



Any questions?

If you have a PC problem or think you could help out other readers, contact **Frank Leonhardt**.

Q "I would be grateful if you could help me with a problem I am having with downloading files. When I download software from either the World Wide Web via Netscape 2.0, or FTP via my ISP (U-net) the speed starts at around 3K/sec and then gradually goes down to below 1K/sec. I am running Windows 95 with 16Mb RAM and always connect at 28800.

It has been mentioned that there is a problem with some Sportster modems having faulty chips causing 'spiralling death syndrome'. I have contacted US Robotics which stated that my ROM is the latest revision for the internal Sportster modems. The company advised me to use AT&F1&A3&K3S54=96. I placed this in the 'extra settings' in advanced connection settings of modem set-up but it did not rectify the problem. The 'highest speed' is set at 115200."

Chris Norton
Birmingham

Internet connections operate in strange ways and Netscape's reported performance seldom has anything to do with the modem's operating speed. You will probably find that your system is transferring packets of data at full speed but is pausing a long time between some or all of the packets.

If you can, monitor the data transfer to and from the modem in some way. This isn't easy with internal modems (one of the reasons I prefer the external type with flashing lights), but you can sometimes examine the data using the PPP connection software. For example, users of Trumpet Winsock can select an option to monitor the raw data.

Assuming you are getting inter-packet gaps there are several possible causes. The problem could well be at the remote end where the FTP server isn't able to

send your file down the line quickly enough due to the number of simultaneous users. There could also be a delay anywhere in between, caused by too many people using the same line at once.

There may be something you can do about it at your end, however. A lot of dial-up Internet connections are set up with inappropriate parameters as a default. They work with some sites and do a go-slow on others. If you have Trumpet Winsock this may well affect you.

The parameters to change are MTU from 1500 to 576, RWIN from 4096 to 2144 and TCP MSS from 1460 to 536.

TCPIP parameters look confusing but you have to get them right

I've found that these work considerably better than the original higher values as larger packets tend to end up getting divided into smaller chunks and failing to arrive for re-assembly before they are timed-out.

Quest for speed

"I have an IBM 486SLC2 50MHz computer, with Quantum ProDrive

ELS170AT 12Mb of RAM and 64K cache memory. Having checked my system with Norton's sysinfo 8.0 25E, I have the following results. Overall performance 50.1, Disk speed 7.0 and CPU speed 71.7. However, when I checked an 80486SX 25MHz computer (4Mb), the results were lower. When I played with Windows 3.1 and WordPerfect for Windows it seemed much quicker than mine. Also, I noticed that this machine has got a SCSI hard drive.

Is the answer to buy a SCSI hard drive or is my speed problem caused by other reasons? Is upgrading to 128K of cache worth the money? Secondly, I have already upgraded to 12Mb, from 4Mb. In my opinion, the only difference seemed to be that I could load multiple programs at once. My computer did not seem to be a lot quicker. Is this also due to my hard disk?"

Alfred Hamstra
Finland

I'm not generally impressed with benchmark programs, especially those which only take a few seconds to run. The results can never be taken at face value. In the real world I would expect an Intel 486SX-25 to be noticeably faster than an IBM 486SLC2-50 because the IBM chip is really a clock-doubled 386 in disguise.

Put simply, it takes more clock cycles to execute most instructions than would a proper 486SX. In an attempt to redress this imbalance, IBM has clock-doubled and tripled its 486SLC processors but Intel has also tripled theirs in the form of the 486DX4, so a wide gap still exists between the product ranges. So how does IBM justify calling it a 486? Simple, it handles the extra "486" specific instructions (albeit more slowly).

Beware other manufacturers tagging

processors as 586, which might make you believe you are getting an alternative Pentium rather than a souped-up 486. Not all non-Intel processors are below par, however, so it pays to shop around.

SCSI disks can sometimes be faster than IDE, and are the fastest disks available. However, unless your disk performance is particularly bad you will probably be disappointed if you upgrade. It would be easier, cheaper and probably faster to add a better E-IDE drive and adaptor to a machine of your class.

Twelve megabytes of RAM on a Windows 3.1 system is probably all you'll need. Having more would allow you to use more simultaneous applications, assuming that these were economical with the infamous windows "system resources". It is often the case that these run out long before the system RAM. Windows 95 likes to have 16Mb of RAM to begin with and as it doesn't suffer from the resource problem to the same extent, adding more RAM will allow you to run more programs at once. Because it is more robust than 3.1 it makes this practice less like insane recklessness, as well.

There are exceptions to the above suggestions. In particular, if you are using software which manipulates large sound or graphics files (like audio editors, video or photographs) then the more RAM you have the better.

Learning C++

"I am a student, with no experience of C or C++. I have programmed before, but to a trivial level and only in BBC Basic and Word Basic. I have several months free now, and I would like to get really stuck in to some learning in C++. I want to be able to program Windows applications. I am thinking of getting Visual C++. Is this a good option?"

Of all the books I have seen, none deal with people who haven't seen C or C++ before, and none seem very specific to teaching with visual C++ in mind. Can you give me any suggestions?"

Garan Jenkin

There are several major Windows C++ compilers available, the most prominent being Microsoft Visual C++, Borland, Symantec and Watcom. Any of these would be more than adequate for someone starting out (the differences in the feature lists only come in to play when dealing with esoteric commercial development problems).

Watcom has the advantage that it can target multiple platforms like OS/2 (something which Microsoft has discontinued). Borland has been producing low-cost development tools since its inception. It has separate Windows and OS/2 compilers available with variable documentation quality. At a cost of around £70, its Turbo C++

represents good value. Microsoft C++ 4.0 is huge. It needs Windows NT or Windows 95 and loads of RAM to use, but it is the standard. For those with more modest hardware, version 1.52 is still available. This still requires 8Mb of RAM with Windows 3.1 and it has more features than you can shake a stick at for around £80 (Version 4.0 is around £400).

Symantec is my favourite at the moment, but this is based on my taste for efficiency above all else. It runs on Windows 3.1 and upwards, with both 16-bit and 32-bit versions of the compiler, which can target either platform. In other words, you can develop for Windows NT using a compiler running on 3.1. Its documentation is good, but it does cost around £400.

If I had a free choice (which I do) I'd plump for Symantec for day-to-day use, with Microsoft on the shelf for when compatibility was all-important. With a budget to consider, Turbo C++ or Microsoft VC++ 1.52 are good choices.

Books are more of a problem. The "C" compilers mentioned come with plenty of example programs but these can be heavy going for beginners. Your best policy would be to look at as many as possible and pick one you personally find easy to understand.

Once you are past the absolute beginners stage, the "bible" of C++ is The C++ Programming Language by Bjarne Stroustrup (the language's inventor). This is also available in an annotated version, and is divided into a tutorial and a reference section (though it does proceed quickly).

Frank's Bargain Basement

IDE, the most popular interface for connecting hard disks to PCs, was described as the "poor man's SCSI" when it first appeared. Like SCSI, it moved the drive controller electronics from the PC to the drive itself, allowing the use of longer connecting cables and faster transfer rates. The older system of ST-506 was limited in speed because it sent raw and vulnerable data from the drive, along a cable to the controller.

But why should IDE (which stands for Integrated Drive Electronics) still be so much cheaper than SCSI after all these years of integration and volume sales? The best reason I can think of is that SCSI adaptor and drive manufacturers like having a higher margin than would be possible in the cut-throat IDE market.

SCSI does have its advantages in high-end applications, although speed is no longer one of them with the arrival of E-IDE. A SCSI bus can have up to seven peripherals on it and each peripheral can consist of more than one disk drive (though this feature is now rarely used).

E-IDE supports a maximum of four drives. You may have noticed SCSI drives are available with far greater capacities than E-IDE, too — the only reason for this can be profit margin protection.

Then, along comes Iomega and gives the game away. Its SCSI ZIP drive has a Macintosh-style SCSI connector on it which makes it difficult to sell it to PC users. So what did Iomega do? They started selling their own Adaptec-compatible SCSI adaptor for just £35. It has a Macintosh (25-Way D) socket on it, though you can plug in a Mac-to-PC cable if necessary. Apart from this, it's just a cheap-and-cheerful SCSI adaptor which would be ideal for normal hard disks, scanners, CD-ROM drives, tape streamers and other exotic storage devices.

Low-end SCSI adaptors from other sources are bound to be pushed down in price eventually, but whether or not you're planning to use a ZIP drive this board has to be a bargain. And for anyone with Macintosh peripherals they wish to use with a PC from time to time, it's the perfect answer.

PCW Contacts

Frank Leonhardt is an independent technology consultant who can be contacted on 0181 429 3047 or via email as frank@dircon.co.uk or leo2@cix.compulink.co.uk.

Computer Answers Web site at <http://www.users.dircon.co.uk/~wombat/answers/>.

Letters may be sent to PCW at VNU House, 32-34 Broadwick Street, London W1A 2HG. Sorry, but due to the high volume of correspondence, individual replies are not normally possible.

The C++ Programming Language by Bjarne Stroustrup. Addison-Wesley. ISBN 0-201-12078-X

Grey Matter ("C++" Compilers) 01364 654100

Iomega (Zip Zoom card) 0800 898563 (from UK); or ++35 318 007 5133; or www.iomega.com