

26 Coexisting With PCs

If this were a perfect world, all personal computers would run the Macintosh operating system. Unfortunately, that isn't the case. And odds are that a time will come (if it hasn't already) when you'll want to read some files created on a PC or send some data to someone who uses one. Or perhaps you'll want to put both kinds of machines on the same office network. Or maybe you have a program written for the PC platform's DOS or Windows operating system and want to run it on your Mac.

Not long ago, most of those things were out of the question because of major differences in hardware architecture and operating systems. But today, exchanging data between computer families—or “across platforms”—is commonplace and simple. And Macs and PCs can now share more than data files—look-alike versions of most major applications are available for both systems; you can plug them both into the same networks and electronic mail systems; and they can share peripherals. You can even run DOS or Windows on your Mac.

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What's the Difference?

The difference between Mac and PC hardware boils down to these things: disk formats, file formats, and the way the two systems read and understand information. Here's a brief overview of the obstacles you can expect to run into—and overcome—when dealing with PCs.

Disk Formats (CS)

Formatting, or initialization, is the process by which a computer prepares a disk so files can be stored and retrieved quickly and accurately. The trouble is, Macs and PCs format disks using different filing systems. Without special software, PC-formatted disks cannot be read by a Mac and Mac-formatted disks cannot be read by a PC.



If your Mac isn't prepared to read a non-Mac disk, it displays a dialog box like this one when you insert a DOS disk. With special software such as PC Exchange, AccessPC, or DOS Mounter 95, you can mount DOS disks just like Mac disks.

DOS File Extensions (RSR/HN)

Macs and PCs use different schemes to associate data documents with applications. PCs just ignore the four-letter type and creator codes on Mac documents (see [“File Types and Creators”](#) in Chapter 25). The Mac has no way of interpreting the three-character filename extensions that identify the creating application in the PC world. (See the sidebar [“Mapping DOS Extensions”](#) later in this chapter.)

Mac File Forks (ML)

All Mac application files and many Mac document files consist of two parts: the *resource fork* and the *data fork*. The Mac looks for and uses information about the file in one or both forks. Unfortunately, PCs don't have the same kind of file structure so they don't know how to deal with it. (See the sidebar [“Fork It Over”](#) later in this chapter.)

Other File Format Considerations (ML)

The internal structure of a document may include other information added and understood by the application that created it. This information may confuse other programs. Chapter 25, which deals with sharing files between Macs, discusses this in detail, but this also applies when sharing files between Macs and PCs.

Special Characters

(RSR/ML)



Macs and PCs use different character sets—Macs use an extended ASCII character set of 256 characters, including symbols and accents not normally available on PCs. If you use special characters in a Mac document, they may not display properly when the document is opened on a PC.

Text Characters

(RSR/ML)

PC text files often include additional characters such as *line feeds* at the beginning of lines. These characters may appear as little boxes when the file is viewed with a Mac text editor. Line feeds, as well as hard returns (if present) must be stripped out of a document for proper word wrap. (See [Chapter 8](#) for more information about hard returns.)

Exchanging Files

There are many ways to move data between a Mac and a PC—probably more than you think. Which approach you should choose depends on the distance between the machines, the size and nature of the files you have to transfer, how often you expect to be doing transfers, and your budget.

PC Disks in Mac Drives

(RSR/HN)

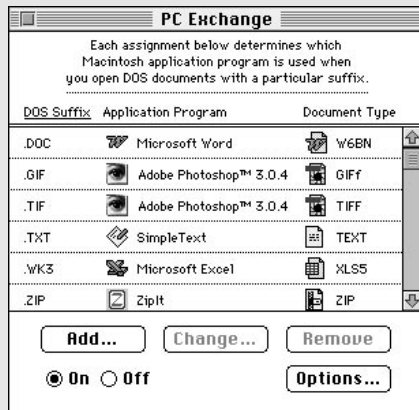
Probably the most common method of transferring information between Mac and PC is “sneakernet”—walking a floppy disk from one machine to the other. When PCs used 5.25-inch floppies, this wasn’t easy, since the PC disks didn’t fit into the Mac’s 3.5-inch floppy drives, and vice versa. In the late 1980s, the PC world finally caught on to the advantages of the smaller disks, and now all new PCs have at least one 3.5-inch drive. But although the physical incompatibility was no longer an issue, the 400K or 800K floppy drives used in early Macs were incapable of reading or writing PC floppies.

With the 1988 introduction of the *SuperDrive*—the 1.4MB floppy mechanism now used in all Mac models—Macs and PCs could share floppy disks. But since the Mac can’t read PC directories without help, you need special software to be able to see a DOS disk’s contents in standard Finder windows and Open and Save As dialog boxes.

Mapping DOS Extensions

(RSR/HN)

All three of the DOS disk mounters discussed in this chapter offer a feature called *extension mapping*. Using a control panel, you can associate a particular Type and Creator code with any DOS extension. You can, for example, assign the Creator “MSWD,” which designates Microsoft Word on the Mac, to all PC files ending in .DOC, the extension Word uses in its



PC and Windows versions; the Type can be set to “TEXT” (plain text) or “W6BN” (Word version 6).

What you get in exchange for the time you spend setting up these mappings is the ability to open a PC file with the Mac application you want just by double-clicking. Otherwise, you’d have to launch the application and use the Open dialog box to open the file.



PC Exchange, a control panel which is now a part of the system software, is one of several programs which lets you map DOS extensions to Macintosh file Types and Creators.

PC Exchange is a control panel from Apple that’s part of System 7.5. When properly installed, it can mount DOS, OS/2, and ProDOS disks on any Mac equipped with a SuperDrive. You work with data on “foreign” disks the same way you work with data on Mac disks.

PC Exchange may be the free way to mount DOS disks, but it has limitations when compared to two third-party alternatives—Insignia’s **AccessPC** (\$90) and Software Architects’ **DOS Mounter 95** (\$100). AccessPC works with System 6 as well as System 7. DOS Mounter 95 allows Mac users to see 31 of the 256 characters possible in the new long filenames that Windows 95 supports. All three can handle SCSI devices such as hard disks, SyQuest, and Zip drives.

Apple File Exchange (RSR/HN)

Apple’s original solution to the problem of reading non-Mac disks was **Apple File Exchange** (AFE), which came free with System 7.1 and earlier. This application let you read DOS and ProDOS disks and translate data to Mac-readable formats. AFE included a text file converter and a MacWrite to DCA/RFT (Document Content Architecture/Revisable Form Text) converter. Other companies, such as DataViz, developed additional translators that show up as options in AFE. (See “Reading Files” later in this chapter.) Apple File Exchange was not particularly user friendly, and it’s now possible to do everything it does more easily with modern utilities. But it can still be useful if you’re using older system software, and you can’t beat the price.

Dealing With Other Media

(HN)

Unfortunately, 3.5-inch disks aren't the only kind of removable media you may have to deal with. With files getting bigger and bigger, high-capacity removable media are becoming more and more common—on both platforms.

Recent versions of Apple's PC Exchange, Software Architect's DOS Mounter 95, and Insignia Solutions' AccessPC can mount PC-formatted removable Zip, Jaz, SyQuest, and Bernoulli cartridges on the Mac desktop. DOS Mounter 95 and AccessPC include software that lets you format DOS cartridges from the Mac; they even let you divide cartridges into separate Mac and DOS partitions. The most versatile cross-platform formatter, however, is Software Architect's **FormatterFive** (\$200), which can apply PC formatting to hard drives as well as to removable media from the Mac.



Mac Disks in PC Drives

(CS/HN/RSR)

PC developers have also been busy coming up with utilities that let you read, write, and format high-density Mac floppy disks on a PC.

Pacific Micro's **Mac-in-DOS Plus for Windows** (\$140) and REEVEsoft's **MacSee** (\$35 shareware, \$80 commercial) are applications—you need to launch them and use their commands to move files. **MacDisk** (\$50) from Insignia Solutions, **Here & Now** (\$90) from Software Architects, and the Windows 3.1 version of **MacOpener** (\$80) from DataViz, are not applications, but *TSRs* (terminate-and-stay resident programs)—the PC equivalent of a Mac system extension.



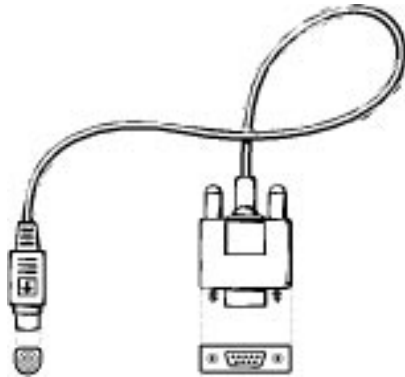
The benefit of a TSR-based solution is that it enables you to open files on a Mac disk from within DOS directories, the Windows File Manager, and the Open dialog boxes of Windows applications. Mac filenames are truncated, but blame DOS for that.

Here & Now and MacDisk are the most transparent utilities under Windows 3.1. MacOpener is included with DataViz's **ConversionsPlus** (\$150), a PC-Mac format translation package for DOS and Windows that is similar to MacLinkPlus ([see Chapter 25](#)). You might find this package an economical solution for doing a lot of Mac to PC translations on a PC.

Direct Cable Connections

(RSR/HN)

Sneakernet is a simple data exchange solution if your files are small and you have 3.5-inch floppy drives on both platforms. But it can be a pain if you have large amounts of data to move, or downright impossible if a 3.5-inch floppy drive isn't available on one or both of the computers. That's when it's time to consider another solution: a direct cable connection between the Mac and PC.



A null modem cable, which you can use to attach a Mac and a PC for direct data transfer, has a round 8-pin connector on the Mac end and a 9-pin, trapezoid-shaped connector on the PC end.

The cable. A *null modem cable* has a round 8-pin end that can connect to a serial port of a Mac and a trapezoid-shaped 9-pin end that can connect to the serial (COM1) port of a PC. Both the modem and printer ports of a Macintosh are serial ports, but in order to use the printer port for a null modem cable, use the Chooser to disable AppleTalk.



The software. Each machine must have software capable of moving text or files through the serial ports and across the cable. Such programs are called *terminal emulators*.

If the PC is running Windows, you may already have what you need. Microsoft includes Terminal with Windows 3.1 and HyperTerminal with Windows 95. Both programs are simple and low-powered, but you can't beat the price. If the machine runs only DOS, you'll need to use a program such as ProComm or CrossTalk.

On the Mac side, any standard communications program will do. If you don't already have one, **ZTerm** (\$35 shareware) is a great bargain.

The connection. With your software and cable in place, set up the connection.

1. Match the settings. Set the communications settings in both programs to 8 data bits, 1 stop bit, and no parity (sometimes abbreviated 8N1). (See Chapter 22 for more information about telecommunications software settings.) Then set the port speed to the highest speed both programs support. When both programs are properly set up and running, you should be able to type comments from one machine to the other.
2. Initiate the transfer. To send files from the Mac, look for a command called "Send File" or something similar. This should display a dialog box similar to the

standard Open dialog in other Mac programs. Then just double-click the file you want to send.

3. Pick a protocol. A *file transfer protocol* is a kind of language both sides agree to speak when executing a transfer. The most common are XModem, YModem, and ZModem. Sending files via ZModem is usually fastest and easiest. (For more information on file transfer protocols, [see Chapter 22](#).)



Receiving files. When receiving files sent from a PC to your Mac, you may need to choose “Receive XModem” or a similar command depending on the protocol used. Software Ventures’ **MicroPhone Pro** (\$150), for one, can start receiving files automatically regardless of the protocol used.

This whole procedure sounds more complicated than it really is. If it doesn’t work for you the first time, invoke some primal scream therapy and give it another try. Once you succeed and you get used to the procedure, you’ll find that it takes only a minute to set up and works pretty well. If you find yourself using a cable connection often, however, it’s time to consider getting a permanent one—a network link.

Modem Connections

(RSR/HN)

By sending computer data across telephone lines, modems let users share files over long distances and across geographic boundaries. They can also help you overcome the barriers that divide computer platforms, even if they’re in the same office. Just use modems to connect the two machines or exchange files by e-mailing them to accounts on on-line services or local BBSs. (Remember, however, that sending large files by e-mail can get expensive when you pay for a service by the hour.)



Connecting a single Mac and PC via modem is similar to linking them via direct cable, with a few extra considerations. Before you start communicating, one person will need to dial the other. You can set up your modem to wait for a call by typing `ATSO=0` in your terminal emulator. You’ll be limited to the maximum speed of the slower of the two modems. The communications software on the Mac side should have MacBinary enabled unless you are sending just text files ([see the sidebar “Fork It Over”](#)). [See Chapter 22](#) for more information about exchanging files via modem.

Network Connections

(RSR/ML/HN)

If you frequently need to pass files between Macs and PCs in the same location, and the files are large, and you can afford to spend a few hundred dollars, tying your Macs and PCs together on a *local area network (LAN)* is worth considering. Although networking Macs is discussed in Chapter 24, here are a few special considerations for adding PCs to the picture.

Hardware. There are several ways to add LocalTalk to PCs. Farallon Computing and CoOperative Printing Solutions produce add-on cards that give PCs a LocalTalk connector. For people who are hesitant to go through the bother of installing a card, Apexx Technology's **PCTalk** (\$200) is a LocalTalk adapter that fits into the parallel port on a PC. Once the PC has a LocalTalk connector, you can add it to a Mac network with Farallon **PhoneNET** (\$20) connectors (or equivalents from other companies) and telephone wire.



Fork It Over

(HN/ML)

All Mac applications and some Mac documents are divided internally into two parts: the *resource fork* and the *data fork*. That's a piece of techie trivia that may be important if you store Mac files on a PC. The trouble is, non-Mac OS computers don't know a thing about forks, Creator and Type codes, or the information the Mac uses to display Finder icons.

If you are just sending a document from your Mac to a PC, don't worry about the extra information—PC programs ignore it anyway. But if you're dealing with a file that's going to be used someday on a Mac, then it's either convenient (for data documents) or absolutely critical (for applications) that all elements of the file be preserved so the file can be reconstructed on a Mac.

MacBinary, a file format created by communications developers, provides a standard way to keep Mac files intact when sending them through on-line services. When you upload a file with MacBinary enabled (turned on), the data and resource forks are combined, along with Finder attributes, into the MacBinary header at the beginning of the file. When you download a file with MacBinary enabled, your terminal emulation software decodes the header, returning the file to standard Mac form.

Mac files posted in on-line libraries are usually in MacBinary format. When you download such files to a Mac with MacBinary enabled, your communications software processes them as they arrive. But when you download MacBinary format files to a PC, it's up to you to make sure the reprocessing gets done. One way to do this is to transmit the file from the PC to the Mac using a communications program on the Mac side that has MacBinary enabled. The effect is the same as if you'd downloaded it from the BBS to the Mac in the first place.

Alternatively, you can bring the file back to the Mac in MacBinary format and do the reprocessing there. Many Mac utilities will do the job, among them a classic application called **BinHex** (\$10 shareware), an Apple File Exchange translator called **MacBinary to Mac** (\$5 shareware), a System 7 drag-and-drop utility called **MacBinary II+** (free), Cyclos Software's **Compact Pro** (\$35 shareware) compressor, and shareware and commercial versions of Aladdin Systems' popular **Stuffit** compression utility. (Compression utilities are described in Chapter 13.)

[For ease of use, I've found Stuffit Expander to be my compression package of choice. Expander lets you keep an icon on your desktop to which you can drag a MacBinary file for instant translation and decompression of the file.—JJ]



GOOD
FEATURE

Both Macs and PCs can also use Ethernet, a faster networking scheme. This option makes sense if you plan to transfer large files frequently, especially if you have a new Mac with Ethernet support built-in. Farallon's EtherWave line and Tut Systems' Silver Streak Connectors make setting up and configuring Ethernet networks *almost* as much a plug-and-play proposition as LocalTalk. Apexx's **EtherChain** (\$300) is an Ethernet adapter that, like PCTalk, fits into the parallel port on a PC, eliminating the need for an internal Ethernet card.

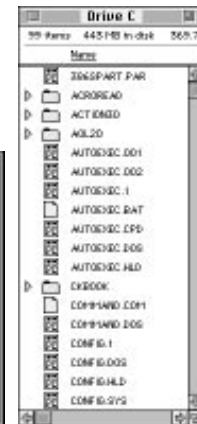
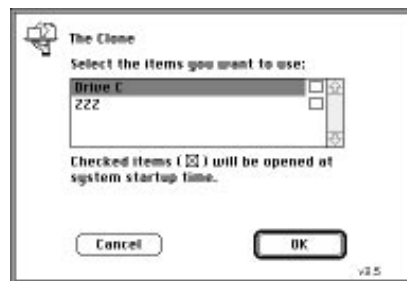
Software. Just connecting the Mac and PC isn't enough. You also need software capable of sending and receiving information over the physical connection.

From the Mac perspective, the easiest way to do this is by making the PC speak AppleTalk. Apple's **AppleShare Client for Windows** (\$200), CoOperative Printing Solutions' **COPSTalk for Windows** (\$180), Miramar Systems' **Personal MACLAN Connect** (\$200), and Farallon's **PhoneNET PC** (packaged with Timbuktu for Windows, \$150) let Windows users share disks and printers with Mac users in a System 7 file sharing-like environment. Both of Apexx's network adapters, PCTalk and EtherChain, are available as "kits" that include Personal MACLAN Connect for an additional \$100, making them economical solutions to networking needs.



HOT TIP

For Macs and PCs connected to a TCP/IP or Novell/IPX network, Farallon's **Timbuktu Pro for Networks** (\$150 for the single-pack Macintosh Edition; \$140 for the twin-pack Windows Edition) is an amazing program that lets the user on either machine see the screen of the other in a window on the desktop. In effect, you can put a Windows screen on the Mac, and vice versa—and remotely control the machine whose window you see.

GOOD
FEATURE

Once you configure a PC for a Macintosh network, it appears in the Chooser. Opening one of its disks or subdirectories displays a standard Finder window of its contents.

PC Server-Based Networks

(CS/HN)

In predominantly PC settings, it's the Mac that must adhere to PC standards. A PC network will most likely be running Novell Netware, the PC world's most popular networking software. Novell offers **Netware for Macintosh** (\$500 for five users; \$3,000 for 200 users), a special add-on that teaches Netware how to communicate with Macs. Once it's installed on a Netware server, Mac users can access the server through the Chooser, and Netware directories look just like Mac folders. You can also take advantage of Novell print queues so that printing can be centrally managed.

GOOD
FEATURE

While Netware for Mac gives you the closest interaction with a Novell server, there are less expensive options. Novell's **Netware Client for MacOS** (distributed free on-line) and Insignia Solutions' **SoftNode** (included with SoftWindows) connect your Mac to a Netware server by emulating a PC on the network.

Microsoft's **Windows NT Server** (\$1,000 for 20 users) is rapidly gaining popularity as the server of choice for networks. NT Server is much easier to set up and maintain than Novell's Netware and comes with built-in support for Macintosh clients.

Reading Files

Just moving a file from PC disk to Mac disk doesn't guarantee that Mac programs can read the file, because the information on it might be stored in a way Mac programs can't understand. Ditto with Mac documents copied to a PC disk.

The problems that arise when dealing with the differences between Mac and PC documents are similar to those discussed in Chapter 25, which deals with sharing files among Macs. In fact, many of the products and interchange formats you might use to solve file-exchange problems among Macs can also help you move files between Macs and PCs.

There are four primary strategies:

- Cross-platform applications—relying on applications that have versions on both platforms
- Translation—using utilities and filters to translate between formats
- Intermediate file formats—saving files in interchange formats understood on both sides
- Electronic publishing or collaboration tools—generating platform-independent versions of your documents

Cross-Platform Applications

(RSR/ML/HN)

Today most major applications are available for both Macintosh and Windows users. In most cases these programs have similar (if not identical) feature sets and file formats on both platforms, so the Mac version can read PC-created files, and vice versa. Choosing the same application on both the Mac and the PC makes sense if you plan to share files across platforms.

There are some caveats, however. First, sharing features and file formats does *not* guarantee that documents will look precisely the same on both platforms. Font differences, which can foul up the formatting of word processing and desktop publishing files, is just one example of the kind of problem you might encounter. And cross-platform sharing isn't always as easy as just opening the other file; you may have to use a special intermediate file format, which makes going back and forth from Mac to PC much less convenient.

Still another complication is that software publishers often allow long lags between Mac and Windows releases of new versions of the same product. The user with the newer version may have to save files in the older format—and therefore may not be able to take advantage of the newest features—if the document has to be portable. If you are running a cross-platform operation, it might be worth holding off on upgrading one side until the other side catches up.

Finally, remember that cross-platform compatibility isn't everything. If you and the Windows user in your life already own different programs, have each mastered the software you've got, and can manage to share the data you need to, then it may not be worth investing time and money in new software.

Translation

(RSR/HN)

A *translation utility* is a software package that reads in files in one format and generates an equivalent—ideally, an exact replica—in a different format. Translators for many common DOS and Windows formats come with some major Mac applications in every category ([see the sidebar “Instant Translations”](#) in Chapter 25). If those translators don't meet your needs, dedicated translation utilities such as DataViz's MacLinkPlus packages, Mastersoft's Word for Word, Equilibrium Technologies' DeBabelizer and DeBabelizer Lite, and TechPool's Transverter Pro (all described in Chapter 25) offer many additional filters.

Intermediate File Formats

(RSR/HN)

Intermediate or *interchange* file formats, which are described in Chapter 25, give you considerable flexibility in moving a document among applications and across platforms. Unfortunately, they sometimes require sacrificing some of the original formatting and detail.

Here's some interchange format information that's specific to Mac-to-PC and PC-to-Mac translations. Don't forget to check Chapter 25 for additional information.

Text and word processing. Although most Mac word processors don't provide a simple way to get rid of line feeds and other extra characters often inserted by PC word processors, text-processing utilities and text editors such as Bare Bones Software's **BEdit** typically do. An elegant solution is **DOSWasher** (\$5 shareware), a drag-and-drop utility that converts DOS text to Mac text and vice versa. Microsoft Word 6.0 is one of the few word processors that recognizes cross-platform text issues and corrects them automatically.



If you're dealing with formatted word processing documents, you can save documents in major word processing document formats like Word or WordPerfect as a kind of bridge across platforms. Most Mac and PC word processors support the popular formats. Word for Word and MacLinkPlus also translate among hundreds of formats; they are particularly useful if you need to convert files from older programs.



Spreadsheet and database information. Tab- or comma-delimited text is a standard format for transferring information from spreadsheets and databases—nearly all such applications let you import and export data in one or both of those formats. The data is stored as ASCII text, the delimiter character separates fields or columns, and return characters normally mark the ends of records or rows.

DIF (data interchange format) preserves values but loses formulas. WKS, the original Lotus 1-2-3 format, preserves formulas. SYLK (symbolic link) format preserves both formulas and text formatting.

Graphics formats. A good way to transfer graphic files between platforms is to rely on applications that read and write multiple formats, like Adobe Photoshop and Deneba Software's Canvas. Another approach is to turn to a utility such as DeBabelizer, Transverter Pro, or Thorsten Lemke's **GraphicConverter** (\$35 shareware).

PICT is not widely supported in the PC world, although a few PC programs can read it and most conversion utilities can translate it into something more universal.

Tag Image File Format (TIFF), the standard for scanned images and bitmaps, is platform-independent, but subtle differences exist between the Mac and PC versions. Photoshop, MacLinkPlus, and **FlipTIFF** (freeware) can help when you are translating TIFF files between platforms.

The EPS (Encapsulated PostScript) format allows Mac and Windows users to save preview images along with PostScript files. Those previews don't travel well across platforms, so don't include them if you'll be handing them to a Windows user.



CGM (Computer Graphics Metafile) is a platform-independent graphics format. It's increasingly common on the PC, but its acceptance has been slow on the Mac. Deneba Software's Canvas is one program that can read and write CGM files.

Compression standards. As with other products, the Mac and the PC have different standards when it comes to compression. **PKZip** (\$50 from PKWare) is the most popular PC equivalent to Aladdin Systems' StuffIt family and Cyclos' shareware Compact Pro on the Mac.

If you receive a file with the suffix *.zip*, it has almost certainly been compressed with PKZip and you will need to decompress it before you can use it. **StuffIt Deluxe** (\$120) has an Unzip command in its Translate menu. **ZipIt** (\$10 shareware) is unique in its ability to create as well as decompress Zip archives.

If you don't have ZipIt and want to compress a file before sending it to a PC user (to save time on long-distance charges, for instance), the developers of StuffIt and Compact Pro have created decompression-only utilities for expanding their archives on PCs: StuffIt Expander for Windows and EXTRAC.EXE.

Electronic Publishing and Collaboration Tools (ML/HN)

Electronic publishing products such as Adobe Systems' **Acrobat Exchange** (\$140) and Common Ground Software's **Common Ground** (\$150) solve the problem of formatted electronic document distribution. These programs let you create cross-platform versions of files that look just as good on a PC as on a Mac. (See Chapter 25 for details on how these programs work.)



Collaboration tools, like ON Technology's **Common Knowledge** (\$790), make it possible for networked computer users on both platforms to create and share documents. The document creator or "owner" allows others to make changes to it. The changes can then be compiled to create a finished document.



With electronic publishing tools such as Adobe Acrobat, you can open a document created on a Mac in Windows (or vice versa) and view or print it with all formatting intact.

Running PC Software on the Mac

The availability of cross-platform applications and the increasing ease of data exchange has greatly diminished the need for Macs and PCs to run each other's applications. But there may still be times when you'd like to run some DOS or Windows software. These days, you can do it right on your Mac.

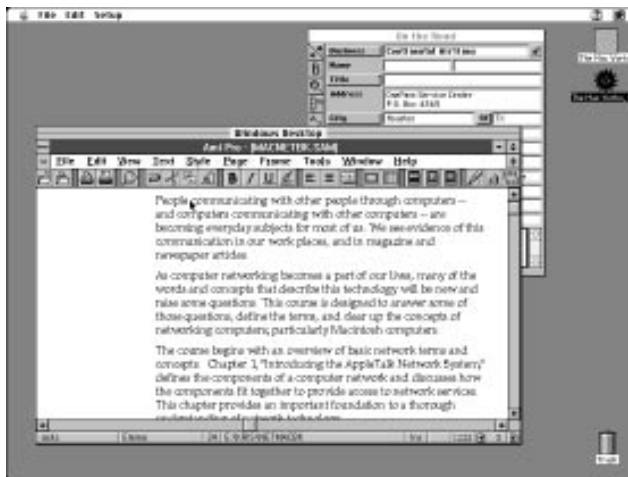
SoftWindows

(RSR/ML)

Insignia Solutions' **SoftWindows for Macintosh** and **SoftWindows for PowerPC** (\$300) use *software emulation* to run DOS and Windows applications on a Mac. These programs fool DOS and Windows into thinking they are running on a system with PC-standard hardware, including an Intel processor—the same processor used in most PCs. Behind the scenes, they translate the instructions issued by the PC software



into terms understood by the Mac. The result is that DOS and Windows software can run in a window on a Mac.



With *SoftWindows*, you can run Windows applications in a window on your Mac.

There are two main versions of *SoftWindows* and they have important differences. *SoftWindows* for Macintosh is for 68040-based Macs, including all Quadra and Centris models and many Performas and PowerBooks. It emulates an Intel 80286 processor, which makes it neither speedy nor compatible with all Windows software. *SoftWindows* for PowerPC

emulates an Intel 80486 processor, which makes it faster and able to run all Windows software. You'll need a PowerPC processor inside your Mac to run it. Both versions come with DOS and Windows. Insignia also offers *SoftPC* and *SoftWindows* for Performa, two versions that run on older Mac models.



The biggest problem with *SoftWindows*—and the most often-voiced complaint—is its performance. When working with demanding DOS or Windows software packages, you may simply find *SoftWindows* too slow.



DOS Cards

(ML)



Several vendors offer DOS cards that fit inside various Mac models. Apple's PC Compatibility Card (formerly the DOS Compatibility Card), Orange Micro's Orange PC, and Reply Corporation's DOS on a Mac card are three examples. These cards put a PC board, complete with processor, inside a Mac, so you have two computers in one box. A simple keystroke toggles you from one operating system to the other. A variety of configurations—processor, ports, SoundBlaster support, etc.—are available on the Orange Micro and Reply cards. A hardware solution like this may be more expensive—typically \$700 or more—but it generally offers better compatibility and performance than software emulation.

Sharing Peripherals

In the past, peripherals that could be used with both Macs and PCs were few and far between. Many PC peripherals attach via a parallel port that is absent on Macs. Mac keyboards and mice, on the other hand, attach via the Apple Desktop Bus, which is absent on PCs. But now, more and more peripherals are learning to work on both sides of the fence. If you have a Mac and a PC, you may want to look for peripherals that can be used with either one. [See the table “Peripheral Considerations”](#) for more information.

Converging Hardware

(RSR)

In the beginning of the chapter, we mentioned that Macs and PCs differ. That situation will change with the release of PPCP (PowerPC Platform, formerly CHRP or Common Hardware Reference Platform) machines due out in the second half of 1996. These machines are intended to run a variety of operating systems, including the Mac OS and Windows NT. They will include PC standards like a parallel port and a two-button mouse as well as Mac standards like ADB and the ever-underutilized GeoPort. With a PPCP computer, you can choose the operating system you want to run—and use either Mac or PC peripherals with it.

Peripheral Considerations		
(RSR/HN)		
Peripheral	Consideration	Products
Modems	Modems have long been one of the least choosy devices when it comes to platform; generally, you just need to specify a Mac or PC cable.	No specific products required.
Printers	Most PC printers require a parallel port. To use a serial PC printer with your Mac, you'll need to get the corresponding Mac printer driver. (See Chapter 21 for more on printing.)	If you're stuck with a PC-only printer, GDT Softworks offers PowerPrint (\$120), a package that provides a serial-to-parallel converter cable, print-spooling software, and drivers for most common PC printers. Chuck's Printer Driver (\$20 shareware) supports many Epson-style printers and can even print in color.
Monitors	Most of Apple's recent Mac models can drive many standard PC monitors (VGA SuperVGA). PowerComputing offers a standard VGA connector on all its computers. Most major monitor manufacturers—including Apple—offer <i>multisync</i> monitors that can accommodate video signals from Macs as well as many different PC video cards.	To use a VGA monitor with your Mac, you need a cable adapter such as James Engineering's MacVGA (\$20).
SCSI Devices	Although SCSI has been a standard way to connect hard disks, CD-ROM drives, and scanners to the Mac since the Mac Plus, it's only recently becoming more common on PCs. If your PC has a SCSI card, there's a chance that it will work with SCSI devices marketed for the Mac. You will, however, still need to get PC drivers, either from the hardware manufacturer or a third party.	No specific products required.
EIDE Devices	The method of choice for attaching internal hard disks and most CD-ROMs to PCs is EIDE (Enhanced Integrated Drive Electronics). EIDE peripherals are usually less expensive than their SCSI counterparts. Most PowerBooks and Performas use EIDE hard disks internally, but there have been no EIDE CD-ROM drives for the Mac yet.	No specific products required.
Input Devices	The Mac's Apple Desktop Bus makes it easy to connect all sorts of graphics tablets, keyboards, joysticks, and trackballs. Many PC-centric vendors, however, have chosen not to use ADB.	Silicon Valley Bus Co.'s KeyStone lets you use PC keyboards and mice with the Mac. Kernel Productions' ChoiceStick , which boasts superb software, supports many joysticks and other controllers for the Sega Genesis.



Editors' Poll: **What Technique Do You Use to Transfer Mac Files to a PC or PC Files to a Mac?**

SA: So far, I've managed to avoid this.

JC: DataViz seems to have it down to a science with MacLink Plus. It's been updated several times over the years and includes translators for practically every application.

TA: Pop in a PC floppy or Zip cartridge.

ML: AppleTalk network with MacLAN on the PC side. Added benefit: My PC can use my Mac's printer.

MEC: Novell Netware file server.

SS: I transfer all files via floppy disk, although I'm planning to run a cable between the two systems' serial ports and use MacLinkPlus/PC for all future Mac/PC projects.

JH: I never use PC files.

DC: I keep both on an Ethernet network (using MacLAN Connect on the PCs) and filesharing is a snap.

BF: For transferring between platforms, I used to use AccessPC. But now that it's built into the system I just use ClarisWorks or GraphicConverter to convert the files from a PC format.

BW: I either save the Mac files onto a 1.44MB DOS diskette and read that on the PC, or I read a Mac high-density diskette on the PC using a utility such as Mac-in-DOS or MacSee, the latter being shareware. I've also used network connections which offered filesharing for both Macs and PCs. This is most convenient for large files.

KT: I've had good luck opening PC WordPerfect files in Microsoft Word. Then I save them as plain text, jettisoning the formatting my clients insist on adding, open them in a text-cleaning utility (Overwood, Add/Strip, or Torquemada the Inquisitor—all available on the DTP Forum on CIS, by the way) and dispose of extra spaces, dumb quotes, hyphens where dashes should be, and so on. What's left is good Mac text, ready for whatever.

Going the other way, I try to use floppies that my clients have formatted on their PCs. I delete the old files and either Save As onto the floppy or drag-copy onto it. Not very sophisticated but it almost always works.

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