably already out of date. You

must get the latest update for the program you bought (updates are released online every month, new shrink-wrapped boxes are usually many months old). Install the program, update it, and run it. The freeware Disinfectant, our former recommendation, is no longer being updated and it will miss most new viruses.

POWERBOOK SPECIFIC ITEMS

Does a battery drain when not in use? Are new batteries fully charged?

All batteries have some “self-discharge,” usually 1% to 3% per day. That means that the battery will be dead in a month or two sitting on the shelf and will need a full charge. Brand new batteries are always shipped without much charge, and must be charged before use. The PowerBook 500 series uses “intelligent” batteries that can get dumb if left uncharged for more than a month. This means that even if you don’t use your PowerBook at all, you should plug it in for at least 24 hours every week so the batteries can charge. It’s okay to leave your PowerBook plugged in all the time.

Is it okay to run my PowerBook without a battery?

We don’t recommend it. PowerBooks have an internal rechargeable backup battery that saves your PRAM settings (printer, AppleTalk, clock, etc.). If you leave a PowerBook unplugged for a week or two without a regular battery installed, that internal battery will be depleted, your settings will be lost, and you may have trouble booting the computer. The regular battery also acts as like a ballast, maintaining smooth voltages to run your PowerBook.

The first G3 Series PowerBooks were designed to run on AC power without any battery, so you can have a CD-ROM and a floppy drive (or zip) installed at the same time. We’ve already seen several customers who grabbed their battery-less G3 PowerBook

and wondered why it didn't work on the airplane, so if you usually run with two drives and no battery, don't forget the battery when you unplug. iBooks are designed to always have a battery in them.

Should I get AppleCare for my PowerBook?

PowerBooks are manufactured to closer tolerances, get rougher handling than desktop computers and are expensive to fix. We think that Apple's own extended warranty program, called AppleCare, is usually a good investment for PowerBooks, although Apple has also noticed that, and the cost of an extra two year's of coverage has risen to \$349 plus tax. Of course Apple is betting that you won't need it and that they'll come out ahead, but many of us would rather spend \$349 on insurance to avoid the chance of a \$500 or \$1,000 repair. AppleCare doesn't cover broken plastic or physical damage from dropping or abuse, or service outside North America. AppleCare can only be purchased before your original warranty expires, and it cannot be renewed.

At Tekserve we sell AppleCare at a discount. As of this writing, Tekserve and many other Apple Authorized Service Providers throughout the USA can perform local (sometimes while you wait) warranty and AppleCare repairs on most PowerBooks. However, we can't guarantee that will always be true—Apple has recently determined that fixing PowerBooks at a single national mail-in depot is cheaper for them, and they could require mail-in service at some point. iBook service is already limited to the mail-in depot.

What's resetting the Power Manager, when should I do it, and how?

The Power Manager is software in the PowerBook that works to maximize battery life. It stores some special information for itself in the PRAM, and if that information gets corrupted you may have trouble running on batteries. When you have battery problems

it's frequently a real problem with the battery or the computer, but sometimes it's just a software problem with the Power Manager. Here's how to reset the Power Manager on different PowerBooks:

PowerBook 100: Flip the battery switch on the back down, and then hold down both the reset and interrupt buttons (on the left side) for 15 seconds.

PowerBook 140-180c (except 150): Unplug the AC Adapter, take out the battery and leave it alone unplugged for 5 minutes. That's probably all you need for the 160-180c. On the 140, 145 and 170 (and just to be sure on the 160-180c), then use two paper clips (or one paper clip bent into a U shape) to hold in both the interrupt and reset buttons on the back for 10 seconds.

PowerBook 150: Disconnect AC adapter, remove battery, use a paper clip to press the recessed reset button on the back for 10 seconds. Then attach the AC adapter and press that recessed reset button momentarily—you will hear a small pop from the speaker. Now use the regular power button to turn on the unit. Insert the battery and charge it for at least 8 hours before trying to run on battery alone.

PowerBook Duo 200 Series: Remove power and battery, then press and hold the power/reset button on the back for 45 seconds.

PowerBook 500 Series: Press \mathcal{C} -Option-Control-Power On all at once. If the computer is on it will go off (losing all unsaved work). If the computer is off you won't notice anything, but you have still reset the Power Manager.

PowerBook 190, 1400, 2300, 2400, 3400, G3 and 5300: Shut down the PowerBook (Shut Down, not restart). Then turn on the PowerBook and immediately press \mathcal{C} -Option-P-R. The Mac should chime once, the screen will go dark, and the green sleep light will be on steady. Now press the reset button on the rear. You may then need to use the regular Power button to turn the machine on.

Original G3 Series PowerBooks: If the PowerBook is on, turn it off. Then use the key combo (shift-fn-ctrl-power-on) that is printed on the back of the machine. Wait at least five seconds, then press the power button to restart.

G3 Series PowerBooks with Bronze Keyboard: If the PowerBook is on, turn it off. Press the reset button on the rear of the computer (find it between the video and modem jacks). Wait at least five seconds, then reconnect the AC adapter and press the power button to restart.

Original iBook and iBook (FireWire) If the iBook is on, turn it off. Using a blunt object like a paperclip, press the reset button above the power button at the base of the display. Wait at least five seconds, then reconnect the AC adapter and press the power button to restart.

G4 PowerBook and iBook (Dual USB): If it's on, turn it off. Press the reset button next to the video port on the back or side of the computer. Wait at least five seconds, then press the power button to restart.

Note: on the iBooks and PowerBook FireWire and G4, resetting the PRAM will also change the date and time setting of the computer, so you should check that after any PRAM reset.

COMMUNICATIONS, THE INTERNET & AIRPORT

Can lightning really damage my modem?

Yes, whenever there is a big thunderstorm we see a fair number of Macs with dead modems come in for service the following days. We suspect it's more often people living in houses or brownstones with outside phone wiring rather than big apartment buildings, but we recommend unplugging your modem from the wall during storms. Or you can try a surge protector with phone line protection, but we haven't tested how well they work.

How do I save my Internet settings or switch among different service providers?

Apple's TCP/IP and PPP control panels both have a "Configurations..." item under the file menu. Once you have your Internet stuff set up, go to each of these control panels and export your current settings. You can also name and save configurations for several different Internet setups (one at home, one at the office, one on the road) and use the Configurations menu, control strip, or Apple's Location Manager to easily switch among them. Be sure to export all the configurations and save them on a backup.

How do I connect my Mac to DSL or a Cable Modem?

All recent Macs have a built-in RJ45 Ethernet port and will plug right in. The Ethernet port looks like a wider than normal telephone jack and may be labeled with a <--> symbol. Some older beige Macs have built-in Ethernet with both the RJ45 and an Apple "AAUI" connector. Use the RJ45. Even older Macs may only have the AAUI, in which case you need an AAUI to RJ45 adapter. And some Performa computers lack an Ethernet port, but one can be added in a PCI slot or "Comm Slot" (CS). You can also connect an Airport base Station to your DSL or Cable Modem and then use Airport cards in all your recent Macs. If you want to connect more than one Mac to a single DSL or Cable Modem without Airport, you may need a Router. For DSL which uses "PPPoE" (Point to Point protocol over Ethernet), an Airport base station or router has the added advantage that it handles the PPPoE login and passwords, so your computer doesn't need special software to make the connection.

Is DSL or a cable modem safe?

With DSL and cable modems, your computer is usually always connected to the net. Particularly if you have a "fixed IP address" it becomes easier to hack into your

computer. And with cable modems, other users in your neighborhood may be able to access your shared files or networked printers. (Look in your Chooser and Network browser and check if you see anything that isn't in your own house.) You should turn off file sharing and web sharing or at least set complex passwords. Depending on the importance and secrecy of your files, you may want to get a hardware or software firewall. An AirPort base station can provide some firewall functions such as assigning random IP addresses, network address translation (NAT), etc. If you are not using AirPort, a MacSense X-Router or similar product will provide these services (and more) while allowing you to share a single cable or DSL connection among multiple computers.

Is AirPort really insecure?

Well, it's not the most secure network available. When your data is traveling on a wire, an intruder would have to tap it; definitely possible, but a bit of a hassle. With AirPort, your data is a radio transmission, still not totally in the clear, but a whole lot more available to the world. No encryption is really great encryption, and the 40-bit WEP encryption offered by AirPort is considerably less great than the 128-bit encryption in most web browsers. Recent studies have shown some vulnerability in the security of IEEE 802.11b technologies like AirPort and its WEP encryption. Keep in mind that using other encryption like secure http (pages beginning with "https://") and Secure Shell (SSH) to transfer sensitive information (credit card numbers, etc.) will provide an extra layer of security, leaving pure gibberish in the hands of your friendly network intruder.

What about my AirPort base station? Can people steal my bandwidth?

First of all, You will want to set a decent network password. Don't use your dog's name. In addition, AirPort software v. 1.2 and higher

will allow you to restrict access to your base station based on the MAC address (or "AirPort ID") of the AirPort cards you have in your machines. You can find the unique 12-character AirPort ID on the label of each AirPort card. It is said that a certain computer repair shop's unrestricted AirPort Base Station used to be within range of a sushi restaurant across the street. That Base Station has since been moved, leaving a few elite network-and-eel-hungry diners out of broadband luck.

OTHER QUESTIONS

I just bought a new Mac. Where is the manual?

New Macs come with a very short "getting started" guide. The "manual" is under the help menu on the computer. If you are new to computers (or to Macs) and want more printed information, you can buy one of many books that are available.

How do I clean my screen?

Never spray anything onto the screen. Apple says to wet a lint free cloth and use it to wipe the screen clean. Don't drip liquid down into the screen bezel. Don't use scratchy paper towels. My partner Dick thinks that "Kleer Screen" is the greatest, so we sell it. Apple and Sony both recommend it too.

The clock on my computer keeps going back to 1904, or 1956 or something.

This means that the backup battery on your computer's logic board needs replacement. We stock the batteries. In most flat-shaped Macs it is pretty easy to do it yourself, in the Classic and Ilci/cx and tower Macs you should let a professional do it. If we sell you a battery we install it for free. On a PowerBook, your internal PRAM battery may be dead, leave the PowerBook plugged in for two or three days to recharge it. After four or five years a PowerBook may need its internal

PRAM battery replaced by a technician. On both the iBook and PowerBook FireWire, some serious crashes can cause the clock to reset. The crashing may be a sign of a problem, but the clock changing is normal.

Why can't I eject this disk or CD-ROM?

The CD-ROM eject button on the front of most Macs only works to open the tray when there is no CD-ROM in it. If there is already a CD in the drive, you eject it by dragging the CD icon to the trash or highlighting it and selecting put away (⌘-Y) from the File menu. If the computer is shared or the CD was already inserted when File Sharing was enabled, and you are running a System before 7.5.1, you won't be able to eject it unless you turn off file sharing.

Why can't I rename this disk?

If file sharing is enabled you won't be able to rename disks. Turn off file sharing. If that doesn't solve it, run Apple's Disk First Aid.

I got an error-XXX. What does it mean?

Frequently your Mac has gone through so many gyrations before it put up the error message that it may not be helpful at all. But the shareware "System Errors" or "Apple Error Codes" desk accessories can help answer the question. For instance, -34 means your disk is full. Bus Error and Type 11 errors can be almost anything.

How do I save a file on a disk that a Windows computer can read, or read a Windows disk on the Mac?

Mac OS 8.5 and up have the File Exchange control panel (called PC Exchange in System 7.5 to 8.1). This allows the Finder to recognize and mount (and even format) DOS and Windows disks. For full compatibility, it's best to format interchange disks as PC disks on the Mac rather than on a PC.

With System 7.1 and down, the Apple File Exchange program is included and will let you

copy files to and from DOS floppy disks.

To actually use Mac files on a PC, or PC files on a Mac, you need a compatible application (like similar Mac and PC versions of WordPerfect or Excel) or else a file translator. Many Claris and Microsoft programs come with limited built-in translators, but MacLink Plus is a good universal translator. Microsoft Office files created on the Mac or PC are usually interchangeable with the same programs on the other platform, usually going forward or back one or two generations. However, newer versions may have features that are not supported in older versions, so simpler files are more likely to exchange without hassle.

I have a Wintel machine. What's Tekserve's equivalent on the dark side?

For the last ten years we've asked people to let us know when they find a good service shop for Windows machines. We haven't gotten any enthusiastic responses. If you find a great place to service Wintel stuff, please let us know.

Where can I donate my old computer?

Two places that accept donations of working computers are: Materials for the Arts, 718 729-3001 and the National Cristina Foundation, 203 863-9100, www.cristina.org.

What's Tekserve's music on hold?

Dave Grier's "Lone Soldier," Rounder Records CD0309.

Didn't the last Tekserve FAQ have more details on stuff like SCSI?

This FAQ changes every year, yet it stays the same size. That means that we constantly remove content relating to older Macs and add newer content. You can search or download older versions of the FAQ at tekserve.com.

FILE SHARING

How do I use file sharing to transfer files from my PowerBook (or roommate's computer) to mine, and back again?

First, network the two Macs together:

- Recent Macs—use an Ethernet network, hub, or simply an Ethernet crossover cable.
- Older Macs, the easiest way is with a standard printer cable (Apple's M0197) between the printer port on each Mac. That's the same cable you use to connect a StyleWriter printer. (Unless you are using Open Transport you can't use the modem port for AppleTalk.) Other methods are with PhoneNet or ModuNet (the same cables you use to share a printer among several Macs).

Now you have to "share" one computer so that other computer(s) on the network can see it. A shared computer is also sometimes called a personal file server. Although there are many steps, you only have to do them once.

To share your computer:

- 1 In the Chooser (under the Apple menu), turn on AppleTalk. (You also may need to set AppleTalk to the Printer port or to Ethernet in either the AppleTalk control panel or the Network control panel).
- 2 In Control Panels (under the Apple menu or in the System Folder), double-click on File Sharing (in OS 7.61 and down, it's called Sharing Setup). If you haven't entered an owner name, password, and Mac name, do so now. My owner name is David, my Mac's name is "David's G3." Let's say my password is "Backupmoreoften." If you are on a corporate or school network or using a cable modem, be sure to use a serious password, not "pass" or "please" or "chocolate."
- 3 Under file sharing, press the Start button. If it says Stop, then file sharing is already on,

so leave it alone. Close the File Sharing window by clicking in the close box. Don't worry about Program Linking — you can leave it off.

- 4 Now you have to decide who can access your Mac. If you never connect to a network outside your home, it's easiest to open the Users and Groups control panel, double-click on Guest and click on "Allow guests to connect." If you are on a public or corporate network, using a cable modem, or just paranoid, while in Users and Groups go to the File menu and select New User. Name the new user and give him or her a password. If it's just you, you've already given yourself a password in File Sharing. When you are done, close the Users and Groups control panel.
- 5 Now you have to select what to share. If it's just you, or you and your loved ones, you probably want to share your entire hard drive. If you are on a network with many other Macs, you want to retain control, so you may want to make a new folder called "Shared" and only share that.
- 6 With OS 8.5 and up, click on the icon of your hard drive or the folder you want to share and highlight it. Select "Get Info" from the File Menu (or press **⌘-I**), then in the Info window select "Show: Sharing" from the pop-up menu, and check the box "Share this item and its contents." You can then adjust privileges for any users you created.
With OS 8.1 and down, click on the icon of your hard drive or the folder you want to share and highlight it. Go to the File menu and select Sharing..., then check the top box "Share this item and its contents." You can then adjust privileges for any users you created.
- 7 That was a lot of work, but you only had to do it once. In the future you only need to use the File Sharing (or Sharing Setup) control panel (or the control strip) to turn sharing on and off.

Now that you've shared a computer, you can access it from any other computer connected to the same network.

- 1 Go to one of those computers and open the Chooser under the Apple menu. On the left side should be a bunch of icons. Click on the one that says AppleShare.
- 2 On the right side you should see a window that says "Select a file server:", and if you have successfully shared and networked your computer, you'll see it listed there. Highlight the name of the shared computer and click OK.
- 3 If you took the trusting approach, click on Guest, otherwise enter a user name and password that you previously set on the other computer. Then click OK. Next you'll see a list of the shared drives or folders on the other computer (probably just one). Highlight the one you want and click OK. In a few seconds the icon of that drive or folder should appear on your desktop. You can copy files to and from it as though it was another drive on your computer (but it will be much slower).
- 4 To avoid ever having to repeat steps one to three, click on the icon of the shared volume and select Make Alias from the File menu. Next time you want to "mount" that shared volume on your Mac, just double-click on the alias.

What if I tried to follow these instructions and didn't find the control panels or choices I expected?

You may not have all the file sharing items installed in the System on your computer, or you may have used an Extensions Manager to get some of them out of the way because you didn't need them. Find your System installer disks or CD-ROM, open the installer, select "Custom Install" or "Add/Remove", and reinstall AppleShare, Open Transport and File Sharing, all found under the "Network & Connectivity" selection. On older Macs, reinstall AppleShare and File Sharing.

Although you need System 7 or higher to enable file sharing, you can access a shared Mac from a computer running System 6—you just need to use the System 6 installer disk to install "AppleShare Client" software on the System 6 Mac.

File sharing works well, but now my Mac is very slow to start up and takes an awfully long time to shut down after I tell it to.

If file sharing is turned on, your Mac goes through an elaborate private ritual every time it boots up, checking the sharing status of every folder on your drive. When you shut down, your computer carefully unshares every folder on your drive before it will shut down. So, when you aren't using file sharing, turn it off. If you have a control strip, there is an icon for disabling file sharing. There's also an icon for AppleTalk, and if you turn off AppleTalk, file sharing will go off too (unless you are using AppleTalk remote access). AppleTalk uses extra battery power, so leave it off when you are "on the road" with your PowerBook.

Why didn't it work when you asked your wife to follow these instructions?

Because I use AppleTalk Remote Access on my computer, my Network (or AppleTalk) control panel was set to Remote Only instead of LocalTalk Built-in. That meant that her shared PowerBook didn't show up in my Chooser. It was very embarrassing and I started pulling cables every which way before I figured it out.

Why didn't you answer my most important question?

Sorry, we ran out of room. Please email help@tekserve.com and we'll try to help. If you notice any errors in this FAQ, please send us a note by mail or email. Thanks!

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