Lining up **Linux**

Stephen Rodda blows his stacks, plays with Linux, and meets a rather nice couple called ed and vi.

*"If anyone anything lacks,
He'll find it all ready in stacks,
He's but to look in on our resident djinn,
Number seventy St Mary Axe."*

I don't quote Gilbert and Sullivan's "The Sorcerer" often, but this particular piece describes adequately how I've been feeling recently. I'm not referring to my state of health, but to the almost limitless number of Winsock-type stacks which seem to be lying around open-mouthed ready to swallow any unsuspecting installer of almost any communications software which accesses the Internet.

First, I installed a rather useful piece of software called Turnpike. This had its own Internet Winsock stack. Then I installed Spry Internet, a CompuServe offering. This in turn required its own Winsock stack. One of them (I can't remember which, though I think it was Turnpike) even wanted to overwrite Windows 95's own Winsock stack. Diabolical, I call it.

Why can't these people run to using (or reusing) someone else's stack? It's not as if it's that difficult, I'm sure. Everyone else seems to be able to get away with it.

One day, as in Gilbert's libretto, they'll have to listen to some of the Sorcerer's last words: "So be it. I submit: my fate is sealed; to popular opinion thus I yield." Only I wish they'd have done it *sooner*.

Lines on Linux

I've also been playing with Linux (available on February's CD). Now, it's been a very long time since I played with an operating system which was as resolutely character-based as this — apart from NetWare, of course. The last time I looked at a Unix derivative was probably about five years ago, but I was persuaded by the fact that it

had X Windows and that I should know how to use it. Well, I did, a bit. I've used a Silicon Graphics workstation, which uses an X Windows-type shell, and Suns and so on, but this is the first time I've actually *installed* one. I've installed ordinary character-based Unix before, but not X Windows.

The character-based installation went pretty well — apart from me being silly and forgetting to change the backslash to the forwardslash through habit — even though I forgot where in the scheme of things I had left my installation disk images. After a couple of hours, I eventually got myself a bootable installation. The problem lay in the fact that my Videologic PCI movie card with a Weitek P9100 wasn't supported. I tried a P9000-based card as an option. No good.

I had a go at an SVGA installation with similar success. I even tried VGA_16 and VGA_MONO, but these were also met with scorn by my hardware setup. Eventually, I

swapped the card out and replaced it with a Trident TVGA8900, and found success. X Windows was up and running. Or rather, crawling. Even Windows 95 ran faster that it did. I was quite nonplussed.

I suppose one reason could be the fact that I used an UMSDOS file system. For those of you who wouldn't know an UMSDOS file system if it bit them (the same as I was until a couple of weeks ago), it's a method whereby Linux can access MSDOS partitions as though they were Unix ones. They even have extended file

names, although these attributes aren't compatible with Windows 95 or NT. Goodness only knows where this information is actually stored, because *I* certainly don't.

The other piece of unbounded joy Linux gave me was the chance to get to grips with ed and vi. I have always been on a nodding-type of acquaintanceship with ed, but vi has always left me cold. Say what you like, but I never can seem to remember the right incantation to get to command mode in vi. Eventually, I wimped out. I installed Joe, supposedly a WordStar lookalike text/word processor.

Hey Joe

Only it's not really that lookalike. WordStar is one of those word processors which you really get a feel for when you've used it for as many years as I have. Unfortunately, the command keys are almost, but not quite, exactly unlike those of WordStar. I later found that invoking Joe with "jstar" enabled total WordStar compatibility, as opposed to the Emacs command set. I've learnt enough different key combinations, from Wordwise, View, WordStar and dBase, through Visicalc, Lotus 1-2-3, DisplayWrite and WordPerfect 4.1, not to want to have to learn another one.

Once I had installed and got X Windows working, I was more or less in my element. Having said that, I still reverted to Joe to edit my text files, which I seemed to be able to do without too much trouble; the X-Windows text editors looked to me to be more along the lines of vi than anything else.

How did it get along with the rest of my hardware? I'm glad you asked. It recognised the Adaptec AHA2940 with no problems, as, of course, it did with my hard disks. Since it was using the UMSDOS file system, I could get it to mount and recognise all of the DOS partitions without any problem; in fact I was pretty relieved at that. The

ancient Mitsumi CD, although supported in the operating system, I didn't seem to be sufficiently clued-up to be able to mount as an integral part of the file system.

Kernel kapers

Then I found out why. The kernel I was using (straight from the Linux installation) hadn't got Mitsumi support built in. Now what was I to do. "I know," I thought. "I shall recompile the kernel." Well, it was a lot easier than I suspected, apart from the fact that the 1.2x kernel didn't have support for my Adaptec 2940 card. Nevertheless, the 1.3.20 kernel is available on disk images K3 to K5 and so I used those.

Brilliant — it worked right through compilation and gave me a kernel which ran very nicely, but only after I had enabled anything which had the word "Elf" in it. Without this option enabled, I couldn't get it to compile successfully.

With this done, I set out to get Linux attached to the network. Of course, it wouldn't see my copy of NetWare 3, simply because NetWare 3 doesn't have built-in TCP/IP support. I did manage to get another Windows PC to see it, though. Note that I used unrouteable TCP: that means that these IDs are specifically excluded from being routed over the Internet. The 192 series is one such, and you can use them if you want to disable connection of your network to the Internet or interference from your own network with the Internet. The only way to achieve full Internet connection is to have your own series of Internet IP address numbers (often supplied by a service provider).

The thing that stops PCs recognising a Unix file server (assuming all the TCP/IP is set up correctly) is simply the fact that
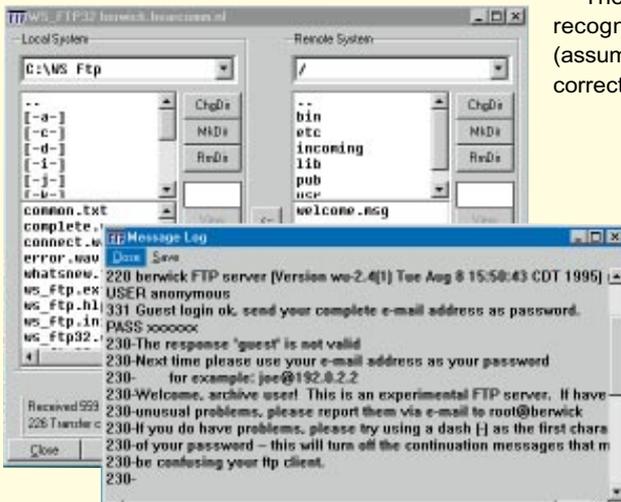
A smarter version of the FTP session, using WS FTP

Problem solving: MSN and Demon

Microsoft Network causes problems at home

I am a radio producer for Kiss FM in Athens (Greece), now doing my MSc in Communications and Signal Processing at Imperial College, London. I have formed a small network at home, where I have two 386DX/40s and one 486SX/33, all with 8Mb RAM and running Windows 95. When I tried to use Microsoft Network as the networking peer-to-peer software (replacing the older NetWare Lite 1.1 which forced 16-bit file and disk access) I experienced all kinds of problems.

I use the 486SX (manufactured by HP) as my "fileserver", storing and retrieving all my data files to and from it respectively. I use Microsoft Word 6.0 (or 7.0) for word processing and Microsoft Access for database applications. The problems started appearing in the form of lost files (files which could be seen using the "dir" DOS command but which Word was unable to read). Moreover, whenever I tried to copy large (500Kb or more) files from one computer to the other, the whole system hanged and I had to reboot all machines.

Finally, whenever I tried to network print to my HP LaserJet 4L, the documents were printed correctly if I used single-sided printing. If, on the other hand, I wanted double-sided (first printing the odd and then the even pages), page and font formatting was correct but the words printed had no meaning (for example, "hello" would print "kfgle"). I suspect that the printing problem is part of the network traffic problem I described earlier, as the computer that is printing sends data over the network to the one where the laser printer is attached to.

When I removed Microsoft Network and substituted NetWare Lite, everything worked happily, although 16-bit functionality returned, happily ever after. Do you have any suggestions, as I have no idea where the problem lies.
SK@ic.ac.uk

I don't really know what the problem might be here, but I'd hazard a guess that one of your network cards is not working correctly.The real way to test this would be with a LAN analyser, and since you're at Imperial College, someone may be able to help you there. Alternatively, you can get hold of a spare network card to swap one or the other out, and see if the problem persists. If it does, then swap the other card.

You don't mention whether you get garbled output when printing the second side of the document from the host computer (the one with the printer on it). If that were the case, I'd suggest that it's an unrelated problem, i.e. that the printer is running short of memory and can't hold all the fonts you might be using.

Have you tried using the built-in TrueType fonts within the printer rather than downloading fonts to the printer (my apologies if you already are)?

Demon leaves files open to unwanted scrutiny

I have set up the Windows 95 Dial-up server (from the Plus! software package) and enabled file/printer sharing from the Networks settings in control panel. So far, so good. However, when I connect to Demon Internet using my modem, my files and printer are open to access by other Internet users. To overcome this, I have to disable file/printer sharing using the network settings in the control panel. They then have to be re-enabled in order to allow incoming calls using the dial-up server.

As you can imagine, this will be a bit of a bind for any of my clients to manage (many of whom have only recently been introduced to computers). Do you know any way to avoid this long-winded process, while maintaining the security of a computer that will be used for dial-up access to the Internet?
ch@mc.demon.co.uk

I have already sort of mentioned this problem in this column this month. There are several ways you can look at the problem, and these range from the pragmatic to the paranoid.

Firstly: since you're using a dial-up connection to the Internet, someone would have to be sitting there, lurking, checking whether you were there or not. Not the sort of thing I would want to do when there's paint drying to be watched. You could also take the stance that nobody would want to print to your printer anyway and (unless it were PostScript) there's no possible harm they could do having printed, except to use some of your paper and ink or toner. Assuming, for a moment, that they were assiduously waiting, they would have to be using the Microsoft client in order to access your files anyway.

The second thing to do would be to add password protection to your shares, and this way anyone using a Microsoft client (or Samba) would have to supply the password as well as your IP address to access the data or the printer. The third line of defence would be to purchase or set up a firewall. This would involve using (perhaps) a Linux or Unix or NT box which would be quite safe and prevent any unwarranted intrusion.

The final method (the sort that would probably be insisted upon by the government) would be to incorporate steps 1 to 3 with the provision of leased lines for your clients' access. This way, the whole system would be far more secure, and would have the added advantage of knowing where the calls were coming from. Of course, the expense would be quite terrible, because each client would have to have their own line with a router on each end of each line.

Personally, I'd be inclined to go with option 1, but you pays your money and you makes your choice.

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the server is operating at a lower level than Windows expects. You can't just expect to mount a drive and to work on files on a Unix hard disk just like that; you have to transfer them. Also, you can't just start work on the thing like a NetWare server; you have to use Unix connectivity utilities first. Now I logged on to the Unix machine with a TCP/IP terminal-type program, Telnet (which comes with Windows 95). I also transferred files using ftp (which also comes with Windows 95) and with WSFTP and Cute ftp — included on this month's CD.

I also installed Samba as a networking protocol, in order to allow Linux to see Microsoft LAN Manager-type connections, but I shall be going into that in fuller detail next month, along with the modifications I made to the network to enable the Linux server to coexist happily.

PCW Details

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