Packing it in

VoiceType Dictation is just one of the attractions of Merlin (the new version of Warp), and also why it needs a hefty system to support it. Terence Green speaks out.

I 've been getting some hands-on experience with Merlin lately and thought a couple of tips for readers contemplating the upgrade when it arrives might be appropriate. Get more memory. Get a bigger hard disk.

The addition of OpenDoc, Java, network connectivity, VoiceType Dictation and an expanded Bonus Pack takes a full install of the beta to nearly 30 megabytes, and speech dictation and navigation really churns the swap file on a 90MHz Pentium with 16Mb RAM, the proposed recommended minimum when it hits shrinkwrap.

One expects a beta not to be optimised, but I've decided to upgrade from my old 66MHz 486DX2 and 16Mb RAM to a Pentium 100 with 24Mb for regular work. Speech dictation and navigation is something I'd really like to use on a daily basis, especially as I'm starting to suffer pains in my arms from using a mouse to travel around the web. My use of a mouse has increased considerably over the last few years through using the internet and I've been remiss in not paying more attention to proper posture. Merlin's support for speech-enabled Web browsing is another plus that I hope will reduce mouse use.

CD CONTENTS

This month the OS/2 content for the cover CD contains several video drivers, printer fix-packs, some games demos, and a number of utilities. Take a look in the Resources section under the OS/2 category. All files are contained in the file CD30S2.ZIP.

The trouble is that as soon as VoiceType Dictation comes into play you're looking at about another 8Mb RAM to support it properly, so I don't think my old 16Mb system is going to be good enough for the work I do now plus VoiceType Dictation. I'm only sorry that a week after I bought the RAM, I could have bought twice as much for the same price. Buy now while stocks are cheap. It'll also help on those occasions when I run Windows 95 and Windows NT.
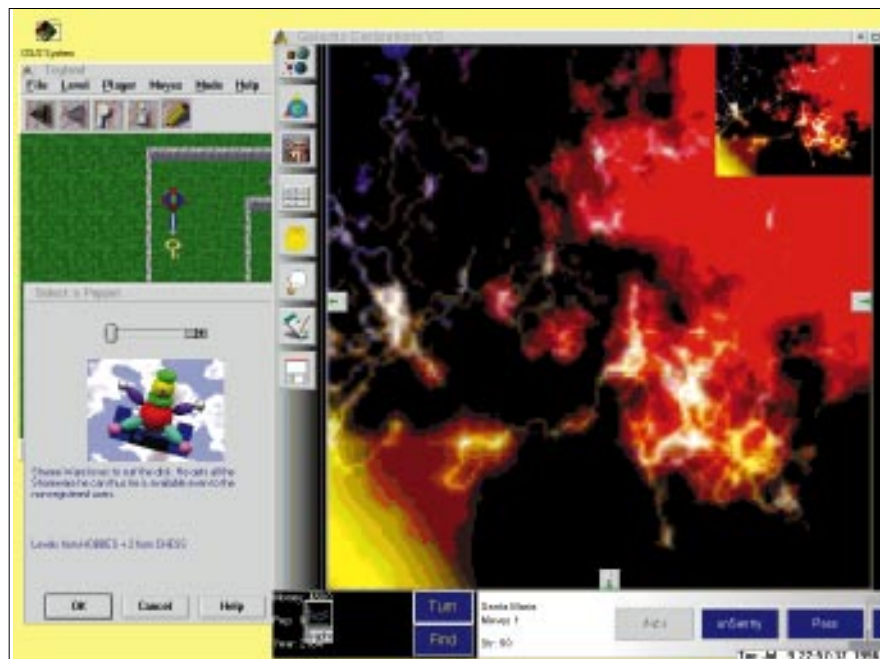
Slamming in the RAM helps, but tuning the system for performance is an important consideration too. There are a number of simple edits to the CONFIG.SYS that can speed up the system and make it run noticeably smoother. The CNFGINFO

IBM's developer support has never been good enough to encourage lots of general business applications, but games developers abound *(see cover CD)*

freeware tool which was on the *PCW* July cover CD is a really useful tool to have around, as you can work your way through CONFIG.SYS optimising the way your system uses memory.
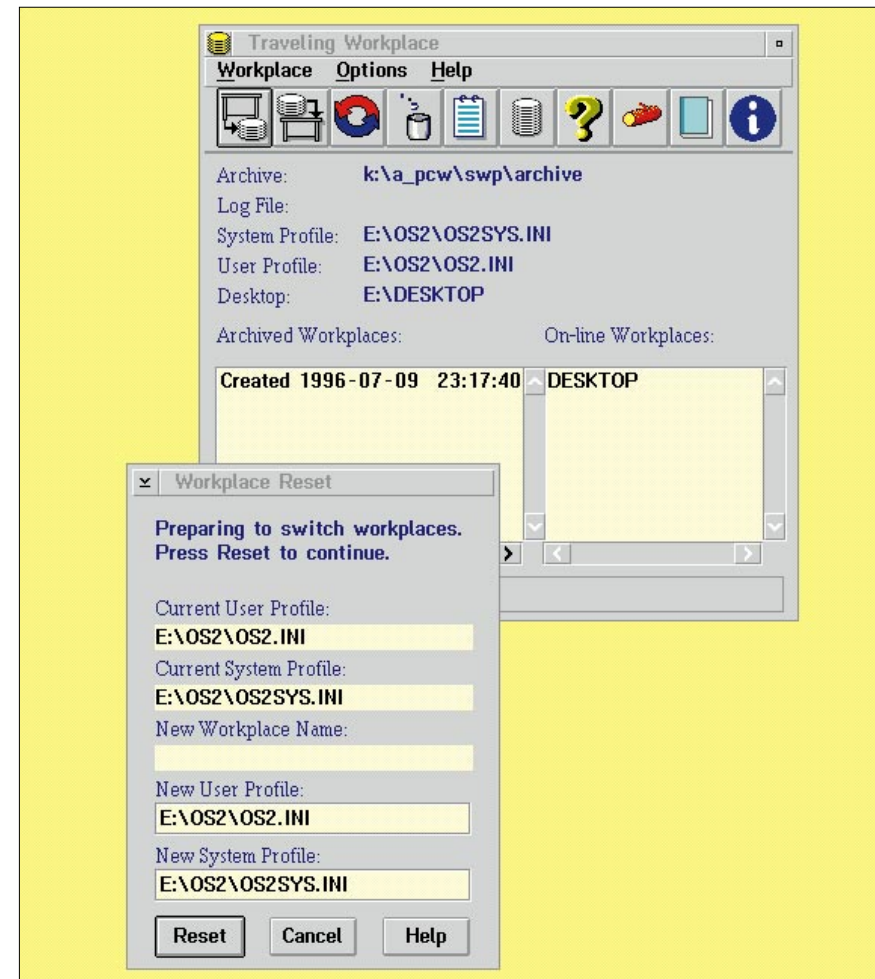
GO SCSI

Before jumping into the nitty-gritty, though, bear in mind that there's one other guaranteed way to boost speed other than adding RAM, and that's to run OS/2 from a SCSI drive. The fastest Enhanced IDE drives can have a theoretical maximum throughput of about 16Mb/sec but real throughput will be much lower because the IDE controller really chews up CPU time. A modern two-channel PCI busmaster SCSI-2 controller such as the Adaptec 3940 can manage 20Mb/sec through using both channels.

A SCSI adapter costs a bit but they're a much better match for multitasking, multi-threaded 32-bit operating systems such as Warp and Windows NT because the intelligent SCSI controller takes over much of the CPU work involved in passing data between the SCSI interface and the

Traveling Workplace goes beyond the basic desktop archiving system in OS/2 Warp to enable multiple archives of the system startup and desktop files that can not only be saved and restored but also swapped around on a whim *(see cover CD)*
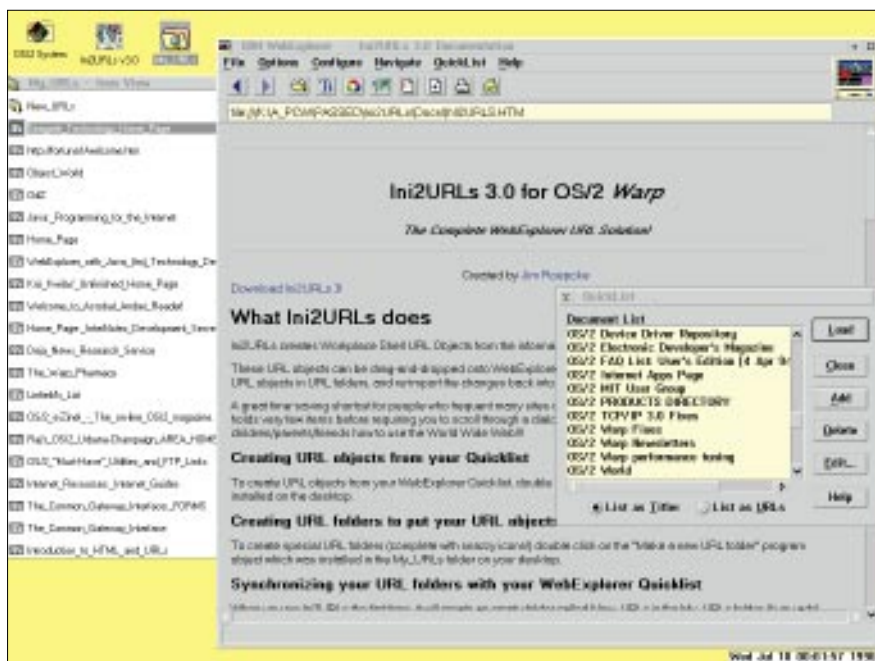
attached drives. Busmaster SCSI host adapters are even better: they pass data directly between system memory and the SCSI bus, almost entirely cutting out the CPU as middleman. Most EIDE drives use programmed input/output (PIO) which keeps the CPU occupied throughout data transfers.

A well-known Warp performance tip is to use multiple drives and to distribute operating system, applications and data across two or more drives. With multiple IDE drives this doesn't produce much benefit because the EIDE interface allows one active device at a time. By contrast, a dual-channel SCSI-2 host adapter with two or more drives can keep several drives active, ensuring a peak data flow of 20Mb/sec with 8-bit Fast SCSI-2 drives. For servers, a Fast & Wide (16-bit) SCSI host adapter can deliver 40Mb/sec over a PCI bus.

The first item to put on a separate drive if you have two or more is the swap file (SWAPPER.DAT). To do this, edit the "SWAPPATH =" line in CONFIG.SYS and

point it at a different drive to that on which the operating system is installed. The general rule is to have the swap file on the most used partition on the least used hard drive. Put it in the root directory rather than a sub-directory, and it's better if it's an HPFS partition. The change will take effect after the next reboot. Remember to delete the defunct SWAPPER.DAT at the old location — Warp isn't *that* smart.

While you're editing SWAPPATH, increase the size of the second numeric variable in order to pre-allocate a swap file that approximates the size the swap file reaches when you're running your usual applications mix. Type HELP SWAPPATH at an OS/2 command prompt for a detailed explanation. You can either monitor SWAPPER.DAT manually with DIR commands (its default location is x:\OS2\) or use a swapfile monitor such as DINFO (included on the July cover CD). Pre-allocating a larger SWAPPER.DAT slows down boot time a little, but you'll feel the difference when you start to run out of

Ini2URLs takes the Web Explorer Quicklist and automatically creates WorkPlace Shell objects that can be organised in URL folders and dragged onto the Explorer to go to a web link *(see cover CD)*

memory and OS/2 doesn't have to expand the swap file immediately.

Cache size
After tinkering with the swap file, the next step is to adjust the cache buffers. Warp's default settings, which are set in CONFIG.SYS, are fairly conservative. The DISK CACHE statement applies to FAT partitions while the CACHE parameter in the opening IFS statement applies to HPFS partitions. The CACHE parameter controls the HPFS cache. In systems with 16Mb RAM or more, set it to 2048 (Kb). With 8Mb RAM set it to 1024. Or check with the CNFGINFO utility for more detailed advice.

FAT drive cacheing (but not floppy disk drives) is controlled by the DISKCACHE statement in CONFIG.SYS. In Warp it defaults to DISKCACHE=D,LW. LW enables write-back cacheing while "D" stands for a set of defaults which are dependent on the amount of system memory (RAM) in the particular machine. Replace "D" with a specific number, 1024 if you have 16Mb RAM or more and 256 for 8Mb RAM.

Windows performance
One of the great benefits of OS/2 is its ability to run the majority of DOS and Windows applications alongside OS/2 applications. But sometimes Windows applications performance can be sluggish. If you find that actions such as scrolling speed up when you "twitch" the mouse

over the application, try these settings under the Settings button of the Win-OS/2 Setup icon in the System Setup folder.

```
DOSHIGH = ON
DOS FILE = 50
DPMI MEM LIMIT = 64
HW ROM TO RAM = ON
IDLE SECONDS = 60
IDLE SENSITIVITY = 100
```

Remember that if you enable Fastload in WIN-OS/2 Setup it applies only to seamless Windows, not Full Screen Windows sessions. Fastload loads the Windows code into memory at bootup which speeds up the process of loading the first Windows application. The caveat is that you must set up WIN-OS/2 and any Windows applications you want to run with compatible settings. If you start a Windows application in a separate session or set it to run in Standard mode when WIN-OS/2 settings are set to Enhanced mode, that Windows application will load in a new Windows session which will load another instance of the Windows code into memory.

Printing performance
In order to deal with the plethora of sound cards whose preferred option is IRQ 7, a change was made to the print setup for Warp which defaults to printing by polling rather than using interrupts as did previous versions of OS/2. This may cause slowdowns, though, as polling is slower and can be interrupted by other running tasks.

Other problems reported might be "Printer not responding, offline, out of paper, turned off...". Enable interrupts (IRQ7 for LPT1: and IRQ5 for LPT2: by adding the "/IRQ" qualifier to the base printer driver in CONFIG.SYS. Change it to read "BASEDEV=PRINT01.SYS /IRQ".

Hard disk problems
One of the worst problems that can arise when running OS/2 is when the boot files become corrupted and you can't boot up and the system issues a SYS1475 error message. There are a number of other messages associated with SYS 1475 including: cannot boot to OS/2, OS2BOOT cannot be found, or Operating System missing.

First check to see whether there's a non-bootable diskette in the floppy drive as this will also trigger a SYS1475. If not, you can restore the system files to the hard disk by booting with the original Installation Diskette. Insert Diskette 1 when prompted, and when the Welcome screen appears press F3 to go to the command prompt. Now re-insert the Installation Diskette and type SYSINSTX D: where D: is the drive where the OS/2 system is installed. That should replace the system boot files and allow the system to boot.

A more usual problem arises when, after adding a new hard disk, OS/2 fails to boot. The problem in this instance is that the new hard disk contains a primary partition which has caused OS/2 to re-map the drives. OS/2 follows DOS conventions for logical drive mapping. Primary partitions are assigned letters first on a drive by drive basis, followed by logical drives in extended partitions also in drive order from first to last.

In a single-drive configuration the first primary partition is C: followed by D:, E:, F:, etc. for logical partitions. If you have installed OS/2 on any partition other than C: and you then add a second drive, be sure to boot under DOS first (use a DOS boot floppy) and FDISK the new drive with an Extended Partition containing logical drives only. Do not create a primary partition on the second drive because it will take the letter D: when the system boots up and your OS/2 system will be unable to start.