

# Macintosh VS Windows 95

## First in a Series

*"It's clear that the hype for Windows 95 got out of hand... We take our share of responsibility for creating unreasonable expectations."*

*—Brad Silverberg, Microsoft Senior Vice President for Personal Systems (quoted in InfoWorld, June 12, 1995)*

Apple agrees with Mr. Silverberg. Windows 95 is a major upgrade to Windows 3.1, and it will undoubtedly sell well because of Microsoft's large installed base. But the product has been relentlessly overhyped. One particular area of inflated expectations has been the idea that a PC with Windows 95 is the equivalent of an Apple® Macintosh® computer. It's just not so.

A Macintosh is a complete computer system, including hardware and software designed to work together. It's the only personal computer system designed that way. Apple uses that advantage to drive forward the features and functionality of the Macintosh, giving it new capabilities long before the PC, and making those features easy to use.

Because hardware and software in the IBM-compatible world are designed separately, it's very common for people comparing a Macintosh to a PC with Windows to focus only on operating system features. That's very misleading. People use complete computer systems, not just hardware or software alone. To compare computer systems accurately, you have to look at the overall features of both hardware and software, and especially at how those features work together. Buying a computer by looking only at its operating system is like buying a horse by looking only at its head.

When you look at overall system features, Apple thinks it's clear that a Macintosh is a more advanced, more useful computer than a PC with Windows. As Microsoft works to implement features that Apple pioneered in the 1980s, Apple is moving on to the next generation of personal computing. In particular, the Macintosh has major advantages in four areas:

- *The Macintosh is more powerful*
- *It's easier to use*
- *It has much more advanced multimedia*
- *It's compatible*

### Macintosh Advantages

#### More Powerful

The advanced RISC chips in Apple's Power Macintosh® computers continue to give them as much as a 50% advantage in performance—even more in areas such as multimedia, simulations, and 3D graphics, which many people see as the next frontier of personal computing.

#### Easier To Use

Macintosh is well known as the leader in this area. Although Windows 95 makes a PC look more like a Macintosh, it doesn't always work like one. The Macintosh is still a lot easier to use, easier to network, and easier to configure.

#### More Advanced Multimedia

While Windows celebrates its ability to play CDs, Macintosh is moving ahead to the next generation of multimedia, including speech synthesis and recognition, advanced graphics, video integration, and virtual reality.

#### Compatible

It may seem strange to list this as a Macintosh advantage, but it's an area in which Apple has made a big commitment. Macintosh systems today can read and write to PC disks, and there are a wide range of compatibility options that let Macintosh computers run DOS and Windows software, ranging from the SoftWindows software emulator to hardware compatibility cards made by Apple and third parties. The most compatible mainstream personal computer on the market today is not a PC, but a DOS-compatible Power Macintosh.

In the 1980s, Macintosh led in the implementation of graphical user interfaces and desktop publishing.

In the 1990s, Macintosh leads in the implementation of the next generation of features, including multimedia





and RISC computing. The constant throughout is the Macintosh computer's role as the functionality leader in personal computing.

### **Business Changes**

In addition to moving ahead on features, Apple is also fundamentally reshaping its business model to make people feel more comfortable investing in the Macintosh platform. Macintosh pricing is coming down, aggressively. Mac™ OS-compatible computers have been licensed for the first time. And Apple has entered into open alliances with IBM and Motorola for the PowerPC™ chip; and with Novell, IBM, Adobe, and a host of other companies for OpenDoc™ software.

Another area in which Apple is focused on improving is marketing. Explaining the unique benefits of a Macintosh, and the elements of the Macintosh strategy, is Apple's top marketing priority. This document is just one example of that commitment.

All these changes, taken together, mark a profound improvement in Macintosh as a product and as a business. We think they make a Macintosh a much more attractive computer for homes, schools, and businesses.

### **Questions or Comments?**

You can send e-mail to the Macintosh Platform Marketing team at [competition@applelink.apple.com](mailto:competition@applelink.apple.com).

# Macintosh vs Windows 95

## #2 Performance

### Summary

An Apple® Power Macintosh® computer was more than 50% faster than a comparable Intel Pentium processor-based PC running Windows, in independent tests using a variety of real-world applications. The Macintosh® advantage was even more substantial in graphics and technical programs. This gives a Macintosh computer the performance high ground in the industry transition toward graphical, media-intensive computing. This is part of a series of short reports on the contrasts between a Macintosh computer and a PC with Windows 95. To see other entries in the series, visit us on the Inter-net at <http://www.apple.com/whymac/>.

### The Macintosh Advantage

The PowerPC™ chips used in Macintosh systems often outperform Intel Pentium chips, sometimes by a wide margin. For example, a Power Macintosh 9500/120 outperformed a 120-MHz Pentium computer by 52% overall in independent benchmarks.\* The Macintosh performance advantage was even greater in some area—the scientific and technical applications tested were an average of 73% faster, and in graphics and publishing the Macintosh was 85% faster.

The tests were run on real applications, performing typical computing tasks. Programs tested included Excel, DeltaGraph, Word, Vellum, FoxPro, ClarisWorks, Freehand, Mathematica, Painter, and FrameMaker.

What others have said:

"The 132 MHz 604-based Power Mac leaves 133 MHz Pentium in the dust."—*PC Week*, June 19, 1995

"The [Power Macintosh 9500] 120-MHz beta unit we tested was so damn speedy we were forced to revamp our suite of benchmarks to accommodate it."—*InfoWorld*, June 19, 1995

### What It Means For Users

First and most obviously, if you're using a Pentium processor-based computer for technical work or graphics, you may be wasting your time. But power is important to every sort of user. If you're a business user, it means business graphics programs such as DeltaGraph run faster and more efficiently on the Macintosh, making your organization more productive. If you're a home user, that extra power lets you run games like LucasArts' Dark Forces in higher resolution, and lets you try out innovative new 3D games that aren't available or aren't as effective for the PC, such as Marathon and F/A-18. If you work in education, more power means the computer can handle more complex, realistic simulations and other learning tools. It also means the computer is less likely to become obsolete, an important issue for schools that can't replace their computers frequently.

### What About the Future?

Look at what Intel and Microsoft say the computers of the future will do—video, sound, 3D, etc. Macintosh does those things very well today. Apple is moving ahead to future versions of the PowerPC chip, and has shipped the new 604 chip already. Meanwhile, Intel is still trying to jump-start the P6 transition—and there are serious doubts about whether Windows 95 will see any major performance benefits from it. Intel has not been clear on its long-term plans for P7 or the processor it's developing with Hewlett-Packard, and when either one will ship. Once again, Macintosh is delivering the future of personal computing ahead of time.

### Questions or Comments?

You can send e-mail to the Macintosh Platform Marketing team at [competition@applelink.apple.com](mailto:competition@applelink.apple.com).



# Macintosh vs Windows 95

## #3 Powerful Programs

### Summary

Software developers are creating great new programs they couldn't create before, and supercharging their existing ones, using the extra power of the PowerPC™ chips in Apple's new Power Macintosh® computers. From scientific modeling with programs like Mathematica, to multimedia tools such as Strata's StudioPro, to games like F/A-18 Hornet 2.0 from Graphic Simulations Corp. and Marathon by Bungie Software, developers are creating exciting new programs that are available only on the Apple® Macintosh,® or perform better in their Macintosh versions.

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### The Macintosh Advantage

There's a myth in the computer industry that no software is being developed for the Macintosh platform. The reality is very different. Sales of applications for the Macintosh platform actually grew faster than PC application sales in 1994. There are more than 6,000 Macintosh-compatible programs on the market today, and more than 500 of those are Macintosh-only.\* Many more run on both Macintosh and Windows but do special things on the Macintosh that they don't on the PC. For a few quick examples, let's look at the areas of scientific computing, multimedia, and home entertainment.

**Scientific computing.** Mathematica is one of the premier programs for solving complex mathematical equations and graphing the results in 3D. It's used heavily by engineers, scientists, financial analysts, educators, and students, and is available in versions that run on a PC with Windows, Macintosh, and many different brands of workstations. Mathematica uses

a lot of computing power, and its users actively benchmark it on different computer systems and share their results on the Internet. In the results Apple has seen, Power Macintosh computers generally produced results comparable to computer workstations costing thousands of dollars more, and in most cases Power Macintosh computers were significantly faster than Pentium computers running at the same clock speed. In some tests, 66-MHz Power Macintosh computers even finished faster than 90-MHz Pentium systems.

**Multimedia.** The power of Power Macintosh makes it possible to bring workstation-style graphics and multimedia capabilities to the personal computer for the first time. Just as desktop publishing evolved down from a workstation-level task to something anyone could do, Apple expects advanced multimedia and 3D graphics to become commonplace because they can help anyone communicate more effectively.

There are more than 150 multimedia and graphics programs that run exclusively on the Macintosh platform. One good example is Strata Inc.'s StudioPro, a very powerful 2D and 3D drawing and animation program. Its features include raytracing, anti-aliasing, morphing, and Hollywood-style special effects. For more information on StudioPro, see the Internet address below.

**Home Entertainment.** Many people assume that to play the best games, you have to get a PC. There definitely are a large number of games for the PC, and that's one of the reasons Apple now offers DOS/Windows compatibility features for selected models of Macintosh Performa® home computers. But the other part of the story is that more than 70 great home entertainment titles run only on the Macintosh platform, including some exciting new games that take special advantage of the power of Power Macintosh. Two examples are F/A-18 Hornet 2.0 by Graphic Simulations Corp. and Marathon by Bungie Software.



Marathon is a 3D action game set in a spaceship that has been attacked by alien creatures. It takes advantage of the Power Macintosh to create high-resolution graphics, realistic stereo sounds, and more realistic physical modeling, all with very high performance. And because of the built-in networking of the Macintosh, it's incredibly easy for multiple players to join the same game.

F/A-18 Hornet 2.0 is a Macintosh-only flight simulator that includes recorded radio messages from the ground and air. Several users can play over a network, and at the recent MacWorld show in Boston, the company showed off a new module depicting conflict in Korea.

### What It Means For Users

The power of a Power Macintosh means a lot more than the ability to run fast gaussian blurs in Photoshop. Having more power lets software developers create and explore new things they couldn't have tried before, and makes existing programs run faster and better. That's true for everyone from game players to scientists to teachers to graphic artists.

### Questions or Comments?

You can send e-mail to the Macintosh Platform Marketing team at [competition@applelink.apple.com](mailto:competition@applelink.apple.com)

*To get more information on the products mentioned in this document, visit these Internet addresses:*

*—Macintosh flight simulation page  
(Includes reviews, information, and links to Web sites on most major Macintosh platform flight simulators, several of which are Macintosh-only)  
<http://www.xmission.com/~morrison/MFS/home.html>*

*—F/A-18 Hornet 2.0 information  
<http://graphsims.com/graphsim/ourprods.html>  
<http://www.computek.net/graphsim/hornet2.0.html>*

*—Marathon  
(Includes Marathon information and links to other Marathon sites)  
<http://general.amug.org/~marathon/cantina>*

*—Strata Inc. home page  
(Information on the company's products)  
<http://www.strata3d.com>*

*—Wolfram Research home page  
(Extensive information on Mathematica)  
<http://www.wri.com>*

*\*Macintosh application sales according to Software Publishers Association. Macintosh application installed base according to Computer Select. Macintosh-only applications according to Catalano Consulting.*

# Macintosh VS Windows 95

## #4 Virtual Reality

### Summary

Using Apple® QuickTime® VR software, people can take virtual reality tours of museums and landmarks on the other side of the world, view buildings that haven't yet been built, and even visit imaginary places that don't exist. Nothing equivalent to QuickTime VR is available today from Microsoft.

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### The Macintosh Advantage

QuickTime VR lets personal computers display 360-degree panoramic movies. Users can move forward and backward through the images, pan left to right and up and down, and select objects for close-up 360-degree views. The images can either be photographs taken with a standard 35-mm camera, or synthetic images made by a computer. This lets people explore 3D spaces and examine objects up close without buying add-on hardware such as graphics accelerator cards, floating point processors, helmets, goggles, joysticks, or gloves.

Panoramic movies made with QuickTime VR use as little as 150K of disk space. Thousands of panoramas can fit on a single CD-ROM, providing developers with the opportunity to create a rich and realistic three-dimensional user experience. Minimum system requirements are a 68030-based Macintosh or an 80386 Intel-based computer with Windows.

Although QuickTime VR runs on both Macintosh and Windows computers, it is enhanced to take advantage of the higher performance of PowerPC™ chips. Apple's in-house testing shows that users can get smoother, more realistic motion from Power Macintosh® computers than from Pentium computers.

Microsoft has demonstrated Windows-based software that it says will be similar to QuickTime VR, but it is not yet available and as far as Apple can determine, no shipment date has been announced.

Copies of the QuickTime VR player and sample movies can be downloaded from the World Wide Web at: <http://qtvr.quicktime.apple.com>

### What It Means For Users

- In education, students will be able to explore, from their desks, a myriad of worlds in 3D. In seconds they could go from visiting Egyptian pyramids in Africa to Mayan pyramids in Central America. They could visit museums without getting on a bus, and even look at objects not on display in the real museum.
- At home, in addition to making it easier and more fun for children to learn, QuickTime VR will make home shopping much more interactive and compelling. It's also great for entertainment; one of the first QuickTime VR applications was an interactive tour of the Starship Enterprise, published by Simon & Schuster.
- In business, users will create 3D sales presentations in which the customer can see the product photographically, from all sides. Architects, engineers, and designers will also benefit from QuickTime VR's ability to realistically display buildings or products that don't yet exist.

### What About the Future?

Apple has demonstrated future versions of QuickTime VR that include localized sound (sounds and volume change depending on where the user is "looking") and the ability to add motion to the panoramic movies. The release date for these features has not yet been announced.





## Questions or Comments?

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*For more information on the Star Trek TNG Interactive Technical Manual, use the Internet: <http://www.mcp.com/musoft/ssint/newtip.html>*

# Macintosh VS Windows 95

## #5 "At Ease" Security

### Summary

At Ease™ is a security program that lets people share an Apple® Macintosh® computer while protecting important applications and documents. It can protect files from young children at home, or prevent unauthorized configuration changes to a shared computer at work. At Ease also includes a simplified interface, with powerful features like talking buttons, that makes it very easy for young children to use the computer. It is bundled with every Macintosh Performa® home computer, and is available in a special networked version for business and schools.

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### The Macintosh Advantage

At Ease offers a choice of user-friendly interfaces that can be customized for every age and experience level:

- Young people and computer novices can use the simplified At Ease desktop, with its large buttons and folders.
- A restricted version of the normal Macintosh interface with complete security is available for more experienced users.
- The normal Macintosh interface is available for authorized, full-access users.

Menus let you quickly designate which desktop each person will use. You can easily control each user's ability to open, delete, copy, or rename specific files. You can also assign passwords to each user. At Ease can control where documents are saved, and can even limit saving to only floppy disks.

Unlike Windows 95, At Ease lets you easily match the user interface to each person's age and level of computer experience. At Ease makes it much easier for kids to use the computer. The At Ease shell has large one-click buttons to make it easy for children to access files and applications. There are also talking buttons for those just learning to read. And each person's files are in a single folder so they can easily organize their own documents. With At Ease you can simply and easily authorize access to specific programs and files, protect system settings, and assign passwords.

At Ease supports up to 40 users on one computer, so it's perfect for small businesses and classrooms. For enterprise systems (whether large school labs or businesses), At Ease for Workgroups supports up to 4,000 users over a network, and includes advanced features like activity logging (tracks shared application usage and duration by user) and the ability for an administrator to configure At Ease from any Macintosh on the network. At Ease is bundled with all Macintosh Performa computers, and is available at a suggested retail price of U.S. \$37. At Ease for Workgroups has a suggested retail price of U.S. \$295 for 10 systems. Volume licenses and school site licenses are also available.

At Ease is available in most major languages, including English, Japanese, French, German, Italian, Finnish, Norwegian, and Swedish.

### What It Means For Users

In homes, At Ease lets parents feel good about sharing their family Macintosh. Young children can use the computer through the simplified At Ease desktop without risk of having files deleted or unauthorized applications opened. At Ease lets parents and older children have full or restricted access. Parents can even control which CDs children can access.





In schools, At Ease provides security and prevents accidental file deletion and other system changes. At Ease offers a simplified user interface for young users and a restricted interface for more experienced students. Teachers and authorized users can have full access. At Ease also lets teachers designate where students save their work, and they can set up drop boxes for students to hand in their work electronically.

In business, At Ease makes it much easier for IS managers to prevent unauthorized configuration changes to Macintosh computers. This is especially important when Macintosh computers are shared by a workgroup. Access to the hard drive can be prevented if necessary, and users can be limited to saving files only in certain locations.

### **What About the Future?**

Apple's plans for the future of At Ease include making it more flexible, giving greater network management, and allowing even more user customization.

### **Questions or Comments?**

You can send e-mail to the Macintosh Platform Marketing team at [competition@applelink.apple.com](mailto:competition@applelink.apple.com)

*For more information on At Ease, use the Internet:*

*At Ease: <http://www.austin.apple.com:80/productinfo/datasheets/as/atease3.0.html>*

*At Ease for Workgroups: <http://www.austin.apple.com:80/productinfo/datasheets/as/ateasewg.html>*

# Macintosh vs Windows 95

## #6 Advanced Graphics

### Summary

QuickDraw™GX is a drawing environment that extends the Apple® Macintosh® computer's lead in advanced graphics and text. It's a richer drawing environment than the one in Windows 95, and handles type fonts, especially international languages, much more flexibly. Application developers are starting to use QuickDraw GX to create powerful drawing programs that literally do things you can't do on any other personal computer. For many customers, especially those in international markets and graphics users anywhere, QuickDraw GX represents an important difference between a Macintosh and a PC with Windows 95.

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### The Macintosh Advantage

QuickDraw GX is an integrated imaging technology providing advanced printing, graphics, type, and document portability features. Users can take immediate advantage of many QuickDraw GX printing features with their existing software. Developers can build on QuickDraw GX to provide graphics, color, and type formatting capabilities unmatched in applications today.

- Printing in QuickDraw GX is fully extensible. You can run "printing extensions" that modify a print job beyond what the application does. For example, a printing extension can add a custom "watermark" to each page. (A watermark is text or graphics, such as the word "Confidential" or "draft," that is printed in light gray in the background of each page. Most programs can't create watermarks, but QuickDraw GX can add them automatically without modification of the program.)

- A printing extension can also be a custom solution that integrates printing into a business environment by providing password protection, consumable and processing time billing, and customer tracking features.
- QuickDraw GX provides advanced drawing functions like scale, skew, and perspective, which are not included in Windows 95. Additionally, QuickDraw GX can mix colors in real time. In other drawing environments today, moving a yellow circle over a blue square does not automatically give you a green intersection—you have to run a "filter" or macro that calculates the intersection and creates a separate intersected object filled with the appropriate color. QuickDraw GX mixes colors in real time—just drag one shape over the other and the colors can mix automatically. Just like in the real world.
- Type in QuickDraw GX is automatically formatted (to produce advanced features such as ligatures), and automatically supports international script systems and reading directions (right to left, left to right, vertical, above and below a baseline, etc.). Windows 95 does not have equivalent functionality. Microsoft's closest answer is a font format called TrueType® Open. It allows the creation of fonts with ligatures and other advanced characters, but it's just a spec for a font format—developers have to write their own display technology in order to use the fonts. In Apple's view, that's the programming equivalent of selling someone a sack of flour instead of a chocolate cake.



## What It Means For Users

Although QuickDraw GX is valuable for almost all users (because everyone can benefit from better-looking printing and graphics), it has the greatest immediate impact on graphic artists and users outside the U.S.

QuickDraw GX applications make it easier for users to create complex graphics and documents. Internationally, QuickDraw GX enables developers to create products that, for the first time, allow many computer users to write the way that they were taught in school—with no awkward formatting or grammatical compromises imposed by the computer.

Some key applications that use QuickDraw GX include Lari Software's LightningDraw GX, Ready,Set,Go!GX from Manhattan Graphics, and UniQorn from SoftPress.

## What About the Future?

To be frank, early developer adoption of QuickDraw GX was slow, and some users had technical problems with the first version of it. There has been a warmer response to the new version of QuickDraw GX, which comes bundled with Apple's Macintosh 7.5 operating system (for an example of the coverage, see *MacWeek*, February 27, 1995, p. 1). Apple believes that the functionality of QuickDraw GX is the future of personal computer graphics, and is committed to make it a compelling benefit for every user.

## Questions or Comments?

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*For more information on companies and products mentioned in this document, use the Internet:*

*SoftPress Systems:*

<http://www.macfaq.com/vendor/software/996.html>

*Lari Software:*

<http://www.macfaq.com/vendor/software/580.html>

*Manhattan Graphics:*

<http://www.macfaq.com/vendor/software/655.html>

*QuickDraw GX:*

<http://www.info.apple.com/gx/gx.html>

<http://www2.waikato.ac.nz/ldo/gx/intro.html>

# Macintosh vs Windows 95

## #7 Compatibility

### Summary

The most compatible mainstream personal computer on the market today is a DOS compatible Apple® Power Macintosh® computer, because it's the only one set up to run software for DOS, Windows, and Macintosh.® This is a major departure from the situation in the past, in which users were forced to make a religious choice of either Macintosh or DOS/Windows. Now they can have both. The #1 reason computer customers have given in the past for not buying a Macintosh computer is lack of DOS/Windows compatibility,\* so this makes a big change in the market situation.

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### The Macintosh Advantage

A variety of hardware and software products allow Macintosh computers to run applications written for DOS and Windows. They include:

- Hardware add-in boards and bundled systems from Apple. These add an Intel-compatible microprocessor and the associated circuitry needed to run DOS and Windows.
- Hardware add-in boards from Reply Corp.
- New PCI-based hardware boards from Orange Micro.
- A new software emulator from Insignia Solutions, called SoftWindows 2.0 (the emulator lets the PowerPC™ chip imitate an x86 chip and run software written for it). The new version of SoftWindows includes Enhanced Mode support, greatly increasing its flexibility. A version of the product specially optimized for Windows 95 is planned.

Taken together, these products let people buy the most advanced personal computer, a Macintosh, without giving up anything else. They make it possible for a Macintosh to run more software than any other mainstream personal computer.

Here's what some prominent publications have said:

"Overall, the DOS Compatible Power Mac makes a superb PC, especially with a Mac wrapped around it to handle the messy details of attaching peripherals."

—*Byte Magazine*, April 1995

"With the Power Macintosh 6100/66 DOS Compatible, Apple Computer broadens the appeal of the Mac platform beyond the company's traditional user base."

—*PC Magazine*, April 11, 1995.

"If you're splitting your time between a Mac and PC, Apple's new Power Macintosh 6100 DOS Compatible can save you money and desk space, with no performance trade-offs on either side."

—*PC Computing*, April 13, 1995

"Apple has once again pushed closer to the Holy Grail of computing, a single machine that can operate DOS, Windows, and Macintosh programs."

—*NY Times*, February 21, 1995

Apple-labeled compatibility products include the Power Macintosh 6100/66 DOS Compatible computer, the DOS Compatibility Card for Power Macintosh 6100 and Performa® 6100 Series, the Macintosh LC 630 DOS Compatible (in some markets), and the Performa 640CD DOS Compatible computer (USA only). Third-party hardware and software compatibility products are available for many other Macintosh models.



## What It Means For Users

In the home, compatibility is important for both home office usage and for family computing. Home office users often have many different clients. While some of these clients may work in a Macintosh environment, others may use PCs. Apple's cross-platform computers give home office users the flexibility to use the same applications and files as their clients. For family computing, this flexibility means children can use the same Macintosh software that they encounter in schools, and adults can bring work home from the office, even if it was created using a DOS or Windows application.

**Small businesses.** Unlike large corporations, these users typically don't have computer support staff to help them make the technology work. The appeal of a Macintosh personal computer is that it is very easy to set up, learn, use, and extend, so they can focus on running their business instead of wrestling with technology. Despite these benefits, many of these people have historically chosen a PC instead of a Macintosh because they need to run a vertical application written only for DOS. With Apple's cross-platform computers, small business can access these applications without giving up the superior functionality of a Macintosh.

**Organizations.** Corporate customers can take advantage of the proven Macintosh superiority in terms of user productivity, lower life-cycle costs, and price/performance, without giving up the ability to run corporate-mandated DOS or Windows applications, or to access mainstream networks from either the Mac™ OS or DOS/Windows.

**Education.** Schools that install DOS-compatible Macintosh computers can teach students to use DOS and Windows, without giving up access to the superior learning tools and features of a Macintosh. And for students heading off to college, with no way to predict which classes they'll take and what applications they'll need, Apple's cross-platform Macintosh computers are a very safe bet.

## What About the Future?

Apple is committed to making DOS/Windows compatibility available even more broadly in its product line. We expect hardware and software compatibility products to be available for Apple's future Macintosh systems, from both Apple and/or third party developers.

## Questions or Comments?

You can send e-mail to the Macintosh Platform Marketing team at [competition@applelink.apple.com](mailto:competition@applelink.apple.com).

*For more information on the products mentioned in this brief, use the Internet:*

*Insignia Solutions' SoftWindows:*  
<http://www.insignia.com/>

*For a review of SoftWindows 2.0 running Windows 95, see:*  
[http://www.zdnet.com/~macweek/mw\\_07-31-95/mac\\_manager.html](http://www.zdnet.com/~macweek/mw_07-31-95/mac_manager.html)

*Orange Micro compatibility products [brief information]:*  
<http://www.info.apple.com/productinfo/factsheets/pciproductdir.html>

*Reply Corporation DOS on Macintosh card:*  
<http://www.reply.com/httpdocs/apple.htm>

*Apple's compatibility products:*  
<http://www.austin.apple.com:80/productinfo/datasheets/dt/pmdoscompatible6100-66.html>  
*[This takes you straight to the data sheet for the Power Macintosh 6100 DOS compatible.]*

\*Source: Apple internal market research.

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# Macintosh vs Windows 95

## #8 Scripting and More

### Summary

Software features built into the Apple® Macintosh® computer, including AppleScript™ scripting and Apple Guide help, give developers and users extremely powerful ways to extend the features of the Macintosh and customize them for specific tasks. Scripting is not included in Windows 95, and it's an important Macintosh advantage.

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### The Macintosh Advantage

AppleScript is a scripting language integrated into the Mac™ OS. It allows users and developers to automate routine or highly complex tasks. New tasks can be written or "recorded" by the user.

AppleScript allows developers (both commercial and in-house) to create custom solutions by integrating hundreds of off-the-shelf scriptable applications. Programs that support AppleScript include Claris FileMaker Pro, Microsoft Excel, Microsoft Word, Novell/Word-Perfect's WordPerfect, Quark XPress, FrameMaker, SoftWindows, and many others. A growing suite of third-party tools supports AppleScript, including Apple's HyperCard®, Main Event's Scriptor, PreFab Software's Player, Software Designs Unlimited's Face-Span, and a lot more.

Developers can combine AppleScript solutions with other powerful Apple technologies, such as Apple Guide. Apple Guide is the electronic help system built into every Macintosh computer. It leads a user through specific procedures one step at a time by pointing out exactly where to click the mouse or type. It is used heavily by a number of Macintosh developers (for example, Insignia Solutions' Soft Windows 2.0 uses Apple Guide to provide electronic help for people running DOS and Windows

programs on a Macintosh.) Custom Apple Guide files can be created to help a user work through an AppleScript solution.

The AppleScript language supports localized dialects' which make it easier for non-English speakers to work with AppleScript. Dialects currently available are French and Japanese (two of Apple's largest markets).

Finally, no discussion of Macintosh scripting would be complete without mentioning UserLand Frontier. Frontier is a very powerful third-party scripting environment, available only for the Macintosh. It extends the capabilities of AppleScript in many ways. The latest version of Frontier, now in beta, includes powerful links to Internet scripting.

Windows 95 does not include a built-in scripting language.

### What It Means For Users

For technically skilled users, scripting is a very powerful way to customize a Macintosh computer and automate tasks. For nontechnical users, scripting itself involves some learning (it is not for completely nontechnical users), but anyone can benefit from the custom solutions created by people who do create scripts.

Some of the most dramatic uses of Macintosh scripting today are in automating business tasks. For instance, scripting can automate tasks such as importing information into a database. A more complex example would be to automate the creation of a catalog by combining a desktop publishing application, image database, and text information on products. Another example is that the scripting features in SoftWindows mean a script on the Macintosh can actually execute Windows commands.

Macintosh developers are driving scripting in other interesting directions, many of them involving the Internet (such as combining scripting and the World Wide Web to



make it more interactive and extensible). We can't do justice to this work in a short document because so much is going on; if you're interested, the best thing to do is check the references below for more information and examples.

### What About the Future?

Apple is planning additional extensions to make AppleScript more powerful and easier to work with, but details on the plans have not been made public.

### Questions or Comments?

You can send e-mail to the Macintosh Platform Marketing team at [competition@applelink.apple.com](mailto:competition@applelink.apple.com)

*For more information on topics mentioned in this note, use the Internet:*

*General Macintosh scripting information:*

*<http://mmm.dartmouth.edu/pages/macscripting/macscripting-home.html>*

*<http://www.gz.com/scriptweb/>*

*<http://www.ultranet.com/~mfenner/applescript.html>*

*<ftp://gaea.kgs.ukans.edu/applescript/00applescript.faq>*

*For information on the Macintosh scripting e-mail list:*

*[http://cy-mac.welc.cam.ac.uk/a\\_script.html](http://cy-mac.welc.cam.ac.uk/a_script.html)*

*PreFab Software:*

*<http://www.tiac.net/prefab/index.html>*

*Frontier 3.0:*

*[http://www.hotwired.com/staff/userland/aboutfrontier30\\_313.html](http://www.hotwired.com/staff/userland/aboutfrontier30_313.html)*

*WordPerfect:*

*<http://www.wordperfect.com/>*

*Frame Technology:*

*<http://www.frame.com/>*

*SoftWindows 2.0: [http://www.insignia.com/marcom/datasheets/SoftWindows\\_20\\_DataSheet.html](http://www.insignia.com/marcom/datasheets/SoftWindows_20_DataSheet.html)*

*Claris FileMaker Pro:*

*<http://www.claris.com/Products/FMPro/DataSheet.html>*

# Macintosh vs Windows 95

## #8 Scripting and More

### Summary

Software features built into the Apple® Macintosh® computer, including AppleScript™ scripting and Apple Guide help, give developers and users extremely powerful ways to extend the features of the Macintosh and customize them for specific tasks. Scripting is not included in Windows 95, and it's an important Macintosh advantage.

This is part of a series of short reports on the contrasts between a Macintosh computer and a PC with Windows 95. To see previous entries in the series, visit us on the Internet at <http://www.apple.com/whymac>

### The Macintosh Advantage

AppleScript is a scripting language integrated into the Mac™ OS. It allows users and developers to automate routine or highly complex tasks. New tasks can be written or "recorded" by the user.

AppleScript allows developers (both commercial and in-house) to create custom solutions by integrating hundreds of off-the-shelf scriptable applications. Programs that support AppleScript include Claris FileMaker Pro, Microsoft Excel, Microsoft Word, Novell/Word-Perfect's WordPerfect, Quark XPress, FrameMaker, SoftWindows, and many others. A growing suite of third-party tools supports AppleScript, including Apple's HyperCard®, Main Event's Scriptor, PreFab Software's Player, Software Designs Unlimited's Face-Span, and a lot more.

Developers can combine AppleScript solutions with other powerful Apple technologies, such as Apple Guide. Apple Guide is the electronic help system built into every Macintosh computer. It leads a user through specific procedures one step at a time by pointing out exactly where to click the mouse or type. It is used heavily by a number of Macintosh developers (for example, Insignia Solutions' Soft Windows 2.0 uses Apple Guide to provide electronic help for people running DOS and Windows

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Macintosh developers are driving scripting in other interesting directions, many of them involving the Internet (such as combining scripting and the World Wide Web to



make it more interactive and extensible). We can't do justice to this work in a short document because so much is going on; if you're interested, the best thing to do is check the references below for more information and examples.

### What About the Future?

Apple is planning additional extensions to make AppleScript more powerful and easier to work with, but details on the plans have not been made public.

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You can send e-mail to the Macintosh Platform Marketing team at [competition@applelink.apple.com](mailto:competition@applelink.apple.com)

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*<ftp://gaea.kgs.ukans.edu/applescript/00applescript.faq>*

*For information on the Macintosh scripting e-mail list:*

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*PreFab Software:*

*<http://www.tiac.net/prefab/index.html>*

*Frontier 3.0:*

*[http://www.hotwired.com/staff/userland/aboutfrontier30\\_313.html](http://www.hotwired.com/staff/userland/aboutfrontier30_313.html)*

*WordPerfect:*

*<http://www.wordperfect.com/>*

*Frame Technology:*

*<http://www.frame.com/>*

*SoftWindows 2.0: [http://www.insignia.com/marcom/datasheets/SoftWindows\\_20\\_DataSheet.html](http://www.insignia.com/marcom/datasheets/SoftWindows_20_DataSheet.html)*

*Claris FileMaker Pro:*

*<http://www.claris.com/Products/FMPro/DataSheet.html>*

# Macintosh vs Windows 95

## #9 Speech

### Summary

The Apple® Macintosh® computer is far ahead of PCs running Windows 95 in its ability to generate and recognize speech. Every Macintosh computer sold in the U.S. today has the ability to speak; PowerPC™-based Macintosh models equipped with Apple's speech recognition software can also respond to spoken commands. PC speech does less, costs more, requires dedicated hardware support, and is poorly integrated with the overall computer system. Speech is one of the ways in which Macintosh multimedia is moving far ahead of the Windows PC platform.

This is part of a series of short reports on the contrasts between a Macintosh computer and a PC with Windows 95. To see previous entries in the series, visit us on the Internet at <http://www.apple.com/whymac/>

### The Macintosh Advantage

Speech synthesis, also known as text-to-speech, can run on all Macintosh systems shipping today and is used in education and entertainment applications. Speech recognition runs on PowerPC-based Macintosh models and is bundled on the new Power Macintosh® 7500 and 8500 models (the software will also be available for downloading on the Internet, eWorld,™ AppleLink,® and on the latest Mac™ OS CD, version 7.5.2). With speech recognition you can use spoken commands to execute common desktop tasks like opening files and folders, starting applications, switching applications, and closing windows.

On the PC, by contrast, speech does much less. The Microsoft Sound System, for instance, requires a hardware add-in board and can't truly speak text; it can only play back recorded voice clips, something the Macintosh has been able to do, with no add-in card, for 10 years. Speech recognition with the Microsoft Sound System also requires add-in hardware and must be trained repeatedly before you can use it. Macintosh speech recognition requires no training.

### Speech recognition

Macintosh speech recognition includes a productivity utility called Speakable Items. Any icon can be made "speakable" by placing its alias in the Speakable Items folder; speaking its name is then like a double click; it opens or launches the spoken item. The item itself can reside anywhere on a hard drive or server, buried in the hierarchy of folders. For example, a user wanting to check her stock portfolio without opening four folders and launching an application, would just say "check stocks," and the Macintosh would do the rest.

Speakable items can also be AppleScript™ files, meaning users can execute an almost unlimited series of actions by speaking a single command. Example scripts are provided with the software.

Apple's speech software can recognize virtually any English-speaking voice, even those with an accent. Misfires, a common speech recognition problem, have been virtually eliminated. (Misfires happen when a computer mistakes some other sound for a command; to combat this, Apple's software allows the user to specify a name for the computer that must be spoken before a command, or to cut off all speech recognition unless a specific key is pressed on the keyboard.)

### Speech Synthesis

Apple's speech synthesis software comes with 22 user-selectable voices, ranging from serious business versions to fun voices like a talking robot and a person speaking underwater. The voices also let users select whether they want higher speech quality or a smaller memory footprint. Game developers, educational software developers, and CD-ROM developers can have any amount of text read aloud from their applications using Apple's text-to-speech.

Apple is now also providing text-to-speech for Mexican-style Spanish, which can speak Spanish aloud with a Latin American accent.





## What It Means For Users

Speech makes it easier and more natural to work with your computer. In the home and in schools, the computer can talk to young users, meaning they don't need to know how to read before they can use the computer to learn. In business, ClarisWorks can read your document back to you, an easy and comfortable way to proofread your work. Executing common desktop tasks with "hands-free" speech commands is fast and easy and allows you to keep your mind focused on getting things done.

An example of the synthesis advantage is Scholastic's WiggleWorks for the Macintosh, a consumer education title which reads stories to children while the text and images are up on the screen, and allows the children to add their own text, which the program will also read aloud.

## What About the Future?

Apple's competitors sometimes use speech in demos, ads, and futuristic videos, but Apple is already on its third generation of those features and moving further ahead. Soon speech will recognize more and more phrases. Totally hands-free computer use—over the phone, by young children, by workers who are simultaneously doing other things—will be commonplace. Apple is also working to add other languages, including Chinese, French, Italian, and Japanese.

Apple's text-to-speech technologies can be easily incorporated into third-party applications. In most cases this can be done with just a few lines of code. They will also be able to add speech recognition with the release of new application programming interfaces planned for Fall 1995.

## Questions or Comments?

You can send e-mail to the Macintosh Platform Marketing team at [competition@applelink.apple.com](mailto:competition@applelink.apple.com)

# Macintosh vs Windows 95

## #10 Silly Windows Tricks

### Summary

Let's depart from our usual Macintosh® Advantage format to take a quick look at the most common question Apple is getting these days: Does a computer that looks more like an Apple® Macintosh computer necessarily work like an Apple Macintosh?

Apple believes the answer to that question is no, at least so far as Windows 95 is concerned. This note examines the evidence in several areas: the file system, hardware/software integration, and application installation and configuration.

This is part of a series of short reports on the contrasts between a Macintosh computer and a PC with Windows 95. To see previous entries in the series, visit us on the Internet at <http://www.apple.com/whymac/>

### The Evidence

None of the problems we cite below are the sort of "killers" that would likely cause Windows 95 to fail in the marketplace. But they help to highlight the difference between the hype for Windows 95 and the reality of it. These are not all of the problems we're aware of in Windows 95 (not even close), but they do give a taste of the sort of issues computer customers should think about.

#### *Is DOS is still there?*

"Windows 95 isn't the brand new operating system that Microsoft claimed it would be. It is simply the latest revision to the same old DOS and Windows and subject to the same old problems of stability, of running out of resources when running complex work loads."

—*Marketing Computers* magazine, May 1995

**The file system.** One of the most troubling aspects of Windows 3.1 for users has been navigating the arcane DOS file system, with its three-character extensions, path names, and forbidden characters. Windows 95 puts a more attractive interface on top of that file system, but it's still there, and users still need to understand it. For example, the three-character

extension is still needed to identify file types (it just isn't displayed), path names are still used (and reported back by the operating system in many error messages), and special characters used by the DOS file system cannot be used in file names (including \* ? " / \ .). Using them by mistake can cause invalid-filename messages or create unpredictable results (for example, encasing a file name in "double quotes" causes that name to be saved without the three-character extension, making it hard for the user to open the file).

By contrast, the only character forbidden in a Macintosh filename is the colon, :, and the operating system automatically replaces it with a hyphen when the user types it.

One area in which Windows 95 has made progress is allowing longer file names. But the long names are pasted on top of the old DOS file system. The real name of the file is an old-style eight-character name abbreviated by Windows 95 automatically from the long name. This can cause confusion when files are shared between Windows 95 users and users of DOS and Windows 3.1 (which won't display the long names). Confusion also results when using existing DOS and Windows 3.1 applications under Windows 95. The problems are troubling enough that Microsoft recommends users, particularly those in workgroups, create special naming conventions. They recommend starting long filenames with short significant words or with a legal 8.3 filename.\* Thus the user assumes the burden of designing long filenames with the eight-character encoding scheme in mind.

With Macintosh, the user sees and can edit the real file name, and there's no name problem when exchanging files with others.

**Configuration files.** The CONFIG.SYS and AUTOEXEC.BAT files are still supported by Windows 95, for use by DOS and existing Windows applications. So unless a user buys only completely new Windows 95 applications, CONFIG.SYS and AUTOEXEC.BAT are still loaded and can still cause problems.



Windows 95 itself relies on other configuration files, especially one called IO.SYS. In some cases it can be edited from within Windows, but in other cases Microsoft's own technical documentation advises the user to edit it directly with a text editing program.

**Coordination of hardware and software.** Apple designs Macintosh hardware and software in tandem, so they work together well. The PC architecture often requires the user to provide that hardware/software integration. Here are two examples:

#### **Multimedia Features**

Because Microsoft doesn't control the hardware design of PCs, it has to specify multimedia features item by item. This leaves the user to do the integration. Here are excerpts from the three-page list of features that Microsoft recommend users look for in a multimedia PC:\*\*

- A sound card with 16-bit DAC and 16-bit ADC
- CD-ROM drive with multisession support
- Support for 8, 11, 22, and 44 kilohertz waveforms
- General MIDI support
- 16-voice polyphony
- MIDI streams
- Avoid waveform synthesis
- Mixer that supports input from WAV, MIDI, Redbook, and AUX
- 3-bit volume control on each input, with a logarithmic taper
- All sources are within -10db and without attenuation, to prevent the mixer from clipping

Apple believes it would be very difficult for the average PC customer to find this information, let alone understand it. By contrast, here's Apple's recommended multimedia configuration: Buy a Macintosh computer with a CD-ROM drive installed.

#### **Floppy Drives**

One of the most-promoted features of Windows 95 is its ability to automatically recognize when a CD has been inserted into the computer. But what doesn't get reported is that Windows 95 does not sense when a floppy disk has been inserted. The user has to tell the software what is happening, by clicking on the A: drive icon. When the disk is removed, its image remains on the screen, unchanged, unless the user selects the "Refresh" menu command. If the user attempts to open one of the files displayed for a disk that's not present, cryptic error messages can result ("invalid directory" and others).

By contrast, the Macintosh operating system senses when a disk is inserted or removed and displays the appropriate icons.

**Trouble with applications.** One of the central promises of Windows 95 is that it will make installing applications much easier, especially games. This is likely to be a major competitive issue this fall, considering the extensive problems reported with PC software installation last Christmas.

Unfortunately, Microsoft's own documentation shows that the applications transition to Windows 95 may be difficult. Of 2,530 current Windows programs tested, Microsoft reported technical problems of varying severity with 732—roughly 30% of the programs tested.

Some 124 of those programs sometimes or always require MS-DOS mode, meaning they may have the same complex configuration issues that DOS programs did in the past. The user also has to reboot the computer to enter DOS mode, and reboot it again to exit. The problems in the other programs range from minor to very significant. Here are a few examples of popular consumer programs and the problems Microsoft reported with them:

- 7th Guest: Some versions of PAS 16 require IRQ 5 and DMA 3.
- After Dark 3.0 for Windows: General protection fault (system crash) occurs when running Bad Dog screen saver if Windows 3.x GRP files are installed.
- The Daedalus Encounter 1.1: System crashes occur in MSNOTIFY.QTC.
- Dark Forces 1.0: Demo requires MS-DOS mode; sound card detection must be run twice during installation.
- Doom 2: Will not run in a DOS VM on systems that are paging through MS-DOS.
- Myst 1.02: Users of S3 video cards must place the entry "optimize = driver" in the QTW.INI file.
- Quicken 4.0 for Windows: Home inventory will create blank records when entering data; trying to read or edit these records will cause a system crash.

In many of these cases, the program can apparently be made to run by a technically skilled person who knows what to do. And no doubt the Windows programs in question will eventually be upgraded to fix the problems. The question is whether those 30% of Windows programs that have problems will be fixed by the Christmas selling season—and for those that aren't, how many families will be confused and frustrated again this Christmas.



## Conclusion

As we said before, we're not trying to argue that Windows 95 will be a failure in the marketplace. Current Windows users who are completely committed to it, and have enough money to finance the upgrade, will generally see it as an improvement over Windows 3.1. However, people who are considering both Macintosh and a PC with Windows 95 deserve to understand exactly what they're getting into.

## Questions or Comments?

You can send e-mail to the Macintosh Platform Marketing team at [competition@applelink.apple.com](mailto:competition@applelink.apple.com)

*\*As reported in the Baltimore Morning Sun, June 28, 1995.*

*\*\*Windows 95 Resource Kit, Microsoft Press, 1995, pages 706-708.*

# Macintosh vs Windows 95

## #11 3D For Everybody

### Summary

QuickDraw™ 3D is software for the Apple® Macintosh® computer that lets programs create and display workstation-quality 3D graphics. It lets personal computer users treat 3D images like any other type of graphic, even cutting and pasting them between programs. Nothing like it comes with Windows 95.

This is part of a series of short reports on the contrasts between a Macintosh computer and a PC with Windows 95. To see previous entries in the series, visit us on the Internet at <http://www.apple.com/whymac/>

### The Macintosh Advantage

QuickDraw 3D isn't an application itself, but it can be used to put 3D into existing or new software programs. It includes a human interface that makes it easy and intuitive to draw and edit 3D graphics, and software tools for drawing 3D objects (including high-end features like shading, texture-mapping, and lighting effects). QuickDraw 3D also includes a cross-platform file format, so users can share 3D drawings, and has an open architecture that lets Apple and others accelerate its performance.

Each element of QuickDraw 3D can be extended, making QuickDraw 3D one of the most open graphics architectures in the industry. Features including the file format, user interface, modeling tool kit, and shading and rendering architectures are all designed to allow developers—and ultimately customers—to add new capabilities to the system.

Windows 95 does not include integrated 3D.

Although QuickDraw 3D will be available in a version for the Windows platform, it takes advantage of the extra performance of the PowerPC™ chips used in Apple's Macintosh computers, and speed will be increased even further by hardware accelerators for the Macintosh. Apple believes this makes Macintosh the premier platform for doing 3D graphics on a personal computer.

QuickDraw 3D is available now, bundled with Apple's new Power Macintosh® 7500 and 8500 models. It will be included in the next update to the Mac™ OS operating system, and is available on electronic services, including the World Wide Web. Many compatible applications also ship QuickDraw 3D with their product.

### What It Means For Users

The addition of 3D graphics makes the Macintosh an even more attractive computer for people doing publishing, multimedia authoring, education, and technical work. But Apple believes that eventually 3D graphics will benefit everyone. Just as desktop publishing features became mainstream because they were a better way to communicate information, 3D is meaningful for everyone because it enhances everything from business graphs to educational titles to games. That's why making 3D usable by everyone is a major emphasis for Apple.

Software companies supporting QuickDraw 3D include 3D Labs (acceleration), auto•des•sys (Form•Z modeler), Adobe Systems, Canto Software (Cumulus multimedia database), Electric Image (Animation System), Fractal Design, Graphisoft (ArchiCAD 3D CAD), Graphsoft (MiniCAD), HSC (Bryce 2.0), MacPlay (Descent 1.1), Matrox (PC-based acceleration vendor with PCI 3D accelerator), Microspot, Ray Dream (Designer), Reality Bytes (Havoc), Spatial Technology (advanced 3D geometric modeling development environment), Specular International (Infini-d 3.1), Strata (Studio Pro, Vision 3D), Vertigo Technology (Vertigo II and SGI-based application), Viewpoint Datalabs (3D models and clip art), Virtus Corporation (Walkthrough Pro 3.0).

### What About the Future?

In the next year, Apple expects that QuickDraw 3D will be released in a Windows version, there will be an update with more features, and there will be a scaled version for use in games and multimedia titles. Apple also intends to integrate





QuickDraw 3D with animation, and link it more tightly with Apple's QuickTime® video technology and QuickTime VR virtual reality software.

### Questions or Comments?

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*For more information on topics mentioned in this note, use the Internet:*

MacWeek *article from February:*

[http://www.ziff.com/~macweek/mw\\_020695/news1.html](http://www.ziff.com/~macweek/mw_020695/news1.html)

QuickDraw 3D *home page:*

<http://www.info.apple.com/qd3d/QD3D.HTML>

# Macintosh vs Windows 95

## #12 Satisfied Customers

### Summary

Two recent independent studies rated Apple tops in customer loyalty and satisfaction, consistently surpassing every other brand of personal computer. Apple's lead in customer satisfaction is not just a sign of the quality of the Apple® Macintosh® computer, but also is evidence of the strength of Apple's core business.

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### The Macintosh Advantage

One way to measure the quality of a personal computer is to see how its users feel about it. By this measure, Macintosh continues to be the personal computing leader. Two recent independent studies rated Apple above every other computer manufacturer in customer satisfaction and loyalty.

- Computer Intelligence InfoCorp studied the brand loyalty of more than 50,000 computer users at home, in self-run businesses, and in businesses where the employer provides the computer.\* Apple Macintosh was rated first in every market. Here are the top five companies, with their loyalty rates:

	All Users	Employed-Provider	Self-Employed	Home Users
Apple Macintosh	87%	88%	91%	81%
Gateway 2000	82%	86%	71%	71%
Compaq	64%	73%	29%	29%
Dell	63%	68%	64%	27%
HP	59%	63%	39%	58%

- *PC World* magazine surveyed buyers of 18,000 personal computers representing 23 brands and asked them to rate the computers in nine categories relating to reliability and service.\*\* The categories were overall problem rate, system DOA rate (problems with motherboard, disk drive, etc.), non-system component DOA rate, time to reach a support staffer, time to resolve a problem, percent of problems never resolved, willingness to buy again based on service received, percent reporting low overall satisfaction on service (the lower your rating on this, the better), and percent reporting high overall satisfaction with service.

Apple received the highest rating (five stars) in every category except component DOA rate, in which Apple rated four stars. Here are the overall results for the top five companies:

### Total stars (out of a possible 45)

Apple	44
Compaq	41
DEC	40
Dell	39
HP	38

### What It Means For Users

Obviously, people who use Apple Macintosh computers tend to be happy with them. Apple is especially pleased that Macintosh satisfaction ratings are high across the board—in homes, large businesses, and small businesses.



## What About the Future?

No company is perfect, of course. Some Macintosh customers have problems with their computers, product transitions are an issue for every computer company, and many people have been frustrated by recent Macintosh product shortages. Apple apologizes for those problems, and is committed to making the process of buying and owning a Macintosh even more pleasant and satisfying.

## Questions or Comments?

You can send e-mail to the Macintosh Platform Marketing team at [competition@applelink.apple.com](mailto:competition@applelink.apple.com)

*For more information on studies mentioned in this note, use the Internet:*

*The CII loyalty study:*

<http://www.compint.com/news/loyalty.html>

*\*Computer Intelligence InfoCorp's Consumer Technology Index study, July 1995. CII calls it "The largest, most comprehensive study of personal computer usage in the United States."*

*\*PC World, June 1995. The questionnaire is a fax-back form bound into every issue of PC World. Because of this methodology, PC World notes, the results are not statistically projectable to the larger population. But PC World also reports that it did conduct a separate random study, and the results were comparable to those reported in the magazine. Because the questionnaire is not inherently biased toward any brand, PC World calls it a valuable insight into differences between companies.*

# Macintosh vs Windows 95

## #13 More Built-In Features

### Summary

The power of a computer doesn't depend only on its chip. Power is the ability to do things, and that depends a lot on features beyond the chip that are built into the computer. An Apple® Macintosh® computer can do more than a typical PC running Windows 95 in part because it has a lot more features built into it. This means the Macintosh is more versatile, in addition to being easier to use.

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### The Macintosh Advantage

If the standard PC running Windows 95 were a new car, it would be stripped—no radio, no air conditioning, no power brakes. By contrast, a Macintosh computer comes fully loaded with all the features a person is likely to want.

Many of the features built into a Macintosh computer are either completely unavailable on the PC or cost extra. For example:

- Ready for expansion. A Small Computer Systems Interface connector (SCSI for short) lets you easily add and remove devices like external CD-ROM drives, hard drives, and scanners without opening the computer case. It has been built into every Mac for almost a decade, but is still a user-installed option on most PCs.
- Ready for networking. Networking is built into every Macintosh, and high-speed Ethernet connectors are standard on most. Windows 95 includes networking software, but networking hardware is rarely built into PCs running Windows 95.
- Ready for video. Many of Apple's newest Macintosh computers include video-in connectors that enable them to easily capture video sequences from cameras and VCRs. Using a variety of third-party applications, those video clips can then be integrated into presentations, school projects, and electronic family albums. Video-in is a complex and costly add-on for most PCs with Windows.
- Ready for input. The Apple Desktop Bus™ connector (ADB) lets you easily add and remove input devices like a keyboard, mouse, trackball, or graphic tablet. You don't have to use up a serial port, and devices can be "chained" together so several of them share one connector. That's still a future promise on the PC platform.
- Ready for telephony. On many Mac systems, Apple is now building in a telecommunications connector called GeoPort.® It lets you easily connect low-cost, high-speed modems and other telecommunications devices. Nothing like it is built into PCs with Windows today.
- Ready for sound. High-quality sound in and out are standard on all Macintosh systems, and microphones are even built into most of them. High-quality sound is still an add-on for some PCs running Windows.
- Auto-eject disk drives. Floppy disk drives on the Macintosh are automatically managed by the operating system, which notices when a disk is inserted and ejects it automatically at the appropriate time. PCs running Windows do not have this close integration between hardware and software.
- Multiple monitor support. The Macintosh can run multiple monitors simultaneously, too, treating the screens as a single, combined work space. Most standard PCs, by contrast, aren't designed to support more than one monitor at a time.





## What It Means For Users

As any car buyer knows, it's easy to be drawn in by the low price of a stripped car, but the better value is often the fully loaded model. Too often with Windows PCs, users have to pay extra for features they really need, and frequently they even have to install those features on their own. It's the equivalent of a car dealer leaving a customer to install his or her own air conditioner.

## What About the Future?

Apple is continuing to push the boundaries of what defines a standard personal computer. Future initiatives Apple is exploring include higher-speed peripherals connectors, wireless networking, specialized graphics acceleration, and multiprocessing.

## Questions or Comments?

You can send e-mail to the Macintosh Platform Marketing team at [competition@applelink.apple.com](mailto:competition@applelink.apple.com)

# Macintosh vs Windows 95

## #14 OpenDoc

### Summary

In the 1980s, the graphical user interface revolutionized personal computing, enabling big leaps in user productivity and ultimately making obsolete all the applications standards of the day. In the 1990s, Apple believes the next major software revolution will be component software. Apple's software for components is called OpenDoc.® It's an open standard co-developed with IBM, Novell, and many other computing companies, and it will be a springboard for innovation on the Macintosh® platform in the future.

This is part of a series of short reports on the contrasts between an Apple® Macintosh computer and a PC with Windows 95. To see previous entries in the series, visit us on the Internet at <http://www.apple.com/whymac/>

### The Macintosh Advantage

Personal computer operating systems are like giant plates of spaghetti. Anytime you touch anything on the plate, everything else slithers around. In other words, any time the vendor adds a new feature, it has to spend most of the time fixing bugs introduced by that new feature. The more features are added, the worse the bugs become, and the longer the bug fixes take. People installing Windows 95 today are just the latest example of this process.

The same thing has occurred in applications—today's major suite programs are themselves like big plates of spaghetti, making them very hard to create and maintain, let alone advance.

The net result of this is slower innovation. New operating systems are routinely late coming to market as debugging eats up more and more time; and software companies are being forced out of personal computing, as fewer and fewer of them can afford the investment necessary to create and maintain an entire suite.

If the current process continues, most of the computer industry will choke to death on its own infrastructure. There will be much less competition, slower change, and many fewer choices for customers.

Apple thinks this would be a disaster for personal computing. The way out of it is component software (also called object software by many people). Whereas current software is like spaghetti, component software is like Lego-brand building blocks. It's composed of a series of small software programs (or components) that fit together. New pieces can be mixed and matched without disturbing the overall structure, and you can make a huge variety of different things with it. It's something like the plug-ins for a program called Adobe Illustrator—except that everything can be plugged into everything else.

Apple's path to component software is called OpenDoc. It's software that sits on top of the Mac™ OS and supervises the software components. These components, regardless of who developed them, will work together as if they were written by a single developer. This consistency will be ensured by CI Labs, an independent OpenDoc industry association supported by Apple, IBM, Adobe, Novell, and many other computing companies.

OpenDoc is extremely open. The source code to it is available through CI Labs and the CI Labs partners are porting it to operating systems other than the Mac OS.

OpenDoc will make life easier for anyone who writes software. Application developers will be able to focus on writing small programs that do specific things, rather than creating entire suites. This will make it much easier for small, innovative software companies to get back in the industry. OpenDoc will also make it easier for system integrators, corporate developers and VARs to quickly snap together custom software and hardware products that specifically meet customer needs.



OpenDoc applications will be sold the way applications are sold today, and through the same channels. But as with any new technology, additional channels will evolve to capitalize on the technology's strengths. It is likely that over time on-line component warehouses will be used to distribute some OpenDoc applications. Interesting new on-line applications and services will be enabled by OpenDoc.

Microsoft is also working on component-related software, called OLE (Object Linking and Embedding). Unlike OpenDoc, OLE started out as a technology to extend the functionality of Microsoft's Office applications. Its source code is held privately by Microsoft, and it is not controlled by an open, independent group the way OpenDoc is. The Office suite of applications is still the OLE design center and Microsoft has made no secret of its desire to push developers to adding value to Office and Backoffice rather than competing with these Microsoft applications.

Nevertheless, Apple is not trying to kill OLE. Apple wants customers to be free to make an open choice of whichever component system is best for them. So OpenDoc has been designed as a superset of OLE, with interoperability between them provided by Component Glue technology.

Microsoft has acknowledged OpenDoc as an acceptable way for developers to provide OLE support in Windows 95.

### What It Means For Users

OpenDoc as a technology is targeted at developers, both software vendors and in-house corporate developers. But OpenDoc will benefit customers in several important ways.

- Apple will use OpenDoc as a springboard for innovation on the Macintosh platform. Because it makes software development much easier, it will allow Apple and developers to add new software and hardware features to the Macintosh much more quickly.
- Users will benefit from the highly integrated nature of OpenDoc applications, even when those applications are created by different software companies. OpenDoc applications let users focus on their task rather than on getting their applications to work together.

- Over time, users will be able to purchase functionality as they need it rather than being forced to get overwhelmingly large applications with features they don't need or want.
- Users will be able to purchase solution suites aimed at their particular needs, whether they're a home user, educator, publisher, real estate agent, or whatever.

Apple believes these benefits will happen first on the Macintosh platform because of Apple's strong commitment to OpenDoc and its encouragement of developers to adopt component software.

In the end, Apple believes people will choose to use OpenDoc not because they want component software technology, but simply because it will help them get more done.

### What About the Future?

OpenDoc for Macintosh is already in the hands of developers. The user version is expected to ship this fall, and the first OpenDoc applications are expected to appear before the end of 1995. Developers worldwide are already creating OpenDoc applications. In 1996, Apple expects to see OpenDoc solutions for Macintosh personal computers that provide unprecedented flexibility and customization based on user needs.

### Questions or Comments?

You can send e-mail to the Macintosh Platform Marketing team at [competition@applelink.apple.com](mailto:competition@applelink.apple.com)

*For more information on topics mentioned in this note, use the Internet:*

*CI Labs home page:*  
<http://www.cilabs.org/>

*Apple OpenDoc home page:*  
<http://www.info.apple.com/opendoc/>

*IBM OpenDoc information:*  
<http://www.austin.ibm.com/developer/objects/od1.html>

# Macintosh vs Windows 95

## #15 Infrared Networking

### Summary

Apple's newly announced Macintosh® PowerBook® 5300 portable computers include infrared communication ports that not only let portable computer users share data, but also let the PowerBook tie directly into a local area network, without any cables. This sort of networking without wires is far ahead of what users can do with standard PCs running Windows 95.

This is part of a series of short reports on the contrasts between a Macintosh computer and a PC with Windows 95. To see previous entries in the series, visit us on the Internet at <http://www.apple.com/whymac/>

### The Macintosh Advantage

The PowerBook 5300 portable computers feature 100- and 117-MHz PowerPC™ 603e RISC processors, bringing RISC performance to mainstream portable computers for the first time. That means the new PowerBook computers are ready to run Apple's new RISC-based software environments, including QuickDraw™ 3D. But one of the most exciting features of the new PowerBook computers is their infrared networking capabilities.

Using their built-in infrared (IR) transceivers, the PowerBook 5300 models can share files with each other without cumbersome set-up procedures or complex directory searches. When two or more IR equipped PowerBook computers are placed within range of each other, they automatically recognize each other and create guest folders on each desktop, enabling their users to share files by clicking and dragging.

By comparison, Windows-based IR applications require you to use the directory to make file connections, and you can only make one connection vs. multiple connections on Macintosh systems.

The infrared connector can also be used to hook into an AppleTalk® local area network. All users need is Farallon Computing's AirDock, an inexpensive infrared receiver adapter that connects to the user's desktop computer and its associated networking software. This lets users access servers and printers, send e-mail, check their calendars and do anything else they would normally do with the network, with full LocalTalk® speed (230.4 kbs). It's plug and play networking without the plug.

The computers also come bundled with Callisto Corporation's Super Maze Wars, a network-aware battle game that can also be played over the infrared network.

The new PowerBook 5300 computers range in price from U.S. \$2,200 to U.S. \$6,799, depending on configuration and screen technology.\*

### What It Means For Users

The new PowerBooks make it easier for people to work together. Users in a meeting can exchange files and even share applications. And the infrared networking gives a user many of the benefits of docking the computer, without the need for a docking station. We'll leave it to others to consider the implications of wireless Maze Wars for long airplane flights.

### What About the Future?

Apple's infrared hardware is compliant with the IrDA infrared standard and Apple is working on an IrDA-compliant software implementation for the future.

### Questions or Comments?

You can send e-mail to the Macintosh Platform Marketing team at [competition@applelink.apple.com](mailto:competition@applelink.apple.com).

\*These are anticipated US prices. Apple does not control the pricing charged by resellers. Your price may vary.





# Macintosh vs Windows 95

## #16 Videoconferencing

### Summary

The new Apple® Power Macintosh® 7500 and 8500 models are the first mainstream personal computers that make videoconferencing easy and affordable. They come with virtually everything the user needs built in and are very easy to set up.

This is part of a series of short reports on the contrasts between a Macintosh® computer and a PC with Windows 95. To see previous entries in the series, visit us on the Internet at <http://www.apple.com/whymac/>

### The Macintosh Advantage

Personal computer videoconferencing has a long history of high expectations and poor delivery. The first wave of PC videoconferencing products were both costly and difficult to use. Even today, most of them require additional hardware and software totaling U.S. \$1,500 or more per computer, and installation and troubleshooting is often complex and frustrating.

Apple's new Power Macintosh 7500 and 8500 computers have changed this. They include nearly everything a user needs to quickly and easily begin videoconferencing—QuickTime® Conferencing software, high-speed communications capability and video/sound input. Customers need only attach an inexpensive (approximately U.S. \$100) video camera to the Macintosh system's video-in connector.

With QuickTime Conferencing, users can call other videoconference participants over their existing local area networks. Users can see multiple participants at once, take snapshots during sessions, record sessions, and "whiteboard" with others. (Whiteboarding is when two or more users work together on a shared document.)

QuickTime Conferencing is built on top of the H.320 videoconference standard, which lets Macintosh users connect to many other videoconference systems. Apple is releasing a QuickTime Conferencing upgrade kit for existing Power Macintosh users.

Macintosh computers are uniquely capable of handling videoconferencing applications for two reasons. First, because Apple is the only computer manufacturer to build both the hardware and software, Apple has been able to integrate videoconferencing smoothly into the Macintosh architecture. The second reason is the PowerPC™ chip. Its fast RISC architecture was designed with multimedia applications in mind and Apple thinks it is the most effective mainstream processor for desktop multimedia on the market today.

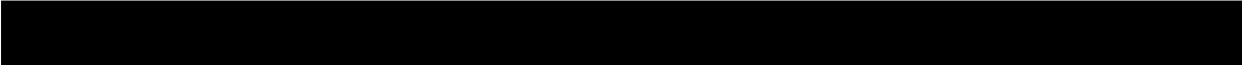
Videoconferencing products in the Windows 95 world continue to require the user to purchase expensive add-on cards and deal with the complexities of integrating the hardware and software themselves. In fact, Microsoft's own Windows 95 compatibility guide reports compatibility problems between Windows 95 and Intel's ProShare 1.8 videoconferencing product.

### What It Means To Users

Apple's goal with the Macintosh is to bring new technologies into the mainstream and make them usable by ordinary people. That's what we feel QuickTime Conferencing has done with videoconferencing. With little or no additional cost and few setup hassles, users can now dramatically improve how they communicate with their colleagues and friends.

- In education, home-bound students will be able to keep up with classes and classmates, students will be able to contact experts at remote sites, and students around the world will be able to work together and get to know each other.
- In the home, users will be able to use QuickTime Conferencing to chat with other Internet users via TCP/IP, even sharing sound and graphics using the shared whiteboard.
- In business, videoconferencing can cut down the cost and hassle of traveling to business meetings. And it can enable workgroups to collaborate even when their members are in different locations.





## What About the Future?

Apple will continue to integrate videoconference technology into future Macintosh models, as well as provide other communication "pipes." For example, Apple is developing an ISDN connection kit, anticipated for release in early 1996, which will allow videoconferencing over standard ISDN telephone lines. Third-party software and hardware vendors are also working on interesting new products and solutions built on top of QuickTime Conferencing technology.

## Questions or Comments?

You can send e-mail to the Macintosh Platform Marketing team at [competition@applelink.apple.com](mailto:competition@applelink.apple.com)

*To learn more about the products mentioned in this document, use the Internet:*

*<http://quicktime.apple.com/qtconf.html>*

# Macintosh vs Windows 95

## #17 Industrial Design

### Summary

Products from Apple are highly regarded for their innovative industrial design. Apple® Macintosh® computers have been selected over PCs to receive many design awards—not merely for their striking appearance, but for functional designs that make them easier to use.

This is part of a series of short reports on the contrasts between a Macintosh computer and a PC with Windows 95. To see previous entries in the series, visit us on the Internet at <http://www.apple.com/whymac/>

### The Macintosh Advantage

For more than a decade, Apple has received many design awards. For example, in its 40th Annual Design Review the industrial design magazine ID cited five Apple products as “Best of Category.” In 1995 alone, Apple received 16 industrial design awards.

Here are a few specific industrial design advantages of Macintosh computers:

- Easy-to-open design. The design of the Macintosh allows you to open its case to access its internal slots much more easily than with most PCs. Many Macintosh systems have no screws to remove, while PCs still have screws to remove when you open the case.
- Easy-access motherboard. The Power Macintosh® 7200 and 7500 computers feature a swing-out tray design which makes the motherboard extremely easy to reach. Components within the computer simply swing out of the way, so that the user can install or remove memory or plug-in cards or do other maintenance.
- Easy-to-connect peripherals. Macintosh cables and connectors are all clearly identified with internationally recognized visual icons. All you have to do is match the icon on the cable with the one on the computer. PCs with Windows usually don't have any icons on their cables.

- Reduced “cable clutter.” Macintosh computers have a mouse connector on the keyboard. PCs usually connect the mouse to the back of the computer, which sometimes requires the mouse cord to stretch a long distance. In addition, Macintosh keyboards can be plugged into some Apple displays; they don't have to be plugged into the computer as PC keyboards do, so you can “hide” your Macintosh system in an out-of-the-way place and only have your monitor, keyboard, and mouse on your desk.
- Ergonomic features. User convenience and ergonomics are high priorities for Apple. For example, Apple's new all-in-one Power Macintosh 5200 has a tilt-and-swivel base, so it can be adjusted for the individual user's comfort. This is especially useful at home, where a child may be working one minute, and a parent the next. We're not aware of any all-in-one PCs that have tilt-and-swivel, which makes them difficult to adjust for different users.

### What Others Have Said

“The PowerBook 540c was upheld by the jurors as the designer's laptop of choice and an illustration of how Apple has maintained a well-designed place in the arena through its immediately identifiable styling. Apple has been skillful in continuing a product strategy, and using advanced styling to stay at the forefront of this genre.” (*International Design*, 1995 Annual Review)

“Setting up a Power Mac is a cinch. You don't have to remove any screws. You don't have to plug in any cards. You just connect the keyboard, mouse and monitor. . . . If setting up a Mac is a matter of pointing and clicking, setting up the Pentium PC was, well, the same old thing.” (*Windows Magazine*)





## What It Means For Users

Apple's advanced industrial design makes the Macintosh very easy to set up, expand, and adjust. Apple's attention to detail insures that the "physical" aspects of using the Macintosh are as easy as the Macintosh's graphical user interface.

## What About the Future

Apple thinks the Macintosh design can get even better. Some Macintosh models are still too hard to open and upgrade. Beyond ease of use improvements, Apple will customize Macintosh products even more for specific kinds of users—in the home, in education, and in business. For example, home use requires a small footprint and a design that fits in with other home electronics devices and Apple has shown a Macintosh prototype that uses a flat-panel display to achieve an extremely small footprint.

## Questions or Comments?

You can send e-mail to the Macintosh Platform Marketing team at [competition@applelink.apple.com](mailto:competition@applelink.apple.com)

# Macintosh vs Windows 95

## #18 P6 vs. Windows 95

### Summary

One of the issues that should be considered by people choosing between an Apple® Macintosh® computer and a PC with Windows is growth path. When Apple made the transition to PowerPC™ RISC technology, we predicted that to keep up, the Windows/x86 world would eventually have to make a disruptive switch in which old applications and operating systems would not take full advantage of the new architecture. That transition apparently begins with Intel's P6 chip, the follow-on to Pentium. *Electronic News* recently quoted Intel officials as saying that P6 adds minimal performance for desktop PCs on mainstream applications.\* Independent testers such as *PC Magazine* say that the P6 may be "the first x86 processor to run slower than its predecessors on existing code." (*PC Magazine*, September 12, 1995)

This is part of a series of short reports on the contrasts between an Apple Macintosh computer and a PC with Windows 95. To see previous entries in the series, visit us on the Internet at <http://www.apple.com/whymac/>

### The Situation

Serious questions are being raised about the mismatch between the next generation of Intel processors, currently code-named P6, and Windows 95. According to press reports, at a recent briefing for industry insiders, Intel reportedly revealed that the P6 actually ran current Windows 3.1 applications slower than a Pentium processor, and Intel reported that running Windows 95 beta, a 150-MHz P6 was only 25% faster than a 133-MHz Pentium. The numbers released by Intel have been printed in publications such as *Electronic News* (July 31, 1995).

Reportedly, the problem is that Windows 95, unlike the Mac™ OS, is not a full 32-bit operating system. P6 is said to work best with complete 32-bit code and in fact, according to reports, it appears to run slower with 16-bit code than a Pentium.

Thus far there has been relatively little coverage on the disappointing performance of P6. Here are statements from a few articles that have appeared in trade journals, with Internet locations for the full text of the articles:

#### **"P6 comes up short in tests against Pentium"**

*Infoworld* reported that after extensive testing a major PC manufacturer found that P6 did not deliver "significant performance improvement" over a Pentium-based PC "when running 32-bit applications in Windows 95." *Infoworld*, August 28, 1995

<http://www.info.apple.com/competitive/infoworld/p6.html>

#### **"P6: The Next Step?"**

*PC Magazine* said that serious power users hoping that P6 would be twice the performance of Pentium should "hold on for a disappointment." *PC Magazine*, September 12, 1995

<http://www.zdnet.com/~pcmag/1415/pcm00063.htm>

#### **"P6: Not as fast as expected"**

*PC Week* warned that users planning on P6 really boosting the performance of applications "may be in for serious disappointment." *PC Week*, August 21, 1995

<http://www.zdnet.com/~pcweek/reviews/0821/tp6.html>

#### **"Preliminary P6 Performance Results"**

A spreadsheet with *PC Magazine* Labs findings is at FTP site: <ftp://ftp.pcmag.ziff.com/pub/pcmag/pclabs/p6data.xls>

The P6 problems also illustrate the inappropriateness of specialized UNIX benchmarks like SPECint for measuring personal computer performance. While the SPECint performance for a 150-MHz P6 was estimated by Intel at 1.6 times the performance of a 133-MHz Pentium, the Windows 3.1 performance reported on a 150-MHz P6 was 15% SLOWER than a 133-MHz Pentium. Apple believes SPEC benchmarks may mislead people about the kind of performance they can expect running normal applications under Windows.





## What It Means For Users

Apple long ago realized that the path to better performance was to move from a CISC architecture to an advanced RISC architecture, PowerPC. It was a big move since it required rewriting the Mac OS so Macintosh users could take advantage of the PowerPC chip's advanced RISC features. But Apple believes it was worth the effort because it now provides Apple's customers with the highest performance mainstream personal computers available.

## What About the Future?

Since Apple coordinates the development of Macintosh hardware and software, the Mac OS has already been adapted to the PowerPC architecture, and Macintosh users are already running their favorite applications on the second generation of PowerPC processors, the PowerPC 603 and PowerPC 604. Meanwhile, Windows users, wearied by the difficult transition to Windows 95, now apparently face yet another migration to something else if they want to take full advantage of Intel's next generation hardware.

## Questions or Comments?

You can send e-mail to the Mac Platform Marketing team at [competition@applelink.apple.com](mailto:competition@applelink.apple.com)

*\*Electronic News, July 31, 1995*

# Macintosh vs Windows 95

## #19 Internet Access

### Summary

Apple® Macintosh® users are heavy Internet users. According to independent surveys, users of Macintosh systems make up between 26% and 40% of the people accessing the World Wide Web from a personal computer.\* Apple believes this is because Macintosh users tend to be early adopters of new technologies, because there are a lot of good third-party Internet-access tools for the Macintosh, and because Apple is committed to supplying the fastest, easiest and least expensive way to participate in the global Internet community.

This is part of a series of short reports that highlight the advantages of a Macintosh computer over one running Windows 95. To see previous entries in the series, visit us on the Internet at <http://www.apple.com/whymac/>

### Internet Options

- Internet for users. Apple now offers customers a growing number of choices for Internet access. Families, students and first-time computer users can choose to access the Internet through eWorld,™ Apple's on-line service. eWorld provides simple, one-click access to the Internet from the friendly environs of eWorld's Town Square—a managed environment of content and community relevant to Apple's key markets. The eWorld software and 10 free hours of access time are now bundled with every Macintosh computer sold in the United States.

Experienced Macintosh computer users and LAN managers interested in standardizing on a single set of tools can choose the Apple Internet Connection Kit for direct access to the Internet. The Apple Internet Connection Kit provides all of the software needed to access the Internet, including Netscape's Navigator software, RealAudio Player from Progressive Networks, and Claris EMailer Lite. The kit also includes the Apple Internet Dialer, software that registers users with a qualified Internet service provider for direct Internet connection; and Apple Guide assistance that walks users through formerly complex procedures.

Netscape also has announced that it will include Apple's QuickTime® video software and QuickTime VR virtual reality software in future versions of Netscape Navigator, and that it will support AppleScript® in the Macintosh version.

- Internet for content publishers. The Apple Internet Server Solution is a virtual "WWW server in a box," an all-in-one solution that consists of a PowerPC™-based Workgroup Server and a CD-ROM that contains all the software a user needs to establish a presence on the Web. It includes WebSTAR (formerly MacHTTP) server software; BBEdit (a hypertext markup language [HTML] editor); Netscape Navigator client software; and MacDNS from Apple. Additionally, it contains HyperCard®, FileMaker Pro Runtime and Butler SQL Runtime software, and sample data for each database; AppleSearch® and AppleSearch CGI; Adobe Acrobat Pro; clickable maps and electronic mail Common Gateway Interfaces (CGIs); a web "page" that points to a number of client helper applications; and customizable web pages and forms.

Starting at about half the price of most low-cost UNIX servers, multiple Apple Internet Servers can be run in tandem to spread out the work, for about the same cost as a single UNIX system. And the Apple Internet Servers require no understanding of UNIX, which can be a major barrier to many potential web publishers.

Another example of Macintosh excellence as a publishing platform for the Internet is Ceneca's PageMill and SiteMill Internet management tools. PageMill is a full WYSIWYG web page authoring tool (no knowledge of HTML required), and SiteMill will automatically update documents as Internet links change or become inactive. Whenever the user pastes a link, renames a file, moves it between folders, or deletes it, the program automatically fixes all links to point to the correct location. A task that literally would take hours for a larger site is completed in seconds with SiteMill. Both products are currently available only for the Macintosh.



(For more information on some third-party Internet tools for the Macintosh, see Macintosh Advantage brief #8: Scripting and More.)

### What About the Future?

Apple is developing products that will integrate Internet access with the flexibility and extensibility of the OpenDoc® component software architecture. This will help users and content developers take advantage of the explosion of new file and data types becoming available on the Internet, and will make it easier for users to integrate Internet access into their everyday work.

### Questions or Comments?

You can send e-mail to the Macintosh Platform Marketing team at [competition@applelink.apple.com](mailto:competition@applelink.apple.com).

*For more information on studies and products mentioned in this article, use the Internet:*

*Georgia Institute of Technology Internet usage study*  
[http://www.cc.gatech.edu/gvu/user\\_surveys/survey-09-1994/graphs/Platform.html](http://www.cc.gatech.edu/gvu/user_surveys/survey-09-1994/graphs/Platform.html)

*Mika Rissa & Co. Internet usage study*  
<http://www.mroy.fi/dec94.htm>

*Apple Internet Connection Kit:*  
<http://www.info.apple.com/pr/press.releases/1995/q4/950807.pr.rel.internet1.html>  
<http://www.info.apple.com/productinfo/datasheets/ss/iconnkit.html>

*Apple Internet Server solution:*  
<http://www.austin.apple.com:80/productinfo/datasheets/ss/internetserverforwww.html>

*Netscape and Apple Internet Connection Kit:*  
<http://www.info.apple.com/pr/press.releases/1995/q4/950807.pr.rel.internet.html>

*Ceneca home page:*  
<http://www.ceneca.com>

*\*Calculation made by Apple, taking Macintosh-based access as a percent of the total number of people accessing the Web using any personal computer operating system. In other words, we excluded UNIX and other non-personal computer operating systems.*

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# Macintosh vs Windows 95

## #20 The Macintosh Strategy

### Summary

We have spent the last 19 notes in this series explaining various Macintosh advantages over a PC with Windows 95. In this note we'd like to step back and say how all those advantages add up to fundamentally change personal computing.

This is the final note in the Macintosh Advantage Briefs series...for now. In the future, we'll continue to let you know our perspectives on what's special about Apple® Macintosh® computers. There are still a lot of Macintosh advantages that we didn't cover in this series—we haven't even touched on Macintosh vs. PC video capture, for example. And we didn't say anything about the relative cost of phone support. (If you buy a Macintosh in the U.S. and many other countries, you get a free 800 technical support number that you can call as much as you want, for as long as you own your Macintosh. From Microsoft, you either call a 900 number which costs \$1.95 per minute, or you call a long distance number and pay toll charges. You might ask yourself why Apple can afford to give away free technical support and Microsoft can't—maybe Macintosh users don't need as much help as Windows users? Or maybe Microsoft is just running short on cash.) We'll be in touch from time to time about this and other issues.

To see previous entries in the series, visit us on the Internet at <http://www.apple.com/whymac/>

### What We've Done

Anything Apple says about its direction tends to suddenly show up in the feature plans of certain other computing companies, so we won't be too specific about what's coming. But in general terms, here's where Apple thinks the marketplace is going, and where we're looking to take the Macintosh platform.

### Technology: The Transition To Next-Generation Computing

The industry is entering two critical technology transitions that will eventually render previous standards obsolete. On the hardware side, everyone in the industry is moving beyond old-style CISC chip technology, on which Pentium, for example, is based, to new architectures that include new instruction sets. The only disagreement in the industry is over what to call the transition. Apple and most other companies call it RISC. Intel calls it "VLIW" or "Beyond RISC." The name isn't critical. The important thing is that we all agree the industry is moving toward new instruction sets, forcing recompilation and rewriting of existing programs.

On the software side, the industry is just beginning the transition to component software (also called object-oriented software). Component software is important because it breaks large operating systems and programs into small modules that are much more easily updated, debugged and changed around. It's the key to the next generation of computer software because it will allow programs and operating systems to be customized more easily, and will enable smaller developers to get back into software development.

Going along with the two technology transitions is a major evolution in the way computer customers think. The general-purpose computer market is dying. Just as the automobile market moved from general-purpose transportation to market segments in the 1920s, the computer market is moving into a much more segmented world today. For example, the needs and desires of home users are very distinct from those of business, and the differences are growing rapidly. One of the biggest challenges for computer companies in the 1990s is delivering very different products to different people.



## Apple's Strategy: Drive the Transitions

The combination of new hardware and component software is essential to deliver the next generation of features that computers users want. A high-performance architecture such as RISC is essential to really make multimedia, 3D, speech recognition, and other leading-edge technologies become mainstream. And the flexibility of component software is required if we're to customize computers for different markets.

Apple believes that the Macintosh platform is for delivering the next generation, because Apple is the only computer company that can change the hardware and software in tandem. So we have already made the transition to next-generation hardware. On the Intel PC side, the hardware transition is just starting with the move to Intel's P6 chip, which reportedly runs many existing applications slower than a Pentium. And beyond that, there's a lot of uncertainty over what other changes P7 and other chips may bring.

In component software, Apple is investing heavily with a number of major partners—including IBM, Novell, Oracle, Adobe, and others—to create an open, cross-platform component software product called OpenDoc.<sup>®</sup> Shipment of OpenDoc on Macintosh is scheduled for the very near future.

And in terms of our market focus, Apple is now focused on creating specific products and solutions that address the needs of different types of customers. Some people have erroneously called this a move into market niches. Apple doesn't view it that way—in reality, the center is evaporating, and in the fairly near future only market segments will be left. Apple's move into segmentation gets the Macintosh platform ahead of that trend.

## Making the Transition Easy

The last time Apple made a transition to a new generation of computers (the 1984 move from the Apple II to the Macintosh), Apple made a number of errors that we're committed not to repeat.

- First, we failed to give Apple's installed base of loyal Apple II users an easy growth path into the next generation. With the move to Power Macintosh,<sup>®</sup> Apple has given its new computers the ability to run old-style Macintosh software, so investments are protected and customers can move easily.
- Second, in 1984 Apple failed to make it easy for DOS users to move to its new systems. This time, we are correcting that by providing a number of products that make it easy to use DOS and Windows files, and even run

DOS and Windows programs, on a Power Macintosh. With this change, DOS and Windows users have, for the first time, a realistic alternative to the Intel/Microsoft standard.

- Third, in 1984 Apple failed to license other companies to make Macintosh-compatible computers. Without alternative sources, prices remained too high, and some customers were uncomfortable making a commitment to the Macintosh platform. Apple has decisively changed that situation by licensing Macintosh-compatible computers, some of which are shipping today. With the 1996 advent of the Common Hardware Reference Platform (our shared base hardware design codeveloped with IBM), very open licensing will be in place.

## How It All Adds Up

One of the most common errors people make when evaluating the Macintosh strategy is to look at one part as if it's the whole thing. So they'll say that Apple's strategy to make the Macintosh successful is licensing. Or that the strategy is PowerPC.<sup>™</sup> In reality, the strategy is the sum of all those initiatives together: the combination of leading the technology transitions (with PowerPC and OpenDoc), driving more segment-focused marketing, changing the Macintosh business model to embrace compatibility and openness, and of course innovating so the Macintosh becomes even more attractive to users. The synergy between those initiatives is much more powerful than any one of them would be alone.

## What About the Future?

It's common in the computer industry today to look on Windows 95 as if it's the endpoint in the evolution of personal computing. Computers have now been perfected; everyone else can just pack up and go home. In reality, the interesting changes are just beginning, and Windows 95 is at best a rest stop on the road to the next generation of personal computing (apparently it doesn't even take full advantage of Intel's latest chip). No doubt eventually the PC companies will sort out this and many other transitional issues they face in the next few years. Someday you'll be able to get next-generation computers from the PC crowd. But Apple believes it can deliver the benefits of the next generation much sooner, with a smoother transition, and with more attractive features. And this time we're not keeping the new generation to ourselves.

## Questions or Comments?

You can send e-mail to the Macintosh Platform Marketing team at [competition@applelink.apple.com](mailto:competition@applelink.apple.com)