

INFORMATION

Support News 

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**“Get Off the Highway
and Into the Alley™”**



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Inside Information...

About the *Information Alley*

The *Information Alley*™ is a publication of Apple Computer, Inc., Support Information Services. The goal of the *Information Alley* is to help you get full use of your Apple computers, peripherals, and software. We make every attempt to include articles that have the broadest audience possible. However, we do sometimes print articles that do not apply to our international readers.

Where to Find the *Information Alley*

The *Information Alley* is available through a variety of online services and Internet list server capability.

For a complete list of where to find the *Information Alley*, call the Apple Fax line at 1-800-505-0171 and request document #20720. You can also get an index to back issues by requesting document #20719.

Optionally, you can search the Technical Information Library; use "information alley" as the search string. Available articles are:

- *Information Alley: Where to Find Online*
- *Information Alley: Index of Vol I Issues*
- *Information Alley: Index of Vol II Issues*

Information Alley Formats

The *Information Alley* is available in these formats:

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Common Ground

Includes the imbedded Common Ground Macintosh MiniViewer. This

format requires no external reader.

SeText

Includes no graphics or special magazine formatting. Formatted to be read with EasyView or any word processor.

Submissions and Letters

We welcome articles of general interest to Apple computer users, letters to the editor, and suggestions for future articles. Send submissions to:

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Passing the Torch



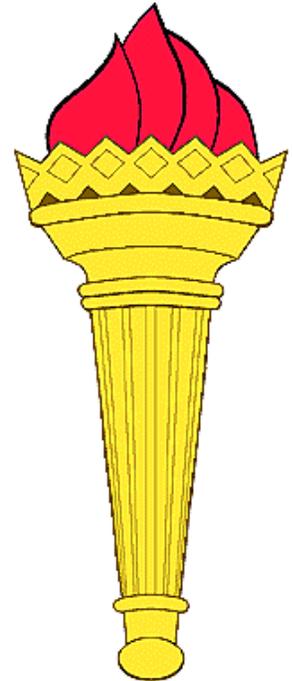
By Janet Christian

I have been given the opportunity to work with the Apple Interactive Media group as a Senior Technical Writer. I will be writing the developer documentation for the Apple Interactive Television product family. I am excited about this new venture and am looking forward to all of the new technology in which I'll be immersed.

I am also sorry to be leaving the **Information Alley** behind. However, I am fully confident in Diana Ezell, who takes the torch from me as the new magazine editor. She has been the Associate Editor for about six months, acting as my backup and helping out during crunch times. She is looking forward to taking over the challenge and excitement of editing the **Information Alley**. Diana will be able to bring new, fresh ideas to its content, format, and production. She has already scouted out several great articles for her first issue.

I have been with Apple for over a year and a half and have been editing the **Information Alley** since my second month here. The magazine started with my boss as a dream and I feel privileged to have had the opportunity to bring that dream to life.

Please welcome Diana into her new position and don't hesitate to provide her with just as much valuable and insightful feedback as you have provided to me. We both want to see the **Information Alley** continue to grow in readership and improve in quality and format.



Locating the Information Alley

We have received several emails from our readers indicating that they are having difficulty locating **Information Alley** issues, the previous issues index, and the list of online locations where the magazine is posted. You can find the most current indexes, as well as up to date information about where to obtain the **Information Alley**, in the Technical Information Library, which is available on eWorld, AppleLink, Compuserve, and the World Wide Web. Enter the search string **kol and kalley**. The applicable article names are:

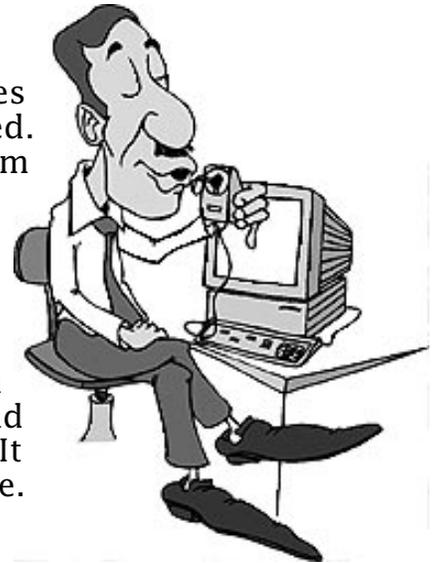
- Information Alley: Volume 1 Issues Index
- Information Alley: Volume 2 Issues Index
- Information Alley: Where to Find Online 🍏

Creating Clickable Sound Files with SimpleSound

By Bryan Fant

The SimpleSound application, which resides in the Apple Menu Items folder on Power Macintosh 7500, 8500, and 9500 (with System 7.5.2 update) systems, creates sound files that must be opened with SimpleSound in order to be played. Double-clicking on these sound files does not play back from the Finder, but launches SimpleSound instead. These sound files cannot be dropped on the System Folder and used as an alert sound.

On the Power Macintosh 7500, 8500, and 9500 computers, the Sound & Displays control panel replaces the current Monitors, Sounds, and AV Setup control panels, providing a simplified interface that makes all of the video, monitor, and sound input and output much more accessible and usable. It does not provide the utility to add sounds to the System file. Sounds can be recorded to the System file using the SimpleSound application.



Sound Types

SimpleSound can create two types of sounds.

SimpleSound Documents

The first type of sound files that can be created are those that are identified by the Finder as SimpleSound documents. These are recorded directly to disk as standard AIFF files. The AIFF files can be opened and used by QuickTime-compatible applications, such as MoviePlayer and Avid VideoShop, as well as standard Macintosh sound editing applications (such as SoundEdit 16).

To create an AIFF sound file, open the SimpleSound application and click on **SimpleSound** in the Apple Menu Items. The Alert Sounds window appears.

Select **New** from the File menu and record a sound as before. The standard File dialog box appears and lets you save the sound to disk.

System Sounds

The second is "System" sounds – standard Macintosh sound files that can be played by opening them in the Finder. SimpleSound can save these directly into the System file of the current System Folder. SimpleSound cannot save these directly as "System" sound files to the Finder.

Steps for Creating Clickable "System" Sound Files

This addresses an issue on how to create clickable "System" sound files.

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To use SimpleSound to create System sounds, do the following:

STEP	ACTION
1	To open the SimpleSound application, choose SimpleSound in the Apple Menu Items. The Alert Sounds window appears.
2	Click the Add... button.
3	Record a sound and click the Save button.
4	Quit all open applications.
5	Open the System file of the current System Folder.
6	Drag the newly recorded sound to another area.

You now have a clickable "System" sound file. These files can be dropped back on to the System Folder to be used as an alert sound. 🍏

The Difference Between a SIMM and a DIMM

By James Ezell

Ever wonder what the difference is between a DIMM and a SIMM?

DIMMs

DIMMs (Dual In-line Memory Modules) provide a wider data path than SIMMs (Single In-line Memory Modules). DIMMs are "wider" than SIMMs in the amount of data they can carry.



SIMMs

SIMMs are installed in pairs on the original Power Macintosh 6100, 7100, and 8100 series computers. These 72-pin, 80ns or faster SIMMs, have a 32-bit wide internal data path. The data bus is 64-bits wide on these computers. Two SIMMs are required to accommodate this data bus.

The Power Macintosh 5200 series computers have a 32-bit wide data bus and can be installed one SIMM at a time. The 5200 series computers have two SIMM slots. Additional memory can be added by filling the other slot with one 72 pin, 70ns or faster SIMM.

The Power Macintosh 7200, 7500, 8500, and 9500 series computers use 168-pin, 70ns or faster DIMMs, which are 64-bit wide. It takes one DIMM to meet the 64-bit wide data bus requirement. The Power Macintosh 7500, 8500, and 9500 series computers also support memory interleaving when DIMMs are installed in pairs. The Power Macintosh 7200 series computers do not support memory interleaving and can be installed one DIMM at a time. 🍏

Video Mirroring Compared to Dual Video

By Robert Dorsett

Video Mirroring

Video mirroring lets you display the same Macintosh image, complete with the menu bar, on two screens simultaneously. The second device can be a monitor, television, or overhead projector depending on the connection you have available. This capability is most useful for those in education or training environments who want to connect large monitors or projection screens to their computer.



Video mirroring is built-in on some PowerBooks, and an add-on option to both the Macintosh LC 580 and Power Macintosh 5200 computers. If you do not have built-in or add-on video mirror support, you can still get the benefits of this type of technology if your computer has a standard DB-15 video-out port, by using the Apple Presentation System or similar products from third party vendors.

Dual Video

Dual video means there are two independent video channels, each with its own dedicated Video RAM (VRAM). On Macintosh computers, this always means there is at least one video card installed. For example, the Power Macintosh 6100 series has built-in video capability, but the addition of a Power Macintosh AV card adds an independent additional video-out capability with a separate amount of VRAM. If you connect one monitor to each port on the Power Macintosh 6100 AV, you would see a "virtual desktop". You could have a window on one screen, your primary display, and a window on the second screen, the secondary display. You can arrange the orientation of the monitors so that the mouse will move between the two monitors at the point where they touch in the Monitors control panel. Only one monitor can display the menu bar, but you can choose which is the main monitor in the Monitors control panel. You do not get two identical images when using dual video.



Due to the highly integrated characteristics of this type of multiple device support, you can theoretically have as many displays as you have slots. You could, for example, populate each available expansion slot on your Macintosh computer with a video card, and have that many monitors creating a large virtual desktop.

There is no processor performance degradation from the use of multiple displays. The relative performance of each display depends on the performance characteristics of the attached video card. 🍏

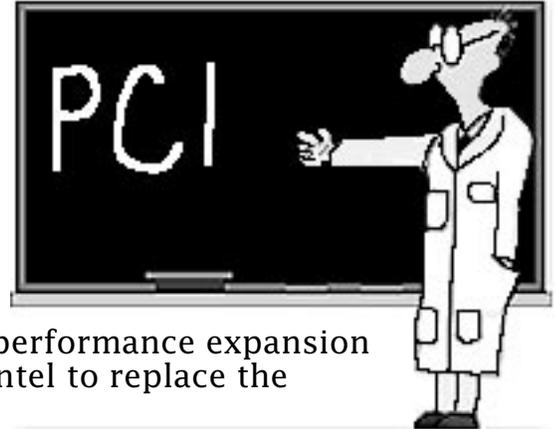
PCI Expansion Bus Architecture

From the Technical Information Library

This article contains basic information about Peripheral Component Interconnect (PCI), why Apple is incorporating PCI into its new machines, a comparison of PCI with NuBus, and answers to some commonly asked questions.

What is PCI?

PCI (Peripheral Component Interconnect) is a high-performance expansion bus architecture that was originally developed by Intel to replace the traditional Industry Standard Architecture (ISA) and Enhanced Industry Standard Architecture (EISA) buses found in many 80x86-based PCs.



To promote its widespread acceptance, Intel turned the specification over to a broad-based committee of industry leaders whose function is to define and market PCI. This committee consists of 12 voting members, 11 of whom are elected on an annual basis, with Intel retaining a permanent voting position. Apple is currently a voting member.

Turning the PCI specification over to a committee opened it up for free licensing and use by any vendor. Vendors have responded with enthusiasm. Currently, more than 200 vendors are producing PCI cards, and more than 500 cards are available for this bus architecture.

Why is Apple Moving to PCI?

PCI is a computer industry standard. By moving to PCI, Apple continues to demonstrate its commitment to "fitting in" in the industry. The majority of personal computers based on 80486 or Pentium processors already incorporate the PCI architecture. Apple's adoption of PCI for its new Power Macintosh computers and Workgroup Servers will support and strengthen the specification's status as a standard in the industry. And, in the future, PowerPC processor-based computers from IBM and Motorola will also use this bus architecture. Apple's full implementation of the PCI 2.0 specification lets any existing PCI 2.0 compliant card work in an Apple computer when combined with a software driver specific to the Mac OS.

Going with an industry standard provides a number of benefits. Because Apple fully implemented the PCI 2.0 specification, in conjunction with a software driver specific to the Mac OS, any existing PCI 2.0-compliant card will work in an Apple computer with PCI. This compatibility gives users of Power Macintosh and Workgroup Server systems with PCI slots access to the many PCI cards available today. It also enlarges the potential market for PCI cards, which should both encourage their future proliferation and drive their cost down further.

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In addition, the PCI bus will allow Apple to use more industry-standard components in the future, which will make Power Macintosh computers and Workgroup Servers even more affordable.

PCI provides high performance. PCI offers significantly higher performance than NuBus, the bus architecture used in previous Macintosh models. More specifically, a PCI card can provide performance up to three times faster than that of a similar card on even the fastest computers with NuBus slots.

PCI is a very scalable technology and will offer further performance gains in the future. Plans for extending the bus include support for 64-bit extensions and a higher clock speed across the bus.

PCI on a Power Macintosh or Workgroup Server will provide outstanding performance, made possible because these computers are designed with performance in mind. More specifically, the fact that these systems contain only PCI slots allows Apple to take full advantage of the power of the RISC (Reduced Instruction Set Computing) architecture, enabling all PCI cards to run at the maximum speed of 33 megahertz. In contrast, many 80x86-based PCs offer mixed slots, which run at a range of speeds.

PCI promotes new solutions. PCI will also attract new solutions to the Power Macintosh platform. Developers of specialized cards who found the NuBus market too small or the technical side of developing for NuBus too complex will find it easy to adapt their products for Power Macintosh computers with PCI. Instead of a massive hardware and software effort to move to Macintosh, these developers will be able to take their existing PCI hardware and simply add a Mac OS specific software driver.

PCI and NuBus: A Comparison

The following chart/table provides a feature-by-feature comparison between the PCI and NuBus specifications:

FEATURE	PCI	NuBus
Bus Speed	33 MHz	10 MHz
Theoretical Maximum Throughput	132 MB per second	40 MB per second
Maximum Number of Slots	4 per bridge;256 bridges	6 per bridge;14 bridges
Real Throughput	90 MB per second writes 45 MB per second reads	32 MB per second writes 20 MB per second reads
Software	Name Registry Open Firmware	Slot Manager
Form Factor	12.283 in. and 6.875 in.	12 in. and 7 in.

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One point that is especially significant is the change in software that the move to PCI represents. All Apple computers with PCI will have built-in Open Firmware software, which is a standard (IEEE 1275) for booting PCI cards in an OS-independent environment. Using Open Firmware gives Apple flexibility in its choice of future operating systems.

Finally, the runtime environment for PCI cards is also being rewritten to allow for growth in the future. The new expansion manager will allow PowerPC and 80x86 drivers to coexist in the PCI cards' ROM. This ability to accommodate multiple drivers permits the performance of I/O activities conducted via cards to improve significantly in the future.

Questions and Answers

Q: Can NuBus cards be used in an Apple computer with PCI slots?

A: Yes. To preserve customer investments in NuBus technology, a NuBus expansion chassis for PCI will be available from a third-party. This chassis will enable users to continue to use their existing NuBus cards in Power Macintosh computers and Workgroup Servers with PCI, if they so choose.

However, because PCI offers both higher performance and more solutions, we anticipate that users will embrace the new bus technology. In addition, the built-in graphics acceleration capabilities of the new Power Macintosh computers should allow these systems to meet the needs of many customers without the addition of an acceleration card.

Q: Can any PCI card be used in a Power Macintosh computer or Workgroup Server with PCI?

A: Yes. However, a Mac OS-, NetWare-, or AIX-specific software driver is required for each card. Many manufacturers of existing PCI cards have already committed to producing these drivers.

Q: What kind of industry support exists for PCI on the Power Macintosh?

A: A number of companies in both the United States and Europe have committed to producing PCI cards for the Power Macintosh. These companies include Apple, Adaptec, Asanté, ATI, ATTO, Data Translations, Diamond Multimedia, DPT, Farallon, FWB, Hermstedt GmbH, Interphase, Matrox, MicroNet, miro, National Instruments, Neutral, Orange Micro, Precision Digital Images, Q-Logic, Rockwell, Second Wave, Spectra Systems, and Yarc.

Q: Will Apple's move to PCI be reflected across its product lines?

A: Yes. Apple will offer PCI not only in desktop systems and Workgroup Servers, but also in PowerBook notebook computers. 🍏

PowerBook Duo – Not Retaining Network Selections

From the Technical Information Library

A PowerBook Duo may not retain its network connection information when it is ejected from the Duo Dock, used, and reinserted back into the Duo Dock. The problem is related to the version of the Network Control Panel currently installed.

When the Network Software Installer (NSI) is used to install network software, the Network control panel is replaced. The NSI 1.2.3 disk installs Network CDEV version 2.3.3, which remembers the network setting. The NSI 1.3 disk installs Network CDEV version 3.0, which does NOT remember the network selection. The Network CDEV version 3.0.2 (from System 7.5, or NSI 1.4.4 and later) remembers the network connection of the Duo Dock when the Duo is re-inserted.

The problem can be worked around by drag copying the 2.3.3, or the 3.0.2 version of the Network CDEV to the Control Panels folder on the Duo.

You can obtain versions of the Network Control Panel which retain the network settings from the following locations:

Network Control Panel v.2.3.3

- System 7.1
- Network Software Installer 1.2.3
- Online services

Network Control Panel v.3.0.2

- System 7.5
- Network Software Installer 1.4.4
- Online services

This problem has been corrected in System 7.5, and the Network Software Installer v1.4.4 and later. 🍏



Tips and Tidbits

In the System 7.5 Launcher, hold down the **Option** key and you can drag buttons (aliases) in and out of the Launcher. [Contributed by Holli Kearns, Apple Assistance Center – eWorld Support.] 🍏

System 7.5 – How “Apple Menu Options” Affects Performance

By Doug Korns

Apple Menu Options (AMO) can slow your system operations when an alias to a hard drive is placed in the Apple Menu Items folder. Placing an alias to a top level folder (with many subfolders and files) in the Apple Menu Items folder can produce a similar slowdown, but more limited impact. Placing many folder aliases or actual folders in the Apple Menu Items folder can also lead to a slowdown, depending on their depth and contents.

There are different methods used in creating a hierarchical Apple Menu.

One method is to acquire the folder information and build the hierarchical menu when you select the folder through the Apple Menu. This makes the menus less responsive, particularly if the path leads off to a mounted server volume. You will see the AppleTalk arrows flash in the upper left corner of your screen as you navigate the hierarchical Apple Menu for a server volume. This is the approach used by NOW menus, MenuExtend from AlSoft, and the shareware extension BeHierarchic, and others.

The approach used by AMO is to pre-build all the hierarchical menus through five folder layers for every folder and folder aliases in the Apple Menu Items folder. If an alias to a hard drive or server volume is in the Apple Menu Items folder, the top five layers of folders are acquired and cached. This is what is done by AMO as the Finder launches and it causes a delay making the Finder Desktop available. The Apple Menu Options then has to continually "watch" for a folder being modified with a file or folder being created or removed and rebuild the cached menu. This approach makes the Apple menu very responsive, because the menus are all cached. It has the long term effect of imparting a system slowdown during such things as emptying the trash, moving folders, and so on.

AMO has a side effect which exacerbates the issue. Since it creates the Recent Servers folder with aliases to mounted volumes, these volumes are also searched and menus cached. The Apple Menu Options Prefs file grows in size as multiple server volumes are mounted and their folder structure cached in this file. This file can grow to 300-400Kb in size.

The workaround for this problem is not to use an alias to your hard disk in the Apple Menu. The slowdown affect can be lessened by limited use of aliases to certain folders that you wish to navigate hierarchically. Another option is to use one of the alternative products with the other method of creating a hierarchical menu. 🍏



About This Macintosh...

Apple Directory
 AppleCD Audio Player
 AppleLink 6.1
 Calculator
 Chooser
 Control Panels
Database Disk Alias
 Find File
 FrameMaker 5
 Jigsaw Puzzle
 Key Caps
 Note Pad
 Recent Applications ▶
 Recent Documents ▶
 Recent Servers ▶
 Scrapbook
 Stickies
 • Shut Down

Desktop Printing – Allocating Memory

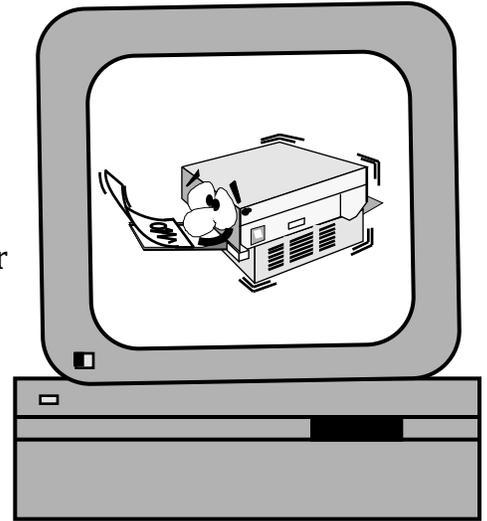
By Denny Carag

This article describes the benefit of changing the preferred memory size of the Desktop PrintMonitor or a given Desktop Printer.

Desktop PrintMonitor's Preferred Memory

The Desktop PrintMonitor requires approximately 6K for each Desktop Printer created on a 680x0 Macintosh computer and 9K for each Desktop Printer on a Power Macintosh computer. The default setting of 160K lets you create approximately eight Desktop Printers on a 680x0 Macintosh and four on a Power Macintosh.

If you create more Desktop Printers than can be supported by the Desktop PrintMonitor, an appropriate alert is given the next time you attempt to print. This alert instructs you to increase the memory size of the Desktop PrintMonitor, but does not indicate by how much. If you follow the 6K per printer for 680x0 Macintosh computers and 9K per printer for Power Macintosh computers rule of thumb when adjusting memory, you will avoid further low memory problems with the Desktop PrintMonitor.



Desktop Printer's Preferred Memory

Increasing the preferred memory size in a Desktop Printer's Get Info window lets the Desktop Printer handle larger, more complex print jobs without asking you to increase memory to the printer. Most of the time, you never have to make adjustments to a Desktop Printer's memory size.

The default memory size for Desktop Printers will be ample for most printing tasks. When it is not, the Desktop Printer temporarily increases its memory size by 50%. If this adjustment is not adequate, a message appears asking if you would like the Desktop Printer to temporarily adjust its size an additional 50%.

You may need to permanently increase a Desktop Printer's memory if you regularly print large, complex documents. A typical document of this type might include a full page, true color image, employ ColorSync, and print to a color laser printer. 🍏

Tips and Tidbits

Losing track of your Stickies? Label Stickies by putting a description/topic of the contents in the first line of the note. Even if you use Windowshade to collapse the note, the first line appears. [Contributed by Holli Kearns, Apple Assistance Center – eWorld Support.] 🍏

Color LaserWriter 12/600 PS Memory Requirements

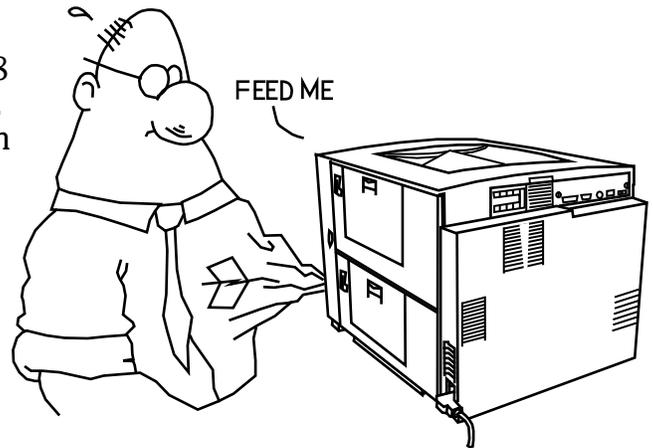
By Joe Wilson

The Color LaserWriter 12/600 PS comes with 8 MB of DRAM soldered on the controller board. There are also two 72-pin DRAM SIMM slots on the board which allow expansion of the memory up to a maximum of 40 MB.

The SIMM slots accept 1 MB, 4 MB, and 16 MB 72-pin 60 ns DRAM SIMMs, 2K and 4K refresh. It is possible to mix SIMMs of different sizes in the two slots.

The table below lists the possible DRAM configurations for 1 MB, 4 MB, and 16 MB SIMMs installed in the printer.

DRAM configurations for the Color LaserWriter 12/600 PS:



SIMM slot J10	SIMM slot J11	Total installed DRAM
4 MB	0 MB	12 MB (shipped configuration)
4 MB	1 MB	13 MB
4 MB	4 MB	16 MB
16 MB	0 MB	24 MB
16 MB	1 MB	25 MB
16 MB	4 MB	28 MB
16 MB	16 MB	40 MB

Note: When installing SIMMs of different capacities, you should install the larger capacity SIMM in slot J10. 🍏

System 7.5.2 Supported Hardware

By Mark Aitala

System 7.5.2 is a hardware specific release that currently runs on the new Power Macintosh 7200, 7500, 8500, and 9500 systems, as well as the PowerBook 190, 2300, and 5300 computers. System 7.5.2 is based on System 7.5.1 with specific enablers for each of these systems.

The components of this release do not function on earlier Macintosh systems. Many of the new technologies included in System 7.5.2 will be rolled into future operating system updates. 🍏

FTP Software's PC/TCP That Works with DOS Compatible Computers

By David Hill

The version of FTP Software's PC/TCP IP suite that works with the Power Macintosh 6100 DOS Compatible computer is OnNet v1.2. This version has been tested with the Power Macintosh 6100 DOS Compatible computer. Manual editing of the **net.cfg** file must be done after installing the software.

Add the following lines to the **net.cfg** file:

```
Link Support
Max stacks 8
```

Add the following lines to the end of the **Link Driver MACODI** section of the **net.cfg** file:

```
Protocol IP 800 Ethernet_II
Protocol ARP 806 Ethernet_II
Protocol RARP 8035 Ethernet_II
```

Note: The software allows installation of either DOS TSRs or vxd files. In testing, only the vxd files were loaded. See the product documentation for further information. 🍏



Tips and Tidbits

“Been There. Done That.” T-Shirts

Many Apple customers saw the **Been There. Done That.** T-shirts at MacWorld and wanted to find out how and where to purchase one. The response was so overwhelming that Apple decided to make the shirts available to customers. The shirt was produced in response to Microsoft's recent Windows 95 release and is a humorous look at how many Windows 95 features have been available in Mac OS since the late 1980s.

The shirt is white, the back lists some Windows 95 features that have been available on Macintosh computers for some time, and the front states "Been There. Done That."

You can call Starting Line at 800-825-2145 or 314-432-1800 to place an order for the shirts. The shirts are \$13.50 each plus shipping/handling (based on weight) and tax (if applicable).

Your order should arrive within 10 business days. 🍏

PowerBook Power and Battery Issues

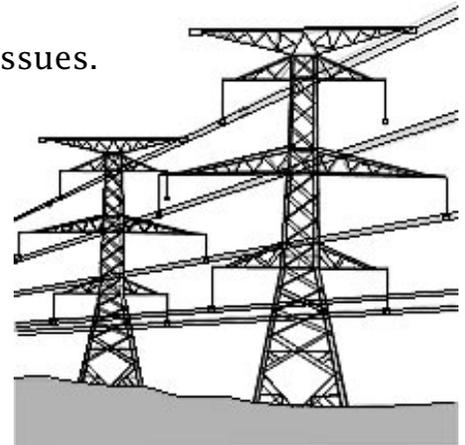
By Chris Magee

Common questions about PowerBook power and battery issues.

Q: I do not seem to be getting the battery life I once did. What should I do?

A: In general, for all PowerBooks experiencing decreasing battery life, you should reset the PowerBook power manager, and check power conservation settings in the PowerBook control panel.

Next, for any battery but the PowerBook 100 battery or the PowerBook 500 series Intelligent Batteries, condition the battery. Operate as long as possible off the PowerBook battery, then shut down and charge the battery overnight. If performance is still not as good as should be expected, you are likely dealing with a bad battery.



Q: What are the various types of PowerBook batteries? Are they interchangeable?

A: All 100 series PowerBooks except the PowerBook 100 use a Nickel-Cadmium (NiCad) battery. The PowerBook 100 uses a lead acid battery. The PowerBook 100 must use a lead acid battery, and no other 100 series PowerBook can use the PowerBook 100 type battery. Other than that, the 100 series batteries are interchangeable. Color 100 series PowerBooks should be used with NiCad batteries model number M5654.

All 200 series PowerBooks use Nickel Metal Hydride (NiHy) batteries. PowerBook 200 series batteries are interchangeable, but earlier 200 series PowerBooks, such as the PowerBook Duo 210 or 230, will require special software to use later model batteries, such as the Type II or Type III battery. Use of a Type II battery requires PowerBook Duo Enabler 1.0 or System 7.5; use of a type 3 battery requires the Type III Battery Enabler, PowerBook Duo Enabler 2.0 and system software 7.1.x, or System 7.5.

All 500 series PowerBook make use of a Nickel Metal Hydride (NiHy) Intelligent Battery. There is only one type of battery for this family of PowerBooks, and it can be used by any 500 series PowerBook.

Q: Through troubleshooting, I have come to the conclusion my PowerBook battery is bad. It is my understanding that this battery contains unpleasant chemicals. How can I safely dispose of this battery?

A: Apple utilizes lithium, lead-acid, nickel-hydride, and nickel-cadmium batteries in our portable products. These batteries should be returned to Apple for recycling or proper disposal. Customers can take their failed batteries to an Apple authorized service provider who can use the Apple Direct Air Shipping and Handling Program to return the failed batteries. If the batteries are physically damaged, do not return them to Apple. Dispose of them according to your local ordinances.

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Q: What is battery memory? Should I buy a reconditioner for my battery to address battery memory?

A: In general, any PowerBook battery except the lead acid battery used by the PowerBook 100 can experience battery memory. Battery memory describes a condition where a battery is only partially discharged, then recharged. Over time, the battery can reach a point where the perceived capacity of the battery is that level to which it has been draining to. If the battery is fully drained periodically, this effect can be minimized or eliminated. There are third-party external battery rechargers that perform a deep discharge of the PowerBook battery as a prelude to charging. Apple does not recommend using these devices, as they may degrade the battery performance over time.

Q: I recently purchased a Type III battery for my PowerBook Duo 230. The battery works fine in my PowerBook, but a red light appears on my external battery recharger when I insert the battery. The recharger works fine with the battery that came with my PowerBook. What could be wrong?

A: First, check the model number on the bottom of your battery recharger. A recharger with a model number of M7778 only charges Type I batteries. A recharger with a model number of M1812 charges Type I, II or III batteries, but may need to be updated to use a Type III battery. If a red light appears when you place a Type III battery into the recharger, the recharger is either the older model or the recharger needs to be updated. To update your battery recharger for a Type III battery, you must have a recharger model M1812. Follow these steps to update the recharger:

STEP	ACTION
1	Shut down the PowerBook Duo computer, make sure the Type III battery and any necessary software has been installed. If you are running System 7.5.1 the Type III Battery extension must be installed.
2	Plug the power adapter into an AC outlet using the power cord that came with the computer.
3	Snap the recharger onto the side of the power adapter.
4	Plug the power adapter cable into the power adapter port on the back of the Duo computer.
5	Turn on the PowerBook Duo to download the update to the charger.

Q: It is my understanding that Apple no longer sells the PowerBook 100 battery. What can I do when my PowerBook 100 needs a new battery?

A: Apple continues to make PowerBook 100 batteries available as a service part. Any Apple-authorized service provider can order a PowerBook 100 battery. The service part number for a PowerBook 100 battery is 661-0782.

Q: I recently purchased a new battery for my 500 series PowerBook. My PowerBook is not charging this battery. What should I do?

A: Try the battery in each of the battery bays. If the battery is not recognized in

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either bay, reset the power manager of the PowerBook. To reset the power manager, shut down the PowerBook and simultaneously press the **⌘-Control-Option-Power** on keys. After this reset, you may notice a difference in the contrast settings on your display. If your PowerBook still does not work with the battery, run the Intelligent Battery Recondition software. It consists of an application, and an extension. The application updates the software that is contained on a chip inside the PowerBook 500 series battery. If this update is unsuccessful, the application recommends that the battery be replaced.

Q: How long can I store my PowerBook battery?

A: Apple uses four different types of batteries in the PowerBook series of computers. All 100 series PowerBooks, except the 100, use a Nickel Cadmium (NiCad) battery. The PowerBook 100 uses a lead acid battery. Both 200 and 500 series PowerBooks use a Nickel Metal Hydride (NiHy) battery. The 5300 and 2300 series use a Lithium Ion (Lilon) battery. A lead acid battery should retain the minimal charge needed to operate a PowerBook 100 for at least 3 months. A lead acid battery that has been stored for 12 to 18 months should still be able to accept a charge. Once a lead acid battery becomes fully discharged, it may experience sulfation. Sulfation occurs when the lead electrodes inside the battery convert to lead sulfate. This destroys the battery making it unable to hold a charge. A NiCad battery should retain the minimal charge needed to operate a 100 series PowerBook for at least 2 months. A NiCad battery stored for 6 to 12 months should still be able to accept a charge. A NiHy battery should retain the minimal charge needed to operate a 200 or 500 series PowerBook for at least two months. A NiHy battery stored for 6 to 12 months should still be able to accept a charge. In the case of the Intelligent Battery used by the PowerBook 500 series, the Intelligent Battery Recondition software is often needed to revive a battery that has discharged fully while in storage. The Lilon battery should retain minimal charge for about 3 months in, and about 23 months out of, the unit. The environmental temperature affects the storage life of any battery. Cool environments are best.

Q: My PowerBook 180 will not start from a battery at all. Should I just buy a new battery, or is there something else I can do?

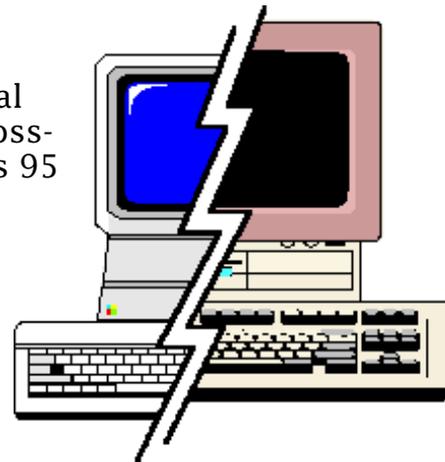
A: Generally when a PowerBook battery goes bad, it provides less operating life over a period of time. If your PowerBook suddenly will not work with its battery at all, this could be an issue with the battery itself, or the logic board of your PowerBook. If possible, try your battery with another PowerBook, or try a verified-good battery in your PowerBook to help isolate the issue. If you are not in a position to try a known good battery or verify your own battery with another PowerBook, there are still some steps you can take. First, reset the power manager of your PowerBook. Instructions for resetting the power manager on various model PowerBooks are available in the online Technical Information Library. Use the search string “power manager and reset” to locate the article *PowerBook: Resetting Power Manager*. Charge the battery overnight following this reset. If your PowerBook still no longer works with its battery after this process, you should seek service. Contact your local Apple-authorized service provider, or call 800-767-2775 for further assistance. 

DOS Compatibility Card – Windows 95 is Compatible

From the Technical Information Library

Apple's Software Quality Assurance team has determined that, based on test results from running Microsoft's official Windows 95 System Compatibility Tests, the following cross-platform Macintosh systems are compatible with Windows 95 when configured with a minimum of 8MB of RAM for the Windows 95 environment:

- Power Macintosh 6100/66 DOS Compatible
- Macintosh LC 630 DOS Compatible
- Macintosh Performa 640CD DOS Compatible
- DOS Compatibility Card for Power Macintosh 6100 and Performa 6100 Series



DOS Compatibility Card Questions and Answers

Q: Are Apple's cross-platform Macintosh systems compatible with the "Plug-and-Play" specification?

A: Like any legacy PC system that shipped prior to the availability of a Plug-and-Play BIOS, the above systems do not pass those specific Windows 95 System Compatibility Tests that require conformance to the "Plug-and-Play" specification. However, unlike other legacy PCs, Macintosh personal computers have delivered full plug and play capabilities for years. In addition, Apple's cross-platform Macintosh systems come preconfigured with features that often require users to plug in a separate card, frequently with configuration problems, on a PC, such as Sound Blaster 16-bit sound capabilities.

Q: How should I configure Windows 95 for printing on Apple's cross-platform Macintosh systems?

A: Since Apple's current cross-platform Macintosh systems do not have a physical PC parallel port, and therefore do not support bi-directional parallel port functionality, Apple recommends that users configure Windows 95 for printing as follows:

STEP	ACTION
1	Open My Computer , open Printers , and add a printer.
2	Open the printer that has been added by double clicking on the icon from the Printers folder.
3	From the Printer menu, choose the item called Properties .
4	In the Properties window, select Details , and then select Spool Settings .
5	In Spool Settings, disable the bi-directional port.

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Q: What about networking support on Apple's cross-platform Macintosh systems?

A: Apple continues to support network client software via the Open Data-Link Interface, or ODI (Novell Netware 3.x/4.x, TCP/IP client software). While native NDIS support is not supported today, Apple expects to provide this capability in the future. Many customers are successfully using ODI-to-NDIS shims today, even though, as with any software translation layer, performance is not optimized.

Q: When I installed Windows 95, the copy-and-paste functionality between the Mac OS and Windows environments stopped working. Is there a workaround?

A: Windows 95 made changes that negated the ability to copy-and-paste data between applications running in the Mac OS and Windows 95 environments. While Apple expects to provide the capability to copy-and-paste between the Mac OS and Windows 95 environments in the future, there are a couple of workarounds today. First, Macintosh PC Exchange and Macintosh Easy Open continue to make it easy for customers to identify, and automatically launch, Mac OS applications to open documents saved in the most popular PC formats. Second, users can create separate drive containers—one with the Windows 3.1 environment and one with the Windows 95 environment—and work within the Windows 3.1 environment when they need to copy-and-paste data between the Mac OS and Windows environments. 🍏

MAE and Solaris – Mounting CDs

By Mark Hansen

To have CDs mount in MAE while running Solaris 2.4, follow these steps:

STEP	ACTION
1	Verify that Volume Manager patch 101907-05 has been loaded. The following UNIX command lists all installed patches: /etc/showrev -p
2	Under Solaris 2.4, modify the macdisk.solaris file in this manner (scsi6 should be replaced with the correct SCSI ID# of the CD Drive): scsi6:removable:ro:/vol/dev/aliases/cdrom0



Note: After inserting a CD, wait five seconds before attempting to mount it in MAE. The Volume Manager first must create an entry in aliases for **cdrom0** before MAE can read the alias directory.

This properly lets MAE mount CDs without modifying the **/etc/vold.conf** directory, letting users mount UNIX CDs with Volume Manager. 🍏

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