

The System Software Museum

IN THIS CHAPTER:

- Every system version Apple ever released
- The differences between System 7.1 and 7.0.1
- The differences between 7.5, 7.5.1, 7.5.2, 7.5.3, 7.5.5, 7.6, and so on
- The SECRETS time line
- Mac OS 8 — what's left of it — explained
- Guide to AppleSpeak

In a little more than a decade, Apple has served up no fewer than 32 different versions of the Mac operating system. We will attempt in this chapter to guide you on a never-before-attempted journey: We will describe virtually all these permutations of the Mac's system software, from the short-lived System 1.0 to the sprawling, sophisticated System 7.6. Beyond that we'll show you exactly what to expect from Apple's as-yet-unreleased system updates and the still-evolving Mac OS 8.

THE SYSTEM SOFTWARE MUSEUM

Why create a museum of the Mac's system software? For one thing, exploring the nitty-gritty of system compatibility may prove valuable to Mac troubleshooters. It can be pretty handy to know, for example, that in a pinch you can run an LC II with System 6.0.8, but not 6.0.7. Or that a Quadra 630 can

run System 7.1.2P, but not the nearly identical System 7.1.2. Furthermore, the rash of System 7 varieties has boggled even us. Quick, without looking: What's the difference between versions 7.1.1, 7.1.2, 7.1.3, and 7.5? And what on Earth was System 7.5.3 Revision 2.1?

On a more philosophical level, this retrospective provides a stunning overview of just how far the Mac has come since its introduction. As we dug up this information, we were continually surprised to learn how many of the basic Mac interface features that we take for granted *weren't* around when we bought our first Macs.

For example, did you know that in the original Finder, you couldn't drag a disk into the Trash to eject it? That folders were nonexistent in Open and Save dialog boxes? That the original Calculator buttons were in a completely different order? How quickly we forget.

Join us now as we stroll down the corridors of the System Software Museum. Watch as the Mac operating system evolves before your very eyes.

System 1.0

The original Mac operating system was tiny by today's standards — a total of about 216K, including the Finder (46K) and a solitary printer driver, the ImageWriter file. (Note the lowercase *w*. The ImageWriter designation came along later.) Desk accessories, such as the Alarm Clock and Calculator, were installed in the System file, which was a whopping 142K, with fonts accounting for about 86K.

If you opened the System Folder on an original Mac 128K, you saw only six files — all with identical Finderlike Mac icons (see Figure 6-1).

The original system also included a separate tutorial disk, called Mousing Around, to help new users get acquainted with using the mouse. Remember, the whole concept of a mouse as a pointing device was new to the general public in 1984. Mousing Around (the forerunner of Macintosh Basics) let you play connect-the-dots and plunk out tunes on a tiny on-screen keyboard to hone your mousing skills (see Figure 6-2). We have one dark secret to tell you about Mousing Around, though — it was incompatible with the Finder! Apple actually had to ship a different version of the System and Finder on the Mousing Around disk. If you tried to use your Mac using *that* copy of the System, your Mac crashed!

Figure 6-1
The entire contents of the System Folder — all 216K of it — as it appeared in 1984.



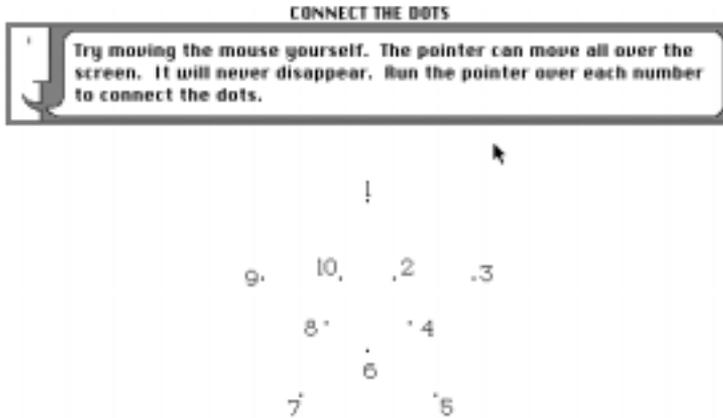


Figure 6-2 Hey, remember this? Mousing Around was mouse training at its most basic — and it came with all the early Macs.

TRUE FACT

THE MAC SECRETS SYSTEM SOFTWARE QUIZ

Think you've got Apple's never-ending parade of system software updates and variations all figured out? Then test your knowledge of Mac OS trivia with our System Software Quiz. If you know the answers to *all* these questions, you definitely need to get out of the house more. (Answers below.)

1. Name the only four desktop Macs ever made that can run System 7.5.2.
2. Which one of these is not a real part of System 7.5 Update 1.0? Find File 1.1.1, Macintosh Easy Open 1.1.1, WindowShade 1.3.1, Shared Library Manager 1.1.2.
3. Name the only Macintosh that can run 7.5.1, but not System 7.5 or 7.5.2.
4. Explain, in 20 words or less, the difference between System 7.1.2P and System 7.1P2.
5. Compare and contrast Stickies versions 1.0 and 1.0.1.
6. Of the following three Power Macs — the 6100/60, 6100/66, 7100/66 — only one requires an enabler to run System 7.5. Which one?
7. Name the only one-piece Mac that can run System 7.0.1, but not System 7.0.
8. What's the minimum version of System 6 required to run a Mac Classic?
9. Which of these operating systems cannot be run on a Mac Plus? System 7 Pro, System 7.5, System 7.5.1.
10. What's the difference between "System 7.5.3 System 7.5 Update 2.0" and "System 7.5 Version 7.5.3?"

Answers: (1) Power Mac 7200, 7500, 8500, 9500. (2) Shared Library Manager 1.1.2. (3) LC 5200/75. (4) 7.1P2 was released only on Performa models: 7.1.2P was used on 630 Quadras, LCS, and Performas. (5) Version 1.0.1 corrected a bug that caused a crash if Stickies was launched while notes were collapsed. (6) 6100/66. (7) Classic II. (8) System 6.0.7. (9) System 7 Pro. (10) They're the same, but the former refers to the upgrade to 7.5.3, while the latter is the official name of a new copy of 7.5.3.

THE OFFICIAL SECRETS MACINTOSH TIME LINE

4/76 Steve Wozniak and Steve Jobs, age 21 and 26, finish work on a preassembled computer circuit board. It has no keyboard, case, sound, or graphics. They call it the Apple I. On April Fool's Day, they form the Apple Computer Company.

5/76 David Pogue and Joseph Schorr, in Ohio and New York, respectively, graduate from seventh grade.

7/76 The Apple I board goes on sale to hobbyists for \$666.66.

1/84 The Macintosh 128K is introduced with System 1.0. Price: \$2,500.

2/84 Navy Captain Bruce McCandless and Army Lt. Colonel Robert Stewart become the first humans to fly free of a spacecraft during a Space Shuttle mission.

5/84 System 1.1 is released.

9/84 The Mac 512K is introduced with a list price of \$3,200. At the same time, the price of the Mac 128K drops to \$2,200.

11/84 Ronald Reagan is elected to a second term as President of the United States.

1/85 Apple announces the first LaserWriter printer. Price: \$7,000.

3/85 Construction of the MX missile is approved by Congress.

4/85 Finder 4.1 is released. The Empty Folder command is replaced by the New Folder command.

System 1.1

It took less than four months for Apple to release its first system upgrade for the Mac. System/Finder 1.1 was introduced on May 5, 1984, the same week Apple announced that it had already sold 70,000 Macs.

The big selling point of 1.1 was disk-copying speed. Apple increased the size of the Finder's memory buffer, significantly reducing the number of swaps it took to copy a disk on Macs with a single floppy drive. Improved system code also reduced the length of the system startup by about 20 percent and sped up returning to the Finder after quitting an application.

Finder 1.1 also included, for the first time, a Set Startup command in the Special menu, so you could designate a specific application to launch automatically when starting the Mac.

Still, there was no New Folder command; there was always an empty folder on each disk, no matter how many times you tried to delete it. If you renamed the empty folder (to use it for something), another empty folder appeared instantly. And there was no Shut Down command!

System 2.0

Nearly a year went by without the release of a new system. Then, in April 1985, Apple engineers unveiled System 2.0. Evidently, they had done most of their tinkering in the Finder; its version number jumped from 1.1 to 4.1. (And for the next three years, these two primary components of the operating system — the System and Finder — continued to have different version numbers.)

Finder 4.1 was not only faster, it was packed with new features. Some commands (such as Put Back and Close All) were removed forever. For the first time, list views displayed tiny icons next to file names. A new desk accessory, Choose Printer, was introduced — the forerunner of the Chooser. The Empty Folder command was replaced with the New Folder command. Another new

command, Print Catalog, appeared in the File menu; it let you print a listing of a disk's or folder's contents. The Special menu sported two new commands: Shut Down and Use MiniFinder.

The MiniFinder was an embryonic version of what would someday be At Ease. Here's how it worked. You selected the icons of the applications you wanted and then chose the Use MiniFinder command. A dialog box appeared, asking whether you wanted to install the selected applications in the MiniFinder. After that, whenever you quit an application, the MiniFinder dialog box would open, showing the icons of all the programs you had installed. You then could launch an application by double-clicking its icon.

Surprisingly, it wasn't until Finder 4.1 that dragging a disk icon into the Trash resulted in ejecting the disk and removing its icon from the Desktop. In versions 1.0 and 1.1, you had no choice but to use the Eject Disk command — and only then could you drag the icon to the Trash to remove it from the Desktop.

All these changes made for a much more sophisticated and polished operating system. But, of course, even these enhancements weren't enough for some people. Mac gurus were already searching for ways to optimize Mac performance. In early 1986, one Mac magazine suggested rebuilding the Desktop. Doing so, an article pointed out, would trim "15K worth of System-slowing stuff" from your Mac. Interestingly, rebuilding the Desktop didn't just erase Get Info comments back then: It removed *all* your folders, leaving all your icons naked and shivering on the Desktop.

System 3.0

The Mac Plus appeared in January 1986, equipped with a hot new Mac operating system — System 3.0 and Finder 5.0.

This upgrade brought some of the biggest changes in the Macintosh operating system to date. It featured a faster and more efficient Finder. It introduced the RAM

1/86 The Space Shuttle Challenger explodes. The Mac Plus debuts, along with several new system software features, including a RAM cache and the Hierarchical File System (HFS). HFS goes on to win *InfoWorld* magazine's 1986 Readers Choice Award for operating environment product of the year.

2/86 Mac gurus suggest speeding up your Mac's performance by rebuilding the Desktop, thereby reducing system clutter by 15K.

2/86 Swedish Premier Olaf Palme is assassinated in Stockholm.

6/86 Apple releases System 3.2 and Finder 5.3.

2/87 Disk First Aid is born.

2/87 The Tower report finds that President Reagan was "confused and uninformed" about the Iran-Contra affair.

4/87 AppleShare 1.1 is introduced.

10/87 The stock market crashes.

1/88 Apple introduces the first CD-ROM drive, the AppleCD SC, for \$1,200.

2/88 Panamanian ruler Gen. Manuel Noriega is indicted in federal court for assisting the Medellín drug cartel.

6/88 Apple releases System Software Version 6.0, the first version of the system to include the MacroMaker, CloseView, and Map utilities. The price is \$49.

11/88 George Bush is elected President.

4/89 Apple announces the FDHD External Floppy Drive for a price of \$629. Takeover rumors swirl.

8/89 System 6.0.3 is released with the SE/30.

9/89 Apple introduces the Macintosh Portable.

10/89 In the wake of a major earthquake, the *San Francisco Chronicle* and the *San Francisco Examiner* are published on October 18 using Macintosh computers connected to generators.

3/90 Apple introduces the IIfx, the fastest Mac to date. Suggested price is \$9,870.

1/91 The Persian Gulf war begins.

5/91 System 7.0 is introduced. Pope John Paul II issues an encyclical, "Centesimus Annus," urging a peaceful resolution to world conflicts.

9/91 System 7.0.1 is completed.

10/91 NASA reports that the ozone level in the stratosphere has dropped to the lowest level on record.

5/92 IBM, Motorola, and Apple announce a collaboration to develop the PowerPC family of RISC microprocessors

8/92 System 7.1 debuts.

11/92 Bill Clinton elected President.

2/93 Apple ships the ten millionth Macintosh computer.

5/93 The cult of zealot David Koresh ends in a fiery standoff with federal authorities.

cache — a small portion of superfast memory that speeds up Mac performance by storing frequently used instructions during a work session (today called Disk Cache). This was also the first version of the system that came with the Installer.

The most significant change was, without question, the mainstream introduction of the Hierarchical File System (HFS), replacing the old Macintosh File System (MFS). The old MFS system, you may recall, was non-hierarchical. In other words, you couldn't nest one folder within another. Oh, you could *put* files into a folder, but as far as the Mac's brain was concerned, all the files were on one level — the only level. When you used an Open or Save dialog box, the folders disappeared and all your files appeared in one gigantic list. (HFS had first appeared as a patch to accompany the HD20, Apple's 20MB hard disk, which hooked up to the floppy connector on the back of the Mac and which could have a floppy drive daisy-chained to it!)

System 3.1

You don't hear much about this version. It was released just one month after System 3.0 and was paired with an upgraded Finder — Version 5.2. Evidently, it had serious bugs; this is one system that Mac gurus of the day urged users to avoid.

System 3.2

Apple released System 3.2 in June 1986 (along with Finder 5.3) to fix about 30 bugs. Among other things, this release featured a redesigned Calculator. The old Calculator, frankly, drove a lot of people crazy; its buttons didn't match the layout of the numeric keypad — the division, multiplication, and equal buttons along the top row were in the wrong order (see Figure 6-3). The new Calculator had (and still has) a layout that exactly matches the numeric keypad on Apple keyboards.



Figure 6-3
The layout of the old Calculator (left) didn't match the numeric keypad. The current layout (right) was introduced with System 3.2.

This update also fixed problems with the Chooser. It patched up a problem that was causing italicized fonts to get mysteriously chopped off when printed, and it also fixed bugs involving lost files and system crashes.

TRUE FACT

EVOLUTION OF THE FOLDER

Many elements of the Mac operating system have remained constant as newer versions of the system have been developed, but most have gone through at least a few little refinements. Folder icons are a good example. Sure, there were folder icons in System 1.0 — but the original folders were different: They had four widely rounded corners and tabs that were one pixel shorter than today's folders; the current design (below, right) features three sharp, pointy corners and a slightly rounded upper-right corner (look closely — a one-pixel chunk is missing, creating a slightly softer edge).



The Trash also received a tiny cosmetic change. In the older versions of the system software, the lines indicating the ribbing

on the body of the can were drawn with edges leading off to the right. In Finder 5.0, the Trash can design was inexplicably flipped around, with the lines trailing off to the left, and it's stayed that way ever since (as you can see if you view the Trash in black and white). Now that's progress.

8/93 The Apple Newton is introduced.

3/94 Apple introduces the Power Macintosh. Takeover rumors swirl.

6/94 O. J. Simpson's white Ford Bronco is pursued by law-enforcement authorities in a slow-speed chase across the highways of Southern California.

7/94 The PowerBook Duo 230 is discontinued. Tonya Harding is stripped of her U. S. figure skating championship.

9/94 The first PowerPC-based Performa — the 6110 — makes its debut. Takeover rumors swirl.

11/94 System 7.5 is released.

12/94 Robert Duvall, Raisa Gorbachev, and Diane Keaton turn 65, 64, and 50, respectively.

1/95 Apple replaces the PowerPC chips in its first three Power Mac models with faster versions.

3/95 Eleven people die and more than 5,000 are injured in a nerve gas attack on the Tokyo subway by the Aum Shinri Kyo religious sect.

4/95 The first authorized Macintosh clone, the Power 100, is sold by Power Computing.

5/95 A car bomb devastates a federal building in Oklahoma City, killing at least 167 people.

8/95 The second generation of Power Macs is released — the first Mac to contain PCI slots instead of NuBus. Takeover rumors swirl.

10/95 O.J. Simpson is acquitted of murdering his ex-wife Nicole and her friend Ronald Goldman. Apple releases the Performa 6300 — the 45th Performa model released since October 1992, meaning that Apple has released one new Performa model every 3½ weeks for a period of three years.

12/95 The U.S. government “shuts down” over budgetary deadlock in Congress.

1/96 Apple releases System 7.5.3, the first universal Mac OS version since System 7.5.1. Takeover rumors still swirl. Apple’s quarterly report includes a \$700 million loss, triggering a year-long wave of negative publicity, and the hiring of a new CEO, Gil Amelio.

2/96 The Tokyo Macworld Expo draws 170,000 attendees, and Apple’s market share in Japan reaches 25 percent.

7/96 TWA Flight 800 crashes off the coast of Long Island.

8/96 Mac clone manufacturer Power Computing unveils the 225 MHz PowerTower Pro — the fastest personal computer in history.

8/96 Apple releases the first minitower Performa.

9/96 System 7.5.4 is yanked from distribution hours before its official release and replaced the next day with System 7.5.5. Four companies (Power, Umax, Daystar, Motorola) are manufacturing Macintosh clones, with several more gearing up to do so.

System 3.3

This incarnation of the system was paired with Finder 5.4. It debuted in January 1987. It was a slight upgrade from 3.2. It was designed to accommodate networked Macs that used AppleShare.

System 4.0

In March 1987, Apple released System 4.0. This time, the Finder didn’t get upgraded; the current version (5.4) remained. Apple recommended this system for all Macs with at least 512K of RAM. In other words, this was the first system that could *not* be run with the original Mac 128K. Mainly, System 4.0 fixed bugs that were still floating around in Versions 3.2 and 3.3.

Cosmetic changes took place, too. Mac Pluses and ImageWriter IIs rolling off the assembly line were no longer beige. They were clothed in Apple’s official new color: platinum.

System 4.1

This upgrade was released in April 1987 along with Finder 5.5. The new system came with AppleShare 1.1, which was required for networking the Mac II. Apple recommended this version of the system for the Mac Plus and higher. Among other things, System 4.1 improved performance of *large capacity* hard drives — meaning, of course, any drive over 32MB!

System 4.2

This update was released in October 1988. It became available to current Macintosh users as part of the Apple System Software Update 5.0, which included System 4.2 and Finder 6.0. This update introduced the first version of MultiFinder — the pre-System 7 answer to multitasking. MultiFinder (code-named Juggler) let you run two or more applications simultaneously and switch between

them by clicking an application icon in the menu bar. (Andy Hertzfeld's rival multitasking technology, called Servant, was never officially adopted by Apple.)

System 6.0.2

The System 6 era began in August 1989 with the release of System 6.0.2. (This also began the era of *three*-digit system numbers; a change in the third digit, after the second decimal point, indicates an even more minor upgrade than a change in the second digit.) Savvy Mac fans noticed a single visual change that immediately signaled the presence of System 6: a single black pixel. This extra screen dot appeared at the left edge of any Finder window, where the double line beneath the disk information joined the left wall of the window. (And by the way: What happened to System 6.0 and 6.0.1? The former was so buggy that it was immediately replaced — and the latter was so buggy that it was never even *released*.)

By this point, the system disks had grown into a four-disk set. Small upgrades and enhancements followed over the next two years, many of which simply accommodated the needs of specific new Mac models and printers.

System 6.0.3, 6.0.4, 6.0.5, 6.0.7

System 6.0.3 made its debut with the SE/30. Apple recommended 6.0.3 for all recent models. System 6.0.4 is the oldest version of System 6 that can run on a IIfx. For a IIfx, you need at least System 6.0.5, whereas 6.0.7 is required to run a Classic, IIsi, or the LC under System 6. (The LC II, however, requires at least 6.0.8, whereas the LC III requires System 7.0.)

System 6.0.8

Apple's code name for System 6.0.8 was Terminator — a fitting name, as this was indeed the last version of System 6, released just months before System 7 was unveiled. According to Apple, this is the only version of System 6 software that can run an LC II. It supports Macs as early as the Mac Plus. In essence, this system was 6.0.7 with improved printer drivers.

As the sun set on System 6, the Mac's System and Finder, weighing in at about 610K, had more than tripled in size since the days of System 1.0.

10/96 After three quarterly losses, Apple's finances stabilize with a \$25 million quarterly profit.

11/96 Bill Clinton is re-elected President.

1/97 Apple releases System 7.6, the first version of the System Folder to require a 68030 chip or better.

System 7.0

System 7 was Apple's quantum leap forward. Much hyped and heavily criticized, System 7 — code-named Big Bang — was rolled out in May 1991.

Upgrading to System 7, for many, was something of a pain. You had to have a hard drive. You had to have 2MB of memory or more. The System 7 upgrade kit itself cost money. And upgrading all your existing programs to versions that *ran* under System 7 cost a *lot* of money.

But System 7 made life a great deal easier. Several bugs had been fixed, a lot of poor interface elements had been improved, and a lot of thought went into making System 7 as effortless and elegant as possible. The completely refurbished operating system introduced dozens of new features. Among the most significant: 32-bit addressing (which finally allowed Macs to access more than 8MB of RAM); aliases; an  menu that could contain not just desk accessories, but also applications, folders, documents, and so on; the Application menu; Balloon Help; colorized 3-D windows; faster printer drivers; built-in File Sharing; the ever-useful Put Away command; the Startup Items folder; stationery pads; the Views control panel; and QuickTime.

In fact, System 7 introduced many of the basic Mac interface features that we've now come to take for granted: hierarchical list views that let you expand and collapse the contents of nested folders; shortcuts that let you select icons, open and close windows, and collapse and expand folders from the keyboard; the “renaming” rectangle that appears when you click an icon's name; the capability to paste custom icons onto files; and a Trash can that *doesn't* automatically purge its contents every time you shut down.

System 7.0.1

Users had only a few months to enjoy the fresh, clean, hearty feeling of having an operating system with a big, round integer before Apple followed System 7 with System 7.0.1, adding not one but two irritating decimal points. At Apple's headquarters in Cupertino, the new system version was known by two code names: Road Warrior and Beta Cheese.

The new version was mainly about bug fixes — especially an insidious disappearing icons-problem — and accommodations for the then-new PowerBook and Quadra families. For example, the old Portable and Brightness control panels (left over from the Mac Portable) were updated, and the Caps Lock extension made its debut. The Cache Switch control panel, along with internal system file-tweaks, was introduced for the 68040 Macs. And the software governing RAM disks and sound management were touched up for the new machines.

System 7.1

After the harrowing experience of cranking out System 7.0.1 solely to support a couple of new Mac lines, Apple hit upon the enabler scheme described in Chapter 5 and rolled it out in System 7.1, which was destined to be a solid “reference release” for several years.

System 7.1 was remarkable for another reason, too: It was the first system-software update Apple didn’t give away. You had to *buy* it, much to the fury of user groups and online services that had gotten used to making each new system release available to everybody. Backing down in the face of the protests, Apple eventually offered the System 7.1 upgrade kit to user-group and online service members for less than \$30. But the writing was on the wall: Apple was jealous of Microsoft, system-software superstore to the world.

Many wondered if the upgrade was even worth it. System 7.1 incorporated a huge number of changes, but the vast majority were deep-seated, core-level rewrites that added no usefulness to standard American Mac users. For example, System 7.1 *enabled* (but didn’t provide) foreign-language translations, using a technology called WorldScript. Along with that change came new control panels for “internationalizing” your Mac: Numbers, Date & Time, and so on.

Except for the QuickTime extension (see Chapter 23), the sole practical new feature of 7.1 was the Fonts folder. For the first time, all your fonts could be stored sensibly in one Fonts folder in the System Folder — instead of being buried in the System *file* or, in the case of printer-font files, scattered to the winds of your System Folder.

System 7 Pro (System 7.1.1)

System 7 Pro formalized Apple’s practice of throwing existing software programs into the System 7 box and calling it a new operating system. This October 1993 release, aimed at networked offices, was nothing more than System 7.1 with the addition of the utterly incomprehensible and prematurely hatched PowerTalk (see Chapter 32). It also included AppleScript and QuickTime (see Chapters 22 and 23, respectively).

Overall, the \$150 System 7 Pro was the least-exciting upgrade — as far as the individual Mac user was concerned — in memory.

System 7.1.2

This minor upgrade accompanied the first-generation Power Macintosh models. Despite what you may expect, it was *not* substantially rewritten in

“native” code to add a speed boost. In fact, only about 10 or 15 percent of the system was native — according to Apple, the parts that are used most frequently.

The physical signs of change were primarily in the new Memory control panel — that weird Modern Memory Manager setting — and its effects. For example, turning on virtual memory now let you lower your programs’ Get Info memory sizes, as you’ll see in Chapter 9.

Otherwise, 7.1.2 includes only subtle internal tweaks and remains, for all practical purposes, another spin on System 7.1.

System 7.1.2P

Don’t confuse this subtle variation on System 7.1.2 with System 7.1P2. The former is a special version of 7.1.2 that was released with the Quadra (and LC and Performa) 630 models. It’s a standard Macintosh operating system, essentially the same as System 7.1.2, but included on all 630-series machines, regardless of their designation as LCs or Performas. On the other hand, System 7.1P2 was a *Performa-only* version of System 7.1. See “Performa System-Software Annex,” later in this chapter, for details.

System 7.1.3

This system debuted with the PowerBook 500 series and merited the new number only in that it included some improved software — notably the Control Strip (see Chapter 4).

Here’s a little-known fact, however: A PowerBook 500 came with the equivalent of System 7 Pro. It was bundled with PowerTalk, QuickTime, and all of Apple’s usual goodies. We shudder to wonder if, having purchased a PowerBook 540c, anyone then went out and purchased System 7 Pro to use on it.

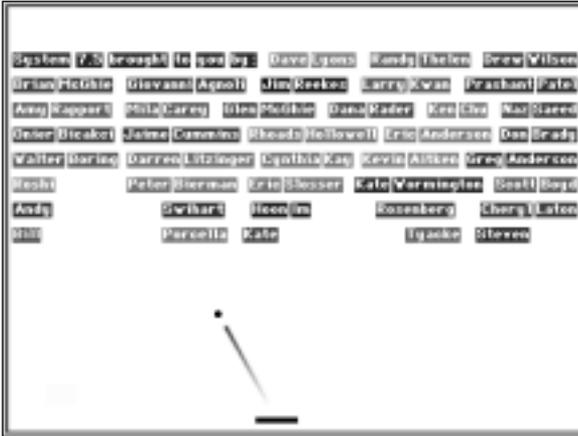
System 7.5

There wasn’t much surprise about the contents of System 7.5 by the time Apple released it in late 1994. The new “reference release” included dozens of truly useful new features, but most had been available in other forms before being incorporated into System 7.5. In fact, the only truly new, significant features from Apple were Macintosh Drag & Drop (see Chapter 1), QuickDraw GX (the new font and printing software — see Chapters 24 and 25), and Apple Guide (see Chapter 2).

MACINTOSH SECRET

APPLE'S BEST SECRET ABOUT BOX YET

In System 7.5, open any Drag-and-Drop-savvy program, such as the Note Pad or SimpleText. Type `secret about box`. Select the phrase. Drag it onto the Desktop, creating a Clipping file. The Note Pad disappears and is replaced by a game of Breakout!



Move the mouse to control your paddle; try to make the bouncing ball break through all the “bricks” containing System 7.5’s authors’ names. Click the mouse to return to your life already in progress.

To everyone’s horror, Apple removed this awesome secret About box in System 7.5.1 — but replaced it with something equally delicious in System 7.5.2.

Amazingly, though, the secret game of Pong lives on even in later versions of System 7.5. We’ll show you how to restore it in Chapter 21.

The most surprising new inclusions were shareware. Apple licensed a handful of popular shareware programs and adopted them as official system software. This must have come as a pleasant and remunerative surprise to their authors — the one-man operations who wrote MenuChoice, WindowShade, and SuperClock!, for example.

Added value

Apple also tossed in some utility programs that it had previously sold separately: PowerTalk network software (see Chapter 32), formerly available only with System 7 Pro; PC Exchange, the IBM disk-reading software (see Chapter 4); Macintosh Easy Open, which suggests applications capable of opening an

orphaned document (Chapter 4). For PowerBooks, System 7.5 made the Control Strip available (which had originally been included only with the 500 series) to all PowerBook models. System 7.5 included enhanced desk accessories, too: a new Note Pad, Scrapbook, Puzzle, and Find File command, for example.

The new General Controls panel offered several features that had debuted on the Performa line: a Documents folder that automatically collects new documents; System Folder contents protection; self-hiding Finder windows; and the Launcher one-click icon-launching pad. See Chapter 15 for details about these Performa features, and see Chapter 4 for Launcher tricks and tips.

Meanwhile, the Desktop pattern-editing features of the old General Controls panel were relegated to a stand-alone program called Desktop Patterns. (See Chapter 4 for details.) Another example: 7.5's Disk Cache (see Chapter 9) was rewritten to eliminate all the silly rules about maximum and optimum settings. In System 7.5, the higher you set the Disk Cache, the more speed your Mac will gain.

Deep-seated changes

All the new features mentioned so far took the form of extensions and control panels, which you could install or remove as you wished. Not every change was represented by a modular plug-in, however. Apple also made some substantive changes to the body of the system itself. For example, Apple incorporated into System 7.5 the bug fixes and updates of System Update 3.0 (see Chapter 5). It also added the purple window highlighting you see when, while dragging an icon from one window to another, your cursor moves inside the destination window (a nice touch introduced with System 7.1.3 with the PowerBook 500 series).

System 7.5, overall, didn't change much of the behind-the-scenes operating system at all; it was System 7.1 with fine-tuning. (Faster file copying and Trash emptying were among the subtle tweaks.) But the enhancements Apple *did* choose to include showed a great deal of thought and were beautifully done. As a result of this conservative approach, you didn't have much software-upgrading to do. Anything that worked with 7.1 generally worked well with 7.5, eliminating worries of another compatibility nightmare (à la System 7's introduction).

System 7.5, in fact, was probably disappointing to only two groups of people. Power Mac owners had hoped that Apple would rewrite the operating system to incorporate more "PowerPC-native" code (see Chapter 13). That crucial speed enhancement, Apple hinted, would not appear until the release of Mac OS 8. The upgrade was also disappointing to those users running

short of disk space or memory. System 7.5, particularly with QuickDraw GX installed, consumed substantially more RAM and hard drive than any system before it.

System 7.5.1 (System 7.5 Update 1.0)

Shortly after System 7.5 was released, Apple discovered more than a few nasty bugs that were in desperate need of patching. In the months that followed, Apple released a series of updated system components that fixed specific problems — EM Sound Update, PowerBook 150 Update, and Mount IDE Drive, to name a few. However, by March 1995, these patches started mounting up. To avoid more confusion, Apple's development team decided to roll the patches together, throw in a generous bundle of system enhancements as a bonus, and release the whole thing under one new name — the System 7.5 Update. (This later came to be known as System 7.5 Update 1.0.)

System 7.5 Update 1.0 was a four floppy-disk affair that dumped all kinds of updated components into your System Folder, swallowed up the chunks that were obsolete and, most significantly, officially upgraded your operating system to 7.5.1.

System 7.5.1 improved memory stability and fixed potential crash problems when pasting large blocks of data. It cleared up a weird problem in which double-clicking an alias on the Desktop opened the *wrong* original file. The update also cared for a number of model-specific issues. On the PowerBook 150, for example, it extended battery life by reducing the amount of power required in sleep mode. On the PowerBook 500-series, the update improved trackpad performance.

The update also introduced new and improved versions of many system components. File Sharing version 7.6.1, for example, eliminated the need to turn off file sharing in order to eject a removable disk or CD-ROM. Launcher version 2.7 added drag-and-drop support and a number of other slick Launcher features (described in detail in Chapter 4). There were also new versions of Apple Guide (rewritten in native PowerPC code), SCSI Manager, Speech Manager, PowerTalk Mailbox, General Controls, Apple Menu Options, Keyboard, WindowShade, MacTCP, Macintosh Easy Open, SimpleText, Find File, Stickies, PowerTalk Catalogs Extension, and the LaserWriter printer driver (updated to version 8.2). The update also gave most Macs the ability to be turned off with a press of the Power key.

Even the seemingly insignificant Jigsaw Puzzle desk accessory got an update, to version 1.0.1. (The 1.0 version released with System 7.5 evidently had sound problems caused by conflicts with certain third-party extensions.)

TRUE FACT**NOT ABOUT THIS MACINTOSH**

If you choose About This Macintosh (About This Computer) from the System 7.5 (or later)  menu, you may be in for a rude shock. That dialog box no longer specifies one prominent fact About This Macintosh — your Mac model. Instead, it just identifies the general class, such as Macintosh, Power Macintosh, or Macintosh PowerBook. (Actually, this is only true if you perform a “clean install” of System 7.5. If you install it normally onto a Mac running a previous system, your model information remains.)

Apple wrote System 7.5 to hide the model information because of changing times. For example, your About This Macintosh window used to extract the model information from a chip on your Mac’s motherboard. But, today, Apple builds the identical logic board into several different Mac models — for example, the Performa 6115 and the Power Mac 6100. Furthermore, Apple’s logic boards are now available in *other* companies’ Mac clones. In both cases, logic boards can no longer be trusted to accurately identify the model they once defined.

Of course, to find out your Mac’s model name, you *could* just read what’s painted on the front panel.

What System 7.5.1 *didn’t* offer, once again, was a significant rewrite of the operating system to PowerPC-native code. As of System 7.5.1, only three components of the operating system had been rewritten to take advantage of the speed of the PowerPC chip — QuickDraw, Modern Memory Manager, and Apple Guide.

Nevertheless, 7.5.1 was a substantial upgrade — a must-have for every user of System 7.5.

System 7.5.2

Five months after the System 7.5 Update appeared, Apple released the first Power Macs with PCI slots (see Chapter 31) and a new fleet of PowerBooks. Yet another update was needed to address the new hardware features on these models. The result: System 7.5.2. The only Macs capable of even running this operating system were the Power Mac 7200, 7500, 8500, and 9500 — and the PowerBook 5300 line (or 500-series PowerBooks with a PowerPC upgrade).

The release of 7.5.2 caused a lot of confusion. Hordes of Mac owners heard about 7.5.2 and scrambled to get what appeared to be another essential upgrade — the vital System 7.5 Update, which had converted System 7.5 to 7.5.1, evidently was still fresh on everyone’s mind — only to discover that *this* version of the System had absolutely nothing to offer most Mac owners.

Worse, the PowerBook and the PCI-Mac versions of 7.5.2 *weren’t the same!* To the horrified bewilderment of everyone everywhere, it became apparent that Apple had released two different, mutually incompatible operating systems *with the same name*. The world held its breath until the universalized 7.5.3 made its debut.

System 7.5.2 also got some bad press because of the number of bugs and quirks reported by users shortly after its release. Many users reported problems establishing PPP or SLIP access to the Internet using 7.5.2’s Open Transport networking scheme. Apple hastily churned out successive Open Transport patches — versions 1.0.6, 1.0.7, and 1.0.8 — to deal with the problem.

MACINTOSH SECRET

APPLE'S SECOND-BEST SECRET ABOUT BOX

When it really counts, Apple listens to its customers.

For example, when System 7.5.1 appeared without the famous System 7.5 secret game of Breakout (or Pong), as described in an earlier sidebar, Mac aficionados screamed bloody murder. Fortunately, in System 7.5.2, Apple came to its senses and put some fun back into the secret architecture.

Once again, the trick is to type the words **secret about box** into any Drag-and-Drop text program (such as SimpleText or the Note Pad), highlight those words, and drag them onto the Desktop. The secret picture now revealed is that of Apple's Cupertino headquarters. The QuickTime movie flag in the foreground reads, "iguana iguana powersurgius" (Power Surge was the code name for the PCI-slot Mac models; the secret movie is actually part of the ROMs in PCI Macs and was included in the System 7.5.2 software on PowerBook 2300s and 5300s.)

By moving the mouse, you can change the direction of the waving flag (move the mouse downward to draw the flag "toward" you, up for "away," and left or right). In fact, you can make it break off entirely, fluttering toward the ground and off the screen. (Whip the flag right and left or toward you and away; at just the right level of violence, the flag will break off.) Even when the flag is adrift, you can control its direction with the mouse. Meanwhile, various inside jokes scroll by.



As though to prove themselves totally apologetic for having interfered with our good, clean secret-About-box fun of System 7.5, Apple's programmers even added secrets *within* the secret About box. By pressing certain keys just after you begin dragging the words *secret about box* to your Desktop, you can make all kinds of strange things happen in your little hidden world:

Press letter P to see a picture of the design team, with an iguana, on the flag. (With System 7.5.3 and later, pressing P puts a picture of the Mac OS logo on the flag.) Press letter Q to see a pink flag, blank background, and a message that QuickTime must be installed. Press letter W for a dialog box that displays the current coordinates of the mouse. Press letter T for a dialog box that identifies your QuickTime frame rate (of the waving flag). Try pressing P, Q, W, and T in combination, too. The letter S prevents the scrolling names from appearing.

Despite the fact that this secret About box can't possibly remain a secret at Apple, the Powers That Be were good enough to let this gem remain; as of System 7.5.5, the great Cupertino Iguana flag flaps proudly still.

Oddly enough, this specialized system also required a new model-specific *enabler* and, in keeping with Apple's well-established tradition of giving enablers names that bear absolutely no relation to the Macs on which they are required, this new file was dubbed System Enabler 701. (It gets worse; the 7200 and 9500 require version 1.1 of System Enabler 701 version, while the 7500 and 8500 call for version 1.2.)

Probably the best news about System 7.5.2 was that it increased the maximum size of a volume that can be mounted on Mac from 4 gigabytes to 2 *terabytes* (the equivalent of 2,048 gigabytes), thus providing support for even more massive storage devices.

System 7.5.3 (System 7.5 Update 2.0)

After the disastrous confusion caused by its preceding System 7.5-point-something updates, Apple attempted to set the record straight in early 1996 with System 7.5.3. This was Apple's effort to reset the counter and establish a standard system supported by all current Mac models — no enablers needed. System 7.5.3 incorporated all existing enablers and system-software updates into a single package. Once again, several dozen little system bugs were fixed and a number of system components were replaced with new versions (among them Screen, Apple Modem Tool, PC Setup, Find File, Apple Video Player, Macintosh Easy Open, File Sharing, and the LaserWriter printer driver). A new QuickDraw 3D-capable version of SimpleText (1.3.1) appeared, and Monitors & Sound replaced the Sound & Displays control panel on PCI Power Macs.

Apple took advantage of this update as an opportunity to clean up its increasingly sloppy, sprawling, extension-ridden System Folder. The numerous little patches and updates Apple had been cranking out to fix specific problems in the months prior to the release of 7.5.3 were all merged into the System 7.5.2 Update file or the System file itself. Files such as 7.5.2 Printing Fix, 040 VM Update, 630 SCSI Update, CFM Updater, EM Sound Update, and Serial Update 406 were all eliminated. SCSI Manager 4.3 also was incorporated into the System file and terminated as a standalone extension. The Apple Multimedia Tuner became part of QuickTime 2.1.

But the new system was more than just a patch-up job; it introduced some fascinating refinements to the Mac operating system. For example, on a Power Mac running 7.5.3, when you drag an icon, it no longer turns into a simple outline as you drag it. Now a translucent, ghosted version of the icon remains visible as it is dragged across the screen — a fundamental change in the Finder's behavior. (Actually, this feature was originally conceived as a component of Mac OS 8, but was instead folded into System 7.5.3.) The

Name field in the Finder's list views got wider, permitting you to read more of your long-titled files' names.

System Update 2.0 also introduced Open Transport 1.1, Apple's revamped networking system software intended to replace the aging AppleTalk networking scheme. This version of Open Transport worked with all 68030 and 68040 Macs, as well as with all the Power Macs except, oddly enough, the 5200, 5300, 6200, and 6300 series.

Realizing that this new networking software was likely to be incompatible with plenty of existing programs, Apple tossed another odd little application into 7.5.3 — the Network Software Selector. This tiny program served one purpose — on non-PCI Macs, it let you *choose* between Open Transport and classic AppleTalk (provided that you had the older networking software on your Mac before installing the system update). Network Software Selector installed or deinstalled the appropriate suite of extensions and control panels, depending on which networking scheme you chose. If your dial-up Internet connection suddenly stopped working when you installed Open Transport, you could simply switch back to the old networking software and use that to configure your network connections.

Another noteworthy change: Under 7.5.3, for the first time in Mac history, you can rebuild the Desktop file without destroying any comments typed into a file's Get Info box. The new system also speeds up Finder copying (eliminating some of the advantage of copy-acceleration programs such as CopyDoubler) and comes with text files that describe every extension and control panel in the System folder.

The Memory control panel got smarter, too, automatically adjusting the default value for the Mac's disk cache based on the amount of physical RAM installed. (The default is 32K for each meg of RAM, up to 4,096K.)

Finally, the new system introduced more components written in native PowerPC code to speed up Power Mac models. The Resource Manager was rewritten in native code, as was the software that controls the serial ports. Desktop Printing software also was released in completely native PowerPC form.

Other 7.5.3 improvements included a new, faster version of Apple Guide (version 2.0); an improved, more reliable Apple Menu Options control panel; and, at last, a version of the Control Strip for all Macs, not just PowerBooks.

System 7.5.3L

Virtually identical to System 7.5.3, this variation was created specifically for Macintosh clones. Mac-compatibles from companies such as Power Computing, UMAX, and Daystar all shipped with 7.5.3L systems.

ANSWER MAN

The many faces of System 7.5.3

Q. *What's the difference between System 7.5.3 and System 7.5 Version 7.5.3?*

A. Congratulations. You've just discovered that Apple has two different names for exactly the same system. Try to follow the logic here: System 7.5 Version 7.5.3 is the name of the *software* Apple sold to people who wanted to upgrade to System 7.5.3 from a version of the system prior to System 7.5. On the other hand, System 7.5.3 is what actually appears in the About this Macintosh window of desktop Macs that *shipped* with System 7.5.3.

Q. *OK, so then how come, on my Mac, the About this Macintosh window says I'm running System 7.5.3 Revision 2. But on my friend's Mac, the About this Macintosh window says he's running System 7.5.3 Updated to Revision 2. Who's got the newer system?*

A. Again, they're identical. The only difference: Your Mac came with the revised version of System 7.5.3 pre-installed, while your friend upgraded his copy of System 7.5.3 using the System 7.5.3 Revision 2 updater.

System 7.5.3 Revision 2

In the months following the release of System 7.5.3, Apple released a couple of minor patches and updates — items so minor they didn't even earn a version number. Within a short time, however, the bug reports came pouring in and it became obvious that some larger updates were necessary to address problems that were cropping up on PCI Power Macs and PowerPC-based PowerBooks.

Thus was born System 7.5.3. Revision 2 — the first of what Apple dubbed its “rapid response updates” to address problems discovered between major system releases. (The “2” was chosen, by the way, to reflect the fact that earlier patches of 7.5.3 *did* exist, though there was never a Revision 1.) Revision 2 was a two-disk upgrade released to fix a few select problems on specific models — the PowerBook 5300 and Duo 2300 systems; any PowerBooks (PowerPC or otherwise) running Connectix RAM Doubler; any PowerBook 200 or 500 models that had been upgraded to PowerPC; and all 7200, 7500, 7600, 8500, and 9500 systems. Revision 2 doesn't do a thing on any other models, except change the name of the operating system to “System 7.5.3 Updated to Revision 2” — yes, that's the *name* of the system that appears in the About This Macintosh box.

Apple distributed the update for free via the Internet. You could also buy the update on floppy disks or CD-ROM direct from Apple for \$13.

Unfortunately, this update resulted in even more confusion among thousands of Mac users, who understandably mixed up System 7.5 Update 2.0 (which installed System 7.5.3) with System 7.5.3 *Revision 2*. Macintosh experts and columnists (such as your cheerful authors) had to refer to cheat-sheets to claw their way through comprehending Apple's system-software version stew, praying that Apple would come to its senses and start getting its version act together.

Still, Revision 2 did, at the very least, re-establish a standard system for all Macs.

System 7.5.3 Revision 2.1

Just when it seemed that Apple had again unified the operating system and come up with a version that worked on all Macs, along came the Performa 6400 — a 200 MHz, PowerPC 603e-based minitower. The 6400 required a new version of LocalTalk DMA in order to transfer files across a network properly, and a video driver patch to fix a problem that occurred — get this — when the computer went into sleep mode while connected to a 15-inch monitor. Apple had no choice at this point but to release a revision of the revision of the update to accommodate these tiny changes.

At any rate, the obscure System 7.5.3 Revision 2.1 was only for the Performa 6400/200 and 6400/180 — no other models were affected.

System 7.5.4

Apple planned to release System 7.5.4 in September 1996. Once again, the objective was to create a standard, universal system that would work with any Macintosh. Primarily, the new system was supposed to make PowerPC-based PowerBooks and PCI Power Macs more stable and reliable. It was also supposed to improve memory management and boost performance when using virtual memory.

However, just after limited, pre-release distribution of System 7.5.4 began — and literally just *hours* before the moment of the system's official release — a glaring bug was discovered that created problems with the 5400 and 6400 models. Apple frantically pulled System 7.5.4 from distribution and canceled its release.

System 7.5.5

The day after System 7.5.4 was canned, Apple patched it up and released it with a shiny new version number — 7.5.5. Apple recommended this update was for *all* System 7.5.3 users, but it didn't contain any new features or interface changes.

ANSWER MAN

How to install System 7.5.3-anything

Q: *Auuuugggh! I've had nothing but trouble since trying to install System 7.5.3!*

Q: *Grrrr! My installation of System 7.5 Update 2.0 froze and now my Mac won't boot!*

Q: *@#*&\$)(*!)(*!! I can't get System 7.5.5 installed!*

A: Clearly, none of you folks bothered reading the instructions for installing Apple system-software updates happily. Turns out you're supposed to do so *after first doing a clean installation* of whatever you had before.

See Chapter 33 for details on doing a clean install; for now, suffice it to say that you'll probably have no troubles installing these various updates over a clean installation of, say, System 7.5.3.

And remember our general advice for updating your System folder, too: Before doing so, run Disk First Aid (described in Chapter 33) and make sure your hard-disk drivers are up to date.

System 7.5.5 was largely about improving the stability of Power Macs and PowerPC-based PowerBooks. For example, it eliminated one of the problems that was causing newer Power Macs to lock up when accessing a hard disk. It also improved the reliability of the higher performance Power Macs — those with 604 or 604e chips that run at 180 MHz or faster — particularly when formatting floppy disks.

For all models, System 7.5.5 made virtual memory work better, speeding up the time it takes to launch big programs, switch between programs and switch between large documents within a program. (It also made virtual memory more reliable when used over an Ethernet network.) On Power Macs, the update improved memory management and eliminated at least one cause of Type 11 errors.

The update's other fixes were fairly minor and specific. It improved reliability when using floppy disks on a Mac equipped with a DOS Compatibility Card; made some improvements in LocalTalk; improved the stability of the Apple TV Tuner and Macintosh TV Remote Control; helped with sound performance on Quadras and Centrises equipped with a PowerPC Upgrade Card; and made shared printers more stable.

The biggest news about 7.5.5 is that it allowed you to create a universal System Folder — one that can start up any Mac, from the Mac Plus to the Performa 6400. This system represented a watershed of sorts for older models, too. It was the last system Apple ever released that can run on Macs without built-in 32-bit addressing (see Chapter 9): the Mac Plus, SE, Classic, Portable, PowerBook 100, original SE, SE/30, LC, II, IIx, and Iicx.

(Mac clone-owners' note: Interestingly, System 7.5.5 does *not* necessarily work correctly on the 1996 wave of Mac clones, those that came with System 7.5.3L. Apple suggests you contact the manufacturer on an upgrade-by-upgrade basis to see if your clone will run subsequent OS revisions.)

The OS That Wasn't: Copland

Even as System 7.5 began shipping in 1994, Apple was promising its customers something better — much better. Within a year, Apple intended to release its biggest and most dramatic rewrite of the Mac OS in history. Code-named Copland, this version of the Mac's system software would be designed exclusively for the Power Macintosh, with almost every key component written in native PowerPC code. Copland was to take a new approach to memory management and multitasking that would let your Mac perform several functions simultaneously without running into memory problems.

However, it soon became obvious that Apple's engineers had bitten off more than they could chew. Copland's release date was repeatedly pushed back, first to the end of 1995, then to the middle of 1996, then to the end of 1996, and

eventually to the end of 1997. In the meantime, Apple started calling this still-nonexistent operating system by its official name — Mac OS 8.

With millions of customers growing impatient for the benefits of a more modern operating system, Apple finally got radical: it canceled the Copland project. Instead, Apple decided to purchase an existing OS — the Next OS, in fact, as you'll find out later in this chapter. In the meantime, however, Apple promised to continue developing the System 7 family in a series of incremental upgrades, six months apart, each with a few of the features originally promised to arrive in Copland. These four OS revisions were code-named Harmony (now Mac OS 7.6), Tempo (now Mac OS 8), Allegro, and Sonata.

Mac OS 7.6 (Harmony)

The first of these incremental releases, code-named Harmony, finally arrived in January 1997 — officially called Mac OS 7.6. To the disappointment of many, this release did not include any Copland-derived features. However, Mac OS 7.6 did offer a dramatic leap forward in speed and stability — which are big features indeed, in our book (and it *is* our book). Mac OS 7.6 Macs start up much faster than Macs running previous system versions — extension startup icons seem to fly by — and programs launch more quickly, too.

Mac OS 7.6 consists primarily of an enormous multi-megabyte compilation of previously released software:

- The latest LaserWriter 8.4 drivers, including the Desktop Printing features described in Chapter 25
- America Online 3.0 (see Chapter 28)
- QuickTime 2.5 (see Chapter 23)
- QuickDraw 3D (see Chapter 20)
- Open Transport 1.2.1 (see Chapter 32)
- Open Doc 1.1 (see Chapter 16), including a starter set of LiveObjects (OpenDoc components)
- Cyberdog (see Chapter 28)
- Apple Telecom 3.0 software (see Chapter 27)
- PlainTalk 1.5 and Text-to-Speech 1.4.1 (see Chapter 23)
- Apple Remote Access 2.1 Client (see Chapter 32)

TRUE FACT

REACH OUT AND UPGRADE SOMEONE

By the time you read this, Apple will undoubtedly have released system upgrades, updates, patches, and revisions that aren't listed here. If you want to get your hands on the latest system software updates — or any of the *older* operating systems, patches and updates described in this chapter — you can get them for free over the Internet at <http://www.support.apple.com> or <http://www.info.apple.com>. (See Chapter 27 and Chapter 28 for more about downloading software over the Internet.)

- PC Compatibility Setup 1.5 (for Macs with DOS cards)

In addition, Mac OS 7.6 offers behind-the-scenes OS support for multiprocessor Mac models, such as the “MP” models from Apple, Daystar, Umax, and others.

But we’re not saying this OS version offered no new features, just no dramatic ones. For example, this OS version came with:

- A newer, more sophisticated Extensions Manager (see Chapter 4).
- A smarter Installer that walks you through the safety checks you were previously told about only in Read Me files: running Disk First Aid, updating your hard drive driver, and so on (see Chapter 5 for an illustration).
- A new Speech 1.5 control panel that you can configure to *speak* the messages displayed in dialog boxes after a moment or two — in case you’ve dozed off, we suppose. (Open the Speech control panel and choose Talking Alerts from the popup menu.) You can have it preface the contents of the error message with any of several hilarious attention-getting utterances, like “Yeow!” or “Blast!” or, our personal favorite, “It’s not my fault!”
- Our one and only Mac OS 7.6 Secret: In previous System versions, you could press ⌘-Shift-3 to take a full-screen snapshot, producing a PICT graphics file. (See Chapter 2 for details.) Beginning in this OS version, however, you can press ⌘-Shift-4 instead; your cursor becomes a crosshair, which you can drag over any area of the screen to create a less-than-full-screen snapshot.
- And get this: add the Caps Lock key, and you can click inside a window or dialog box to get a snapshot of just that window or dialog box. Those lucky, lucky Macintosh book authors!

Mac OS 8 (Tempo, aka System 7.7)

The first real Copland goodies to hit Mac fans’ hard drives were postponed until the summer of 1997, in the biannual OS update called Mac OS 8. (This version was code-named Tempo; was originally going to be called System 7.7; and was finally renamed Mac OS 8, to the confusion of Apple-watchers who thought that *Copland* was going to be OS 8.)

The most dramatic change in Tempo is the rewritten Finder. This new headquarters for your data is PowerPC-native (in other words, *fast* on any Power Mac); multi-threaded (can be copying files while you launch other programs); and dramatically different in appearance, giving the desktop a sleek, futuristic facelift.

Here’s what Mac OS 8 offers the Mac faithful. (We’re writing this based on a pre-release version of the OS; some details may change in the final version.)

MACINTOSH SECRET**THE ULTIMATE GUIDE TO UPGRADING SOFTWARE**

As you probably know, buying a program is more like *subscribing* to something than owning it, because every year, you get some brochure in the mail cheerfully pointing out that the version *you* bought is now obsolete. Upgrading Macintosh software is an art unto itself — not nearly the all-weekend nightmare it is on other computers, but still a project.

Most companies, including Apple, label their software updates according to this scheme:

Double-decimal-point upgrades: The Double-Decimal-Point Upgrade is when a company updates the software in such a minor way that the program's number changes from, say, version 1.5.1 to version 1.5.2. (Don't ask us why the second decimal point is even necessary.) Such a tiny tweak in the number generally signifies that the new version offers no *new* features. Instead, it's only a cleaned-up (less bug-ridden) version, or it's just been updated to be compatible with some new Mac model or new System-software update.

Certain kinds of software are especially susceptible to frequent tiny updates of this kind: fax software (especially Global Village), screen-saver software (especially After Dark), virus software, and other enhancements (especially ATM, RAM Doubler, and Speed Doubler).

Fortunately, a Double-Decimal Upgrade is almost always free. In fact, it's almost always available for free *electronically* — you can download a little updater program from America Online or the Internet. After this updater whirs and clanks for a moment, you wind up with a single, updated version of the program in question. Documents you've created (for example, ClarisWorks files) aren't affected by a Double-Decimal Upgrade.

The software companies, unfortunately, generally don't tell you when they release these tiny upgrades. They might not even change the version number. For example, ClarisWorks 4.0 was been silently updated several times — “4.0v1,” “4.0v2,” and so on — and the only way you'd know that a newer version exists would be by calling the company. Microsoft, Intuit, and other companies operate similarly.

Therefore, your sources of info are Mac magazines and newsletters, user groups, and online gossip.

Major upgrades: Then there are the meatier upgrades, where the number *immediately* to the left or right the decimal point changes (from 3.3 to 3.4, for example, or from 3.0 to 4.0). You generally have to pay for these, and the program's document format may change.

Unfortunately, “downgrades” are becoming increasingly common; the new versions of some programs are so huge, bloated, and sluggish that they're not worth getting (see Word 6, for example).

System-software upgrades: In many ways, upgrading your Mac's System Folder is much like upgrading any other software. As with other software, finding out that such updates are available isn't necessarily easy, although Mac magazines *always* have articles about this kind of thing.

Whenever you install new system software, restart your Mac from the System CD-ROM (or the Disk Tools floppy) that came with your computer. On that CD-ROM (or Disk Tools disk), you'll find Disk First Aid. Running this little program before you install new System software is an excellent idea. It locates any little kinks or potholes that have developed on your hard drive's surface that could corrupt your new System folder.

As with any installation, you should start up the Mac with the Shift key pressed (until the screen says “Extensions off”) before installing new system software.

Apple's system updates generally give your Mac better speed, fewer crashes, and a couple of juicy new features. Unfortunately, these updates sometimes also mean that all your *other* programs may need updating to work with the new System software. The software you need to worry about mostly are the extensions and control panels: RAM Doubler, Speed Doubler, fax software, After Dark, ATM, virus checkers, printer drivers (Chooser icons), and programs of their ilk.

Cosmetic overhaul

Mac OS 8 has a whole new look, filled with 3-D surfaces, a new font called Truth, and a new generic folder icon. (To see this look for yourself, install the Aaron extension included with this book.) Giving the Mac a new visual look is a shrewd move on Apple's part; if you ask us, the geeks can talk about multi-

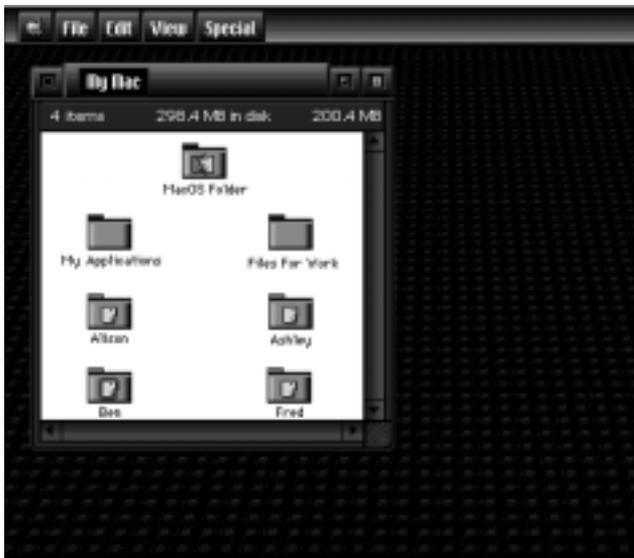
threading and multi-whatever until they're blue in the face, but the press and the public will be more impressed by a snazzy exterior any day.

Mac OS 8 also takes the concept of customizing your Mac's look far beyond creating your own Desktop pattern. Using the new Appearance Settings control panel, you can choose an accent color for the scroll-bar "elevator" boxes and the progress bar you see when you copy files; and using the new Desktop Pictures control panel, you can fill your desktop with not just a repeating pattern, but even a full-screen PICT file if you wish. (Of course, *Mac SECRETS* owners can do this already, using the Décor program included with the book — but now it's built in.)

The Appearance Settings control panel also lets you change, for the first time in Mac history, the font used for menus and dialog boxes; goodbye, Chicago, goodbye. This control panel also incorporates the old WindowShade control panel (described in Chapter 4). Actually, the original plans for Copland called for even more customization. Using a multi-user feature, each user would be able to save a custom look as a *workspace* — and restore all the styles, colors, fonts, and patterns associated with that look simply by logging in under a specific user name. (See Figure 6-4.) A set of predefined looks, called

Figure 6-4

Apple's "themes" feature didn't make it into Mac OS 8, but will surely surface in one of the subsequent OS updates. You'll be able to make your Mac look like almost anything, from a black, sleek, hi-tech, glossy machine to a kids' playhouse. (Courtesy Apple Computer, Inc.)



themes, were to be available. We're guessing that this switchable “themes” feature will surface in one of the 1998 OS upgrades.

Handy desktop featurettes

If you check out Figure 6-5, you'll see that Apple's overhaul of the Finder goes beyond pure looks. A new, very thin gray border surrounds every window in every program; it's a drag strip that lets you move that window without having to use its title bar. Similarly handy desktop features include:

- **Spring-loaded folders:** When you drag an icon on top of a folder, and you keep your finger pressed on the mouse button, the folder springs open into a full window, allowing you to drop a file directly into a deeply nested folder. Using this technique, you can actually place an icon into a folder within a folder within a folder — with a single drag. (When you release the mouse, all the windows you've opened snap shut again.)

You turn this feature on or off using the new Finder Preferences command in the View menu — where you can also find the Simple Finder command, which reduces the Finder's menus to the bare technophobe-friendly essentials, like Empty Trash and Shut Down. (No aliases, labels, sleep, or other commands.)

- **Stay-open menus:** If you click the title of a menu in Mac OS 8, the menu drops down — and *stays* down, all by itself. At this point, you can click a menu item to choose it, or click anywhere else on the screen to close the menu. The beauty of this system is that if you prefer the old way (where you have to keep the mouse button pressed to hold the menu open), you can still use it.
- **Stay-sorted icon views:** You can now use the View menu to sort your *icon views* by date, or size, or whatever — you no longer need our hold-down-Option-key-and-choose-Clean-Up trick to accomplish this. What's more, you have the option (in the Icon View Options command) to make them *stay* sorted, even if you add or take away icons to the window.
- **Collapsible windows:** Any window can be dragged to the bottom of the screen, where it becomes a small button-like tab (see Figure 6-6). When you click the tab, it pops up like a Pop-Tart or an old cash-register “no sale” flag — that is, still

Figure 6-5
Using the new As Buttons command in the View menu, you can view the contents of a window as Launcher-like buttons; one click, not two, opens the icon.



Figure 6-6

Highlights of the improved Mac OS 8 look. The Chicago font has been replaced by an Espy Sans-font cousin called Truth. Icons have a 3-D look, you can pile up multiple copying jobs, and you can collapse any window into a "tab" that hugs the bottom edge of the screen — until you click the tab to make it turn back into a window.

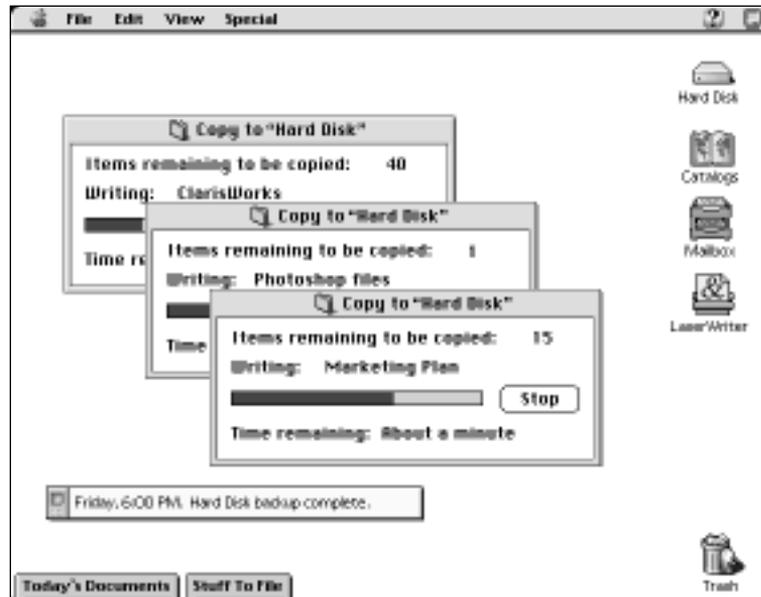
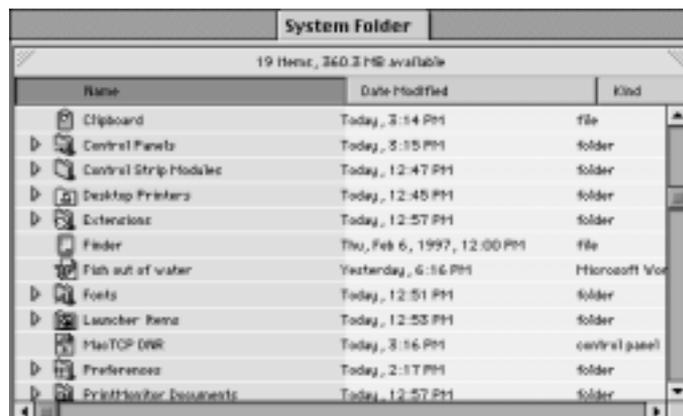


Figure 6-7

Mac OS 8's list views have a clean, high-tech grayscale look. In the View menu, a List View Options command offers the "Relative Dates" option, which uses words like "Today" and "Yesterday" to show file-modification dates.



attached to the bottom of the screen, and still with a title “tab” at the top (so you can re-close it), but the full contents are visible.

- **Contextual pop-up menus:** Throughout the Finder, you can invoke pop-up menus that list the commands you’re most likely to need. (See Figure 6-8.) To make the menu pop up, you hold down the Control key as you click something. Our fave: the Move to Trash command (appears when you Control-click an icon). No more dragging an icon across 21 inches!

- **Finding by content:** A beefed-up Find function makes it easier to search for files based on their *contents*. For example, you’ll be able to locate all Excel spreadsheets on your hard drive that contain both the words “mackerel” and “barium.” The Find function will rank the results in order of their relevance to your search criteria. (See Figure 6-9.)
- **Integrated Internet:** For the first time, the Apple menu offers a Connect To command. Choose it, type any Web or Internet address into the dialog box, and press Return — you’re online. If there’s any smarter or easier way to integrate the Net with the OS, we don’t know what it is.
- **Multithreading:** Now the Finder can really, truly do two things at once. You can get several things copying simultaneously (farewell, Speed Copy and CopyDoubler!) — and *then* launch a program as the copy continues, without any dramatic loss in speed. Nice.

Rhapsody and Next

Rather than build such an operating system from scratch, at the end of 1996, Apple finally decided to buy one. After rejecting the Be OS as fledgling, incomplete “demoware” (as one Apple buddy of ours called it), Apple paid \$400 million to acquire Next Software (the company owned by Apple’s founder and former chairman, Steve Jobs). Apple announced that the 1998 Mac OS would be based on Next’s highly stable OpenStep, a UNIX-based OS that offers the vital technologies that everyone had been waiting for years to see in Copland, such as memory protection and preemptive multitasking (described later). The only catch: The current version of OpenStep doesn’t run on the PowerPC chip. Apple engineers indicated it would take at least a year to complete a PowerPC-compatible operating system based on OpenStep.

That operating system, code-named Rhapsody, isn’t due to appear until early 1998. The Rhapsody Premier Release will run on all Power Macs and have a familiar Mac-like interface. Furthermore, all your existing System 7 software will run,

Figure 6-8
Contextual menus offer you a choice of the most frequently used commands throughout the Finder.

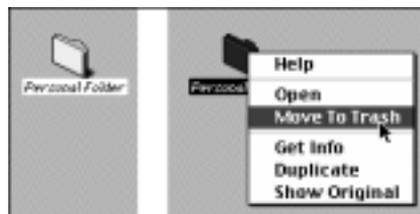


Figure 6-9

This is Finding as it was meant to be: You can search for a file based on any combination of words found within it. The list of found items are ranked according to how relevant they appear to be to your search criteria.

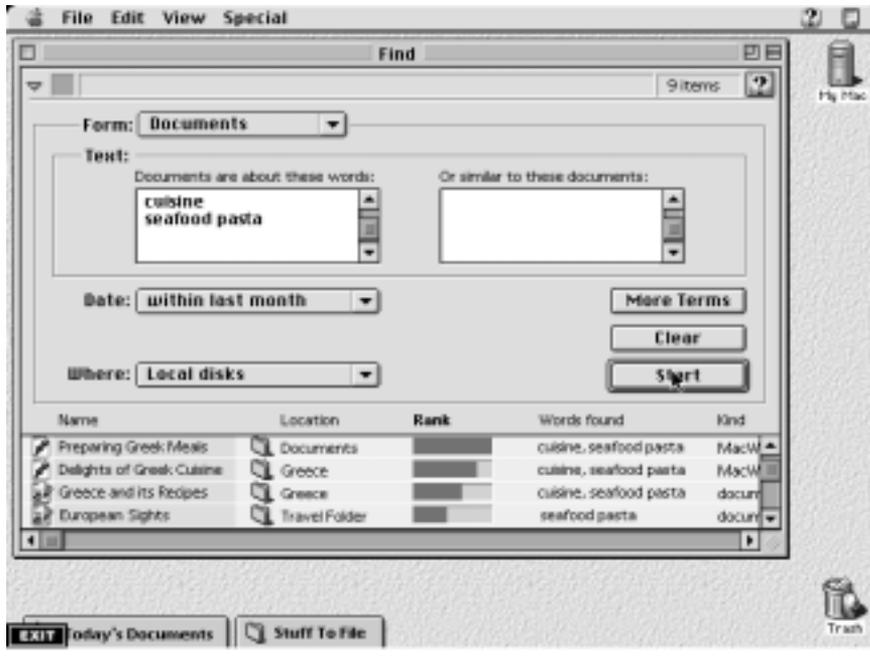
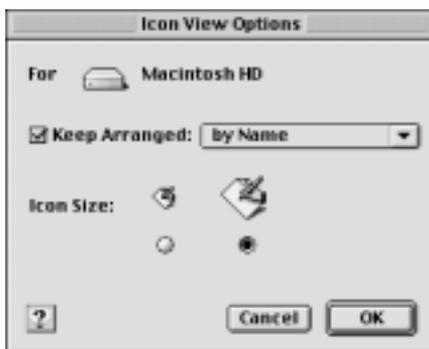


Figure 6-10

Mac OS 8's new Icon View Options lets you specify how you want icons to be arranged in a certain window — always. If you drag new icons into this window, they'll fall into correct sorting position.



and run fast, but they won't be able to tap into all of Rhapsody's advanced features. The Rhapsody *Unified Release*, later in 1998, will improve compatibility with existing System 7 software, and it will include Next-savvy versions of QuickTime, ColorSync, and other hit Apple technologies. Of course, the real power of Rhapsody will emerge when software companies release programs written specifically for the Rhapsody OS, taking advantage of the system's modern features.

And what are those modern features? Here are some of the features that make programmers call the Next OS “multi-everything” and “buzzword compliant”:

- Protected memory:** The OS will allow each program to access and manipulate only the specific chunk of RAM allocated to it; any other available memory — the RAM being used by the system itself, for example — is protected. By strictly protecting each program's

memory allocation, the OS makes it less likely that the crash of one program will bring down the entire system.

- **Preemptive multitasking:** Suppose you have several programs running on your Mac simultaneously. Ordinarily, each program tries to grab whatever CPU processing cycles and memory it can to carry out its tasks. The resulting conflicts are generally what cause those “application unexpectedly quit” messages. The new system architecture prohibits programs from competing with each other for resources, however, by preempting the requests of each individual program. It systematically controls the switching between tasks that require attention and stands between applications that would otherwise be grabbing for the same resources at the same time.

Our take on all this? It was confusing for awhile, but now Apple seems to be on a solid track. The OS updates have been on time and a joy to use, and the early prototypes of Rhapsody indicate even more exciting things to come. We have no doubt whatsoever that the final release of Rhapsody will make Windows 95 look like System 6 — even more than it does today.

BEYOND THE MAC OS

Of all the new features and enhancements originally promised to arrive in Copland (or in Gershwin, the code name for the system once expected to follow Copland), the ones that count the most are preemptive multitasking, protected memory, and, of course, a system written entirely in native PowerPC code. Those features, taken together, would result in a huge speed boost and a dramatically more stable operating system — certainly, the best operating system ever to run on a Mac.

Incredibly, a system with all of these features already exists. It’s called the BeOS, and it was developed by Be, Inc., a company under the leadership of Jean-Louis Gassée, the former president of Apple Products. The BeOS is 100 percent PowerPC native, offers full preemptive multitasking and protected memory. In short, it has all the vital technologies everyone’s been waiting for years to see in Copland.

One small problem with the BeOS — it can’t run *any* Macintosh programs. It runs on the PowerPC *chip*, but it’s a completely different operating system from top to bottom.

Nevertheless, many software companies feel it wouldn’t be too difficult to create a Mac-compatible version of the BeOS. By the end of 1996, rumors were swirling about negotiations between Apple and Be, Inc., with the goal of licensing the BeOS and using it as the foundation of a future Mac operating system.

PERFORMA SYSTEM-SOFTWARE ANNEX

As we describe in Chapter 15, the original Performa line of Macs differed from their mainstream counterparts primarily in their system software. There was never as much black magic to these special “P” system versions as most people thought — the “P” versions ran on mainstream Macs, just as non-P versions run on Performas.

Today, of course, there’s no longer any differentiation between Performa system software and mainstream Mac System Folders. That’s why we’ve removed our comprehensive Performa System Software Annex from this chapter; there’s simply no such thing as a Performa operating system any more.

If, for some reason, you still need to know the difference between System 7.1P3 and System 7.1P4, we’ve included the complete Performa System Software Annex on the CD-ROM that came with this book.

THE *MAC SECRETS* GUIDE TO APPLESPEAK

The Mac started out easy — there was a System file, a Finder, and a tiny handful of other files you had to know about to create and print documents. That was it. No OpenDoc. No CyberDog. No PowerTalk.

But as the Mac has grown more complex, so has Apple’s terminology. In fact, Apple has pumped out so many system components and given them so many similar-sounding compound names (AppleLine, AppleLink, AppleMail, AppleNet, and so on) that the terms have practically become a language unto themselves. We call it “AppleSpeak.” It can be as incomprehensible as Swahili.

For example, if you consult Apple’s official list of trademarks and service marks — an eight-page catalogue of more than 300 items — you’ll find listings for HyperCard and HyperTalk, as well as HyperAgent, HyperBrowser, HyperClient, HyperKiosk, HyperKnowledge, HyperLearning, HyperMover, HyperReader, HyperScan, HyperTelevision, and HyperTV. Even Apple’s own public-relations staffers couldn’t tell us what half this stuff was.

Then there’s the Quick series: We all know about QuickTime, but did you know Apple also markets QuickClips (a CD-ROM with multimedia content), QuickRing (a data-transfer system), QuickStart (VAR program), QuickTake (digital camera), and QuickFile (an application, but we don’t know what it does)?

Like it or not, you have to master at least *some* AppleSpeak to know what's going on in the Mac community. So here's a quick guide to the AppleSpeak jargon you're most likely to encounter if you drop into an Apple dealership or pick up a copy of *Macworld*.

Apple Guide — The online, step-by-step interactive help system introduced in System 7.5.

ApplePrice — For years, computer-product list prices were a joke. Nobody ever paid retail price. In an attempt to make more sense out of the pricing system, and to compete with PC clones, Apple created this new pricing system for all of its products, which better reflects actual street prices.

AppleScript — Apple's scripting language that lets you write scripts to automate various Mac functions. (See Chapter 22.)

AppleSearch — A text-archiving and retrieval program that automatically extracts text from documents on a network, pours the information into a central database, and then allows network users to retrieve specific documents.

AppleShare — A system-software extension that allows you to access other Macs across a network. (See Chapter 32.)

AppleTalk — The networking language used by Macs to communicate with other devices on a network. AppleTalk is built into every Mac.

Cyberdog — Apple's integrated suite of Internet tools. CyberDog provides one unified interface for a World Wide Web browser, e-mail reader, Newsgroup handler, Gopher browser, and FTP client. (See Chapter 28.)

EtherTalk — Another networking language that can be used by Macs to transfer data between devices. (See Chapter 32.)

GrayShare — The networking/grayscale technology used with Apple's QuickDraw-based printers, such as the StyleWriter II. The "gray" part of GrayShare refers to the printer driver's ability to print grayscale halftones on a non-PostScript printer. The "share" refers to the fact that GrayShare-driven printers can be shared over a network. (There's also such a thing as ColorShare, included with the Apple Color Printer.)

HyperCard — A software construction kit that lets you use a basic programming language, HyperTalk, to build your own programs. (See Chapter 23.)

HyperTalk — The programming language used within HyperCard (see preceding entry).

KanjiTalk — The Japanese operating system for the Mac.

Live Objects — The individual parts or components that make up a document under Apple's OpenDoc technology. (See "OpenDoc," later in this chapter, and Chapter 16.)

LocalTalk — The hardware — wires, connectors, cables, and so on — used to connect Macs together in a network. AppleTalk is the name of the protocol the Mac uses for networking, AppleShare is the actual extension that enables AppleTalk to operate, and LocalTalk describes the stuff you actually plug in to make it happen.

MacroMaker — A basic (and now out-of-date) macro program that Apple included with most versions of System 6.

Moof — The official Apple-owned sound emitted by the Dogcow (yes, another Apple trademark), the Holsteinlike canine that appears in the Page Setup Options dialog box.

OneScanner — Yes, this is OneWord, NotTwo, and it refers to Apple's own brand of flatbed scanners for the Mac. Ironically, there are *two* OneScanners: a grayscale model and a color model.

OpenDoc — Software that lets you access the features of one program — say, a spreadsheet — from within another program. OpenDoc enables you to combine the components of several different programs — called Live Objects — into a single document without having to individually launch and quit each of the programs. (See Chapter 16.)

Open Transport — Apple's latest networking scheme that provides a consistent interface and set of guidelines for setting up networking services and communications protocols. (See Chapter 32.)

PlainTalk — The speech-recognition technology built into the AV Macs that lets you issue commands by speaking into a microphone.

PowerLatch — The docking mechanisms that connect PowerBook Duos to MiniDocks and Duo Docks.

PowerPC 601, 603, 603e, 604, 604e — The specific chips — designed by Motorola, Apple, and IBM — that serve as the main processors in the Power Macintosh series. In general, the higher the number, the faster the chip — except for the 603, which is smaller, less power-consuming, but on par with the 601's speed.

PowerShare — The application that allows PowerTalk to operate from a central server (see the next entry).

- PowerTalk** — A now abandoned set of system software modules, included with some Macs and system versions, that attempts to integrate networking, e-mail, and telecommunications into a single interface. (See Chapter 32.)
- QuickDraw** — The behind-the-scenes core programs that the Mac uses internally to draw graphics on your computer screen.
- QuickDraw GX** — Apple's upgrade to QuickDraw. While traditional QuickDraw is geared toward representing images at a relatively crude screen resolution of about 72 dots per inch, QuickDraw GX supports high-resolution output to printers. It also makes it easier to select a Mac printer when sending a print job and it handles printing faster than QuickDraw. (See Chapter 25.)
- QuickDraw 3D** — a system extension for creating and displaying 3-D graphics. It lets you do workstation-level 3-D modeling on a Power Mac. (See Chapter 20.)
- QuickTake** — Apple's low-cost digital camera.
- QuickTime** — A system extension that enables you to play, edit, and compress movies and sounds on the Mac.
- QuickTime VR** — A new variation on the original QuickTime technology that lets you rotate your view of a photographic-quality scene a complete 360-degrees. (See Chapter 23.)
- ResEdit** — Apple's resource-editing utility program. You can use ResEdit to customize programs by editing the menus, dialog boxes, sounds, pictures, and icons found within applications. (See Chapter 21.)
- TokenTalk** — A networking language for high-traffic networks that can be used by Macs to transfer data between devices. Macs using TokenTalk (which is installed as a system extension) have to be equipped with Token Ring hardware.
- WorldScript** — A feature included in System 7.1 and later that allows you to convert your Mac to a foreign language by installing a foreign language keyboard script into the System file.
- Zeal** — In Apple parlance, this is not a fervor or passion for something, but merely the name of a TrueType font.
- Zhong-WenTalk** — The Chinese operating system for the Mac. (You probably won't encounter this bit of AppleSpeak too often, but it's kind of neat to know, isn't it?)

ANSWER MAN

Q: *Can you, in 100 words or less, explain the difference between all the different System 7.5.3 versions?*

A: No.

To do that, it takes a huge table. We're happy to oblige. Here's a list of the 11 different OS versions between System 7.5 and System 7.6. The left column lists what it might say in your About This Macintosh dialog box. The right column shows how you got there.

About This Macintosh says:	How you got it:
System 7.5	Sold commercially. Also came installed on new Macs.
System 7.5.1	Start with System 7.5, then install System 7.5 Update 1.0 (a free multi-disk installer set).
System 7.5.2	Came installed on new PCI Power Macs. A different version came on PowerBook 190, 5300, & Duo 2300 models.
System 7.5.3	Came pre-installed on some desktop Macs.
System 7.5.3L	Came pre-installed on Mac clones.
System 7.5.3 System 7.5 Update 2.0	Start with any of the above, then install System 7.5 Update 2.0 (a free multi-disk installer set).
System 7.5.3 Updated to Revision 2	Install System 7.5.3 Revision 2 (a free multi-disk installer set).
System 7.5.3 Revision 2	Sold commercially. Also came installed on new Macs.
System 7.5.3 Revision 2.1	Pre-installed on Performa 6400.
System 7.5.3 Revision 2.2	Pre-installed on Power Mac 9500/200 and Performa 6360.
System 7.5.5	Start with any flavor of System 7.5.3, then install System 7.5.5 Update (a free multi-disk installer set).