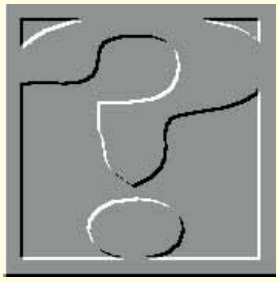

Any questions?

If you've got a PC problem or think you could help other readers out, contact Frank Leonhardt.

Getting the boot

There is one problem about which I get more calls than any other: the desperate soul on the other end of the line has been locked out of their hard disk for some reason or other. The machine won't boot. Their files are inaccessible and they are not very happy about it.

The problem is nearly always due to something in the machine's operating system having been changed (either deliberately or accidentally). So the machine's operating system, thus amended, is terminally confused.

A PC's operating system is normally stored on the hard disk (although it can be stored on a floppy). What generally happens is that the PC searches its floppy drive for a disk containing an operating system, and if it finds one it will run it. If the floppy drive is empty, it will attempt to run an operating system from the hard disk. This sequence can often be reversed by editing the BIOS configuration. The method for achieving this varies between machines, so you should check your computer's manual for details.

The first step in repairing a corrupted operating system on a hard disk is to boot a working operating system from a system floppy disk. This is often referred to as a boot floppy — it pays to have one handy.

The normal way to get hold of a boot floppy is to make one using the method appropriate for your operating system — and they are all different. For OS/2 (3.0) you should run the program "Create Utility Diskettes" which is found in the System Setup folder under the OS/2 System icon. Just follow the prompts and have a supply of blank disks ready.

For Windows NT users, creating a boot floppy disk is not that simple. Nevertheless, Windows NT has many features designed to make recovery easy. In the first instance there is a boot-up option to revert to a previously known working version of the system. If this fails, because the hard disk is corrupted, you will have to boot from the installation diskettes. Before re-installing everything you will be given the option to repair a damaged system in several ways. I've never known this to fail, but you can improve your chances still further by making a recovery disk which contains important setup information. This is achieved using the RDISK.EXE utility which can be found in \WINNT3x\system32.

Windows 95 has a utility for creating a traditional boot floppy, but it is well hidden. From the Control Panel select the Install/Remove Programs icon. The far end tab is labelled "Startup Disk", and when selected you just follow the prompts.

Anyone still running plain old MSDOS (with or without Windows) will have to create a boot disk manually. This is how:

1. Insert a blank disk into drive A. It is important that it is drive A, because your machine will not be able to boot from B.
2. At the command prompt, type

```
FORMAT A: /U /S
```

If it complains about the /U parameter, omit it when you try again. The /U parameter only applies to recent versions of MSDOS. This process will format the floppy disk, erasing anything which may already be stored there. It will then transfer important system files to the new disk.

3. Using the DOS copy command, copy the following files to A:\. They are normally found in C:\DOS.

CHKDSK.EXE
EDIT.COM
QBASIC.EXE
DEBUG.EXE
UNFORMAT.COM
FDISK.EXE
FORMAT.COM
SYS.COM
XCOPY.EXE
UNDELETE.EXE

Older versions of MSDOS don't include some of these programs. If QBASIC.EXE does not exist, copy EDLIN.COM instead. Other missing files can be ignored. If there is space on your disk, copy SCANDISK.EXE too, if you have it.

Next, make a directory on drive A: and copy AUTOEXEC.BAT and CONFIG.SYS to it. The sequence to do this from DOS would be:

```
MD A:\BACKUP
COPY C:\AUTOEXEC.BAT A:\BACKUP
COPY C:\CONFIG.SYS A:\BACKUP
```

This collection of files isn't exhaustive, but it should be enough to get you started if the worst should happen.

Once you have created your boot disk, write-protect it and keep it in a safe place. If you find you are locked out of your hard disk, it will help either you or someone else to repair your system. If you haven't got a boot floppy to hand, an engineer will have to turn up with one, in person, which generally costs somewhat more than instructions over the phone.

VLB card doubts

"I have just upgraded my system with a new 486DX2-80 motherboard with 16Mb of RAM, replacing my original trusty 386SX with 12Mb of RAM and a Cyrix upgrade chip. Naturally, all my existing I/O expansion cards are the traditional 16-bit type but I decided, after a successful transformation, to change my standard 16-bit multi I/O card for an all-singing, all-dancing (so it claims) VLB multi I/O card (CMD chipset).

I ran Wintune 2.0 and the PCtools system consultant before and after. Imagine my surprise on finding that the data transfer rate is lower with the new 32-bit card than my old 16-bit card.

I have two WDCaviar drives on my system: the Master reports to be a Mode 3 drive, and the slave reports Mode 1.

Data transfer problems caused by a video card like this one could be down to driver software

Although the system feels faster (wishful thinking perhaps), the above reports differently. The readme file with the card claims that it selects the optimum transfer rates for both the master and slave drives, independently of each other.

I am naturally dubious about buying any other VLB cards for video and such like if there is to be no perceivable performance increase.

I would be interested to read your thoughts on this."

Barry Higginbottom
barryh@POST.Almac.Co.UK

If it's any consolation, your 16-bit ISA card was able to transfer data at a rate which was well above average, but it is difficult to see why a local-bus Enhanced IDE adaptor should be any slower. This probably has a lot to do with the driver software you are using.

Windows 3.11 32-bit disk access (which replaces the drivers which came with your cards anyway) is not able to take full advantage of Enhanced IDE, as yet. I'm sure that this is one of the features which will appear with Windows 95. If you are thinking of switching to Windows 95; wait and see what it can do.

There are many problems you may encounter running VLB cards with a processor speed in excess of 33MHz, and yours is running at 40MHz in real terms. Some VLB cards have jumpers to set a delay for high-speed access which can improve matters dramatically. If this delay isn't enabled, the processor can spend ages fumbling around while it transfers data from the card.

With a PCI bus, an IDE adaptor has the option of transferring data through DMA. This is actually around 20 percent faster than the 11Mb/sec which can be achieved using the CPU to read data from an E-IDE VLB card.

Given unrestricted access to the address space on a VESA local bus card at 33MHz, the CPU can transfer and manipulate data at four times the speed of an 8MHz ISA bus. In most instances this can only help, so don't be put off. VESA video boards can be considerably faster than ISA ones.

Fonts found

In July's Computer Answers we published a letter from B.G.Joyce-iy1i9198@lmu.ac.uk, who was suffering from a mysterious loss of printer fonts when installing Word 6 for Windows.

Since then, several readers have contacted me, all suggesting the same solution. If you don't have a graphics-compatible printer connected to your system, Word won't allow you to use graphics fonts in your document, but this is easily cured by installing a graphics printer, or at least telling Windows that you have one.

Paul Fitzgibbon (Paul.Fitzgibbon@p11.f302.centron.com) had a different idea: apparently WIN.INI is limited in size. When Word installed it might have added too much and pushed WIN.INI over the limit, thus making its font definition lines inaccessible. The solution would be to remove unnecessary entries.

Thanks to all those who wrote, mailed, faxed or phoned.

Play cache or check

"I have a 486DX2 66MHz PC with 16Mb of standard RAM. My machine also has a VL Bus and 128Kb of cache RAM. I would like to know whether it is worth buying another 128Kb to make a total of 256Kb, or even upgrading to 512Kb? Would system performance be improved significantly for the use of DOS-based games? (This is its primary use.) For example, some graphically intense programs appear to run slightly slower than I would have expected. Is this related to the size of the cache RAM? Or is it related to the speed and memory of my 1Mb VLB Cirrus Logic 5424 graphics card."

Andrew Little
100633,3441@compuserve.com

It isn't really possible to say whether extra cache RAM would help with your configuration or not. According to the academic theory on cache sizes, going from 128Kb to 256Kb should only make a marginal difference to the machine's performance.

However, some cache controllers like to have a block of cache for each bank of SIMMs, so having half your cache missing could be significant.

The graphics card you are using should not be causing any bottleneck.

The CPU itself is one feature which can make a huge difference to the performance of graphics-intensive games, and 3D simulations in particular. Regular readers will probably notice that this isn't my usual tack, as I normally stress the importance of fast peripherals before the processor for most applications. Games and graphics are the exception. You could always start saving up for a P6.

How do I get on the Web?

Lots of people want to know how to make a fortune by becoming Internet service providers. I never tell them of course, but it does help to be a networking expert; if you aren't one of these, you will have to hire someone who is because I'm not explaining it here, or over the phone. It also helps a lot to have started ten years ago.

A more reasonable request is for details on how to get your own personal World Wide Web page. There are two versions to this story. Firstly, it is actually free if you can persuade anyone with a machine permanently connected to the Internet to let you have a bit of space. Most pages belonging to individuals and non-profit organisations are found on space loaned by a college or university.

Secondly, if you have some commercial use in mind, or have a lot of data you want to make available, then you will probably have to pay for space on a bureau computer. There are wild stories about large Internet providers charging well in excess of £500 per annum for this service — unfortunately they are true. But there are others offering 5Mb of space at rates of around £25 a month or less. I don't dare list companies and prices here as anything to do with the Internet is, by nature, volatile. Just try shopping around.

Once you have your file area, it is actually very easy to publish pages: type whatever you want with a text editor using a special mark-up language, called HGML, to identify the special formatting you require. HGML, which is similar to SGML, is not difficult to use. If you prefer, there are several editors available which allow you to format your documents on-screen and will produce the HGML-format text file for you.

The final stage is to upload your file using FTP or some other file transfer mechanism and tell all your friends where to look.

PCW Contacts

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