Beating the **system**

New Mac-man, Howard Oakley, tackles System 7.5.3, looks at working with other architectures, and gives a mouseless driving lesson.

Having been handed Chris Cain's Hands On column, my intention is to maintain the high standards set by Chris in the past. I first wrote for *PCW* ten years ago and migrated to the Mac, in 1988, to develop software. Since then I have been an ardent Mac user, programmer, and evangelist.

Like Chris, I welcome your submissions and comments, and will endeavour to keep you productive, enthusiastic and informed. Now, to business…

System update

System 7.5.3, alias System 7.5 Update 2.0, rumbles on. In the US, problems have meant a further update to the update, but some of these repairs appear already to have been incorporated into the British English version.

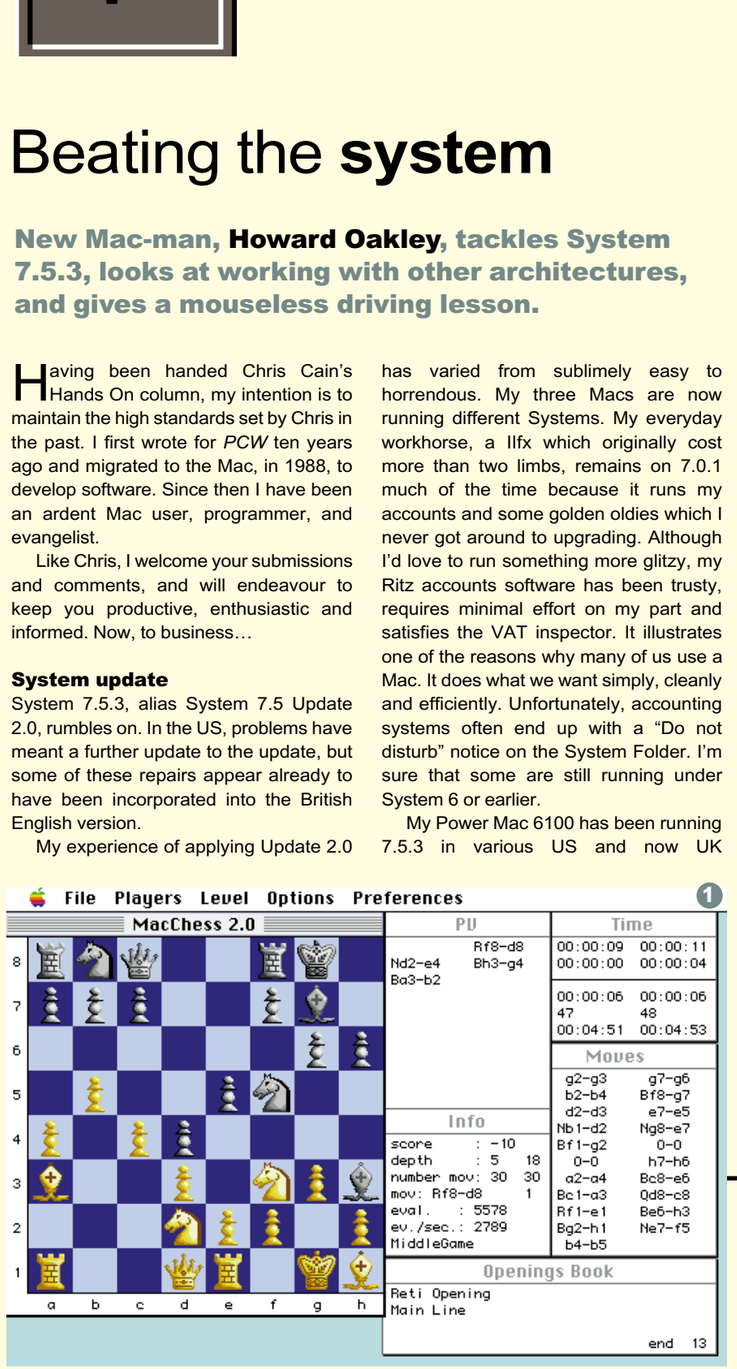
My experience of applying Update 2.0 has varied from sublimely easy to horrendous. My three Macs are now running different Systems. My everyday workhorse, a IIfx which originally cost more than two limbs, remains on 7.0.1 much of the time because it runs my accounts and some golden oldies which I never got around to upgrading. Although I'd love to run something more glitzy, my Ritz accounts software has been trusty, requires minimal effort on my part and satisfies the VAT inspector. It illustrates one of the reasons why many of us use a Mac. It does what we want simply, cleanly and efficiently. Unfortunately, accounting systems often end up with a "Do not disturb" notice on the System Folder. I'm sure that some are still running under System 6 or earlier.

My Power Mac 6100 has been running 7.5.3 in various US and now UK incarnations since Update 2.0 first hit the freeways and FTP servers. The only problems I have encountered were with disk drivers and screensavers. Ever since I first hooked up an external hard disk to it, then running System 7.1.2, I had infrequent and apparently random crashes. Once Update 2.0 had been installed, they became more frequent. Installing a clock accelerator to boost it to 84MHz made the crashes so common that they halted useful work. In the end, FWB's Hard Disk Toolkit solved it and I have put the rabbit's foot and other lucky charms away now.

The issue of hard disk drivers illustrates how far we have come, willingly or unwittingly, from Apple's original concept of the Mac as the simple-to-use computer. Before my IIfx I had a succession of Macs, from the SE to the IIcx, and relied almost entirely on Apple-supplied internal hard disks. If your Mac is equipped only with a standard Apple internal hard disk, the instructions provided with Update 2.0 to update its disk drivers should work a treat. With any luck, you shouldn't have to invest in a third-party "techie" product like the FWB Toolkit.

The increase of third-party hard disks has supported a whole industry producing software drivers. They are extremely low-level products which sit in between the System software, notably SCSI Manager, and the disk hardware, converting System calls to read and write from the disk into commands for the disk itself.

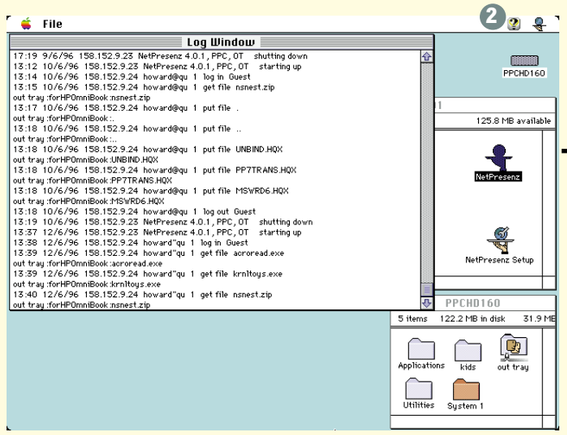
The one thing which was still troubling my Power Mac was its screensaver. Software which automatically blackens the screen is probably unnecessary. Modern colour monitors, with the excellent Sony Trinitron tube, do not appear to suffer from "burn in", even after years of use. After Dark is enormously and justly popular yet it does not seem to get on well with some Power Macs, particularly my 6100. Having tried a range of alternatives, such as the shareware application, Eclipse, I thought that I had found the answer in the freeware port of the Unix utility, "cron" (by Chris Johnson). But this, too, crashed every once in a while, typically when the IIfx accessed a shared folder on the Power Mac. Using the cron screensaver on its own resolved that last problem.



(1) *Several chess games have fallen by the wayside as a result of recent hardware and System software introductions. One which has proven robust, attractive and a worthy competitor is WA van Beusekom's MacChess 2.0, for which he seeks only appreciative email or postcards*

The other problem with Update 2.0 is communicating. If you have a PCI Power Mac you'll understand this only too well, having lived through Apple's struggle to get Open Transport fully usable. But it is not that simple, as there are still plenty of printers, modems and other peripherals which leave Open Transport standing.

A disappointing loss is Hewlett-Packard's fine PostScript driver for its older DeskWriter printers, such as the 560C. While HP has updated the regular non-PostScript driver, those of us who forked out the extra money to get excellent results from Illustrator or Freehand have been left out in the cold with a product which doesn't work with Open Transport. There isn't any promise of a future revision resolving this. Some smarter modems which use



(2) *For a mere $10, Net-Presenz is a remarkably simple FTP server running native on Power Macs*

System-level drivers have also broken, although their manufacturers are being much more conciliatory.

Working with PCs

Networking peer-to-peer in a purely Mac workplace couldn't be simpler. The only "nasty" likely to sneak up and ruin your day is when some of your Macs undergo a System upgrade: for instance, System 7.5 Update 2.0.

Before trying this, you need a copy of the current Network Software Installer, a single floppy available from Apple dealers. Install this on the other Macs and it will ensure that their AppleTalk drivers and other networking software are compatible with those undergoing the full upgrade. Using Macs networked among other Macs is often simpler than using other machines, such as IBM compatibles and Unix boxes, whether from a Netware or an NT server. Your only potential problem is making sure that system administrators become Mac-literate and don't try to abandon you.

Bringing PC clients into an all-Mac shop can be more fraught. I recently added an HP OmniBook to my little farm of Macs, but I don't wish to run a PC server or install more layers of networking software. The answer to this dilemna lies in TCP/IP protocols, which are ably supported by both MacOS and Windows 95.

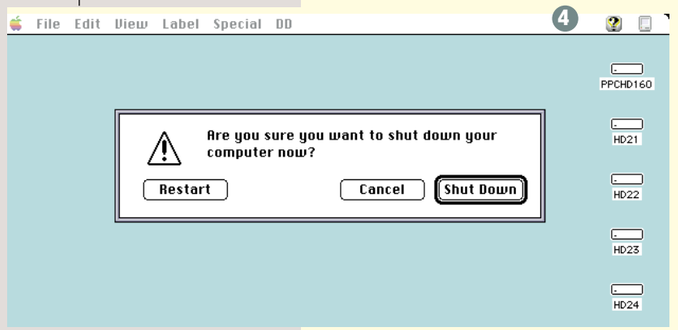
First, I turn file-sharing on so the Power Mac 6100 is offering at least one folder to enabled users. If necessary, I open the TCP/IP control panel and make sure that

Mouseless Mac-ing

Apple's philosophy is that you drive your Mac with a mouse. There are occasions when a keyboard can be easier, or you might have started your Mac with the mouse disconnected or dysfunctional. Trying to plug your mouse, or any ADB (Apple Desktop Bus) device, back in while the Mac is powered up risks serious hardware damage. You must shut down your Mac before messing with the ADB chain. But without a mouse, how can you do that? Here are some essential keyboard shortcuts to save you time and the occasional motherboard!

Power key	Brings up a restart/shutdown dialogue (most Macs, System 7.5.x); *see (4), below*
Cmd-Opt-Esc	Forces application to quit
Cmd-Shift-Power	Forces Mac to restart
Dialogues:	
Return	Accepts default button
Cmd-. or Esc	Cancels
Tab	Moves to next entry field
Shift-Tab	Moves to previous entry field
Finder Views:	
Arrow (cursor) keys	Moves selection
Cmd-RightArrow	Expands folder in list view
Cmd-LeftArrow	Collapses folder in list
Cmd-Opt-RightArrow	Expands folder fully in list view
Cmd-Opt-LeftArrow	Collapses folder fully in list view
File save or open dialogues:	
Cmd-UpArrow	Moves up one folder level
Cmd-D	Goes to Desktop
Up and down arrows	Moves up and down file list
Cmd-N	Creates new folder (save dialogue only)

(4) *It's make your mind up time*



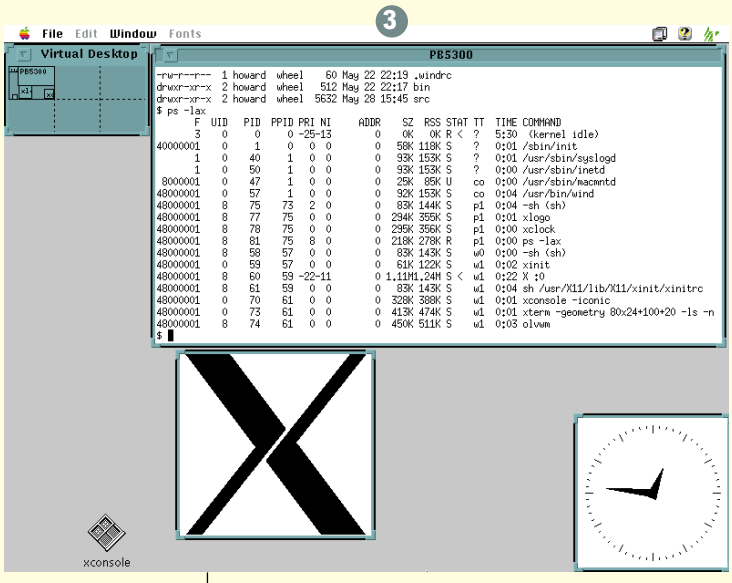
the Mac server has a valid IP address, such as 129.129.1.1, offered over the Ethernet, and does not rely on a name server. This also loads the TCP/IP driver into the memory. It is worth noting that one of the few remaining problems in Open Transport 1.1 is that repeated loading and unloading of this driver can lead to memory fragmentation and crashes. Whether you use it for local networking or dial-up connections to the Internet, if you use it often, opt for it to be permanently loaded into the memory.

Next, I start up NetPresenz 4.0.1, a ridiculously cheap shareware FTP server written by Peter Lewis. This is easily configured to allow named or guest (anonymous) access to all shared volumes or folders. All that remains is to start up an FTP client on the OmniBook. Under Windows 95 you will either have to go for the overkill of a full internet suite such as Microsoft's Internet Explorer or Netscape Navigator, or revert to power-user mode by running the command line FTP program at an MSDOS prompt. Something with the simple elegance of Fetch, which is Dartmouth College's freeware FTP client for the Mac, would fill this obvious gap.

Working with Unix

Connectivity with Unix systems is not a problem. If you're content with the basic functions expected of an internet connection, then the combination of System 7.5's MacTCP or 7.5.3's Open Transport and the rich array of public domain and commercial tools, is pleasant and productive.

Things are different if you need to run an X server. In its curiously inverted terminology, an X server runs on the client computer. Apple's MacX is long in the tooth and, until recently, WhitePine's eXodus was the only contender. Now, Tenon Intersystems has launched a mature competitor, XTen, based on its long experience with Mac-based versions of Unix. True to the Unix and X mould, it is profligate with resources and my Power Mac's humble 16Mb of memory were insufficient to let it fly. Once given the freedom of 32Mb on my PowerBook 5300ce, it quickly got airborne and offered a full implementation of X11R6 with Motif and window managers, various.



(3) *PowerMach Ten is an implementation of BSD 4.4 Unix, including X11R5. XTen is an X11R5 server which can run with PowerMach Ten or as a standalone X server*

Tenon is most famous for its implementation of Unix for 68K and Power Macs. As Apple decided not to port its own A/UX to the PowerPC processor it was, until recently, the only way that you could run Unix on a Power Mac. If this seems a bizarre intention, remember that Macs are commonplace in further education, particularly in the US.

Power MachTen is a delight to use. Running on top of the Mac file system in its own windows, you can even build hybrid MacOS and Unix applications using Metrowerks' CodeWarrior development system. If you discover that the only signal processing application requires Unix, it can be a lifesaver.

Previous efforts to build a public domain Unix for Macs had been less than ideal. MacBSD runs on a narrow range of 68K machines such as the IIci, although it is free. In the last few weeks, the first developer release of a Mac implementation of Linux, mkLinux, has become available. If you don't pay for your internet connection, you can now obtain it by FTP. Faced with a minimal download of 40Mb, I'll settle for the CD-ROM version from Prime Time Freeware, a specialist US publisher whose list includes such gems as a two-volume collection of artificial intelligence software.

The other small snag with mkLinux is that it only supports the first wave of non-PCI Power Macs.

Copland

All this concern would have been irrelevant had Apple shipped multi-OS machines running Copland, or MacOS 8 as it is officially known. Long delays in finalising the specifications of what were initially PREP, and are now PowerPC Platform (PPCP) computers, along with delays in completing its micro-kernel architecture OS, were the last thing that Apple needed. It had to get the specifications right, or risk disaster.

The annual gathering at Apple's recent worldwide developer's conference had been expecting to receive alpha releases of Copland and were miffed to be told that not even a preview version could be provided. But they were given the first set of documentation, and movies illustrating its new look and feel.

Over the coming months, I will be discussing the changes that MacOS 8 will bring and helping you to prepare your Macs for next year's upgrade. The chances are that your first view has been through Greg Landweber's shareware extension, Aaron (US composer Copland's first name). Ingenious though this is, it cannot portray the way in which MacOS 8 will allow users to set up their own personalised interface. Apple will call these functions "Themes". While I am sometimes aghast at the riotous use of clashing colours and customisations seemingly enjoyed by some users, Themes will provide the interface you want, even if it does ape Windows 95.

PCW Contacts

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Apple Computers 0181 569 1199; www.apple.com; www.euro.apple.com
FWB Hard Disk Toolkit costs £129.25 (incl VAT) from MacLine 0181 401 1111
Cron, NetPresenz, Fetch, MacChess and **Aaron** are on major online services
Tenon products from Shute Associates 01223 514531; and Full Moon 01628 660242
Prime Time Freeware (001) 408 433 9662; email info@ptf.com; www.ptf.com