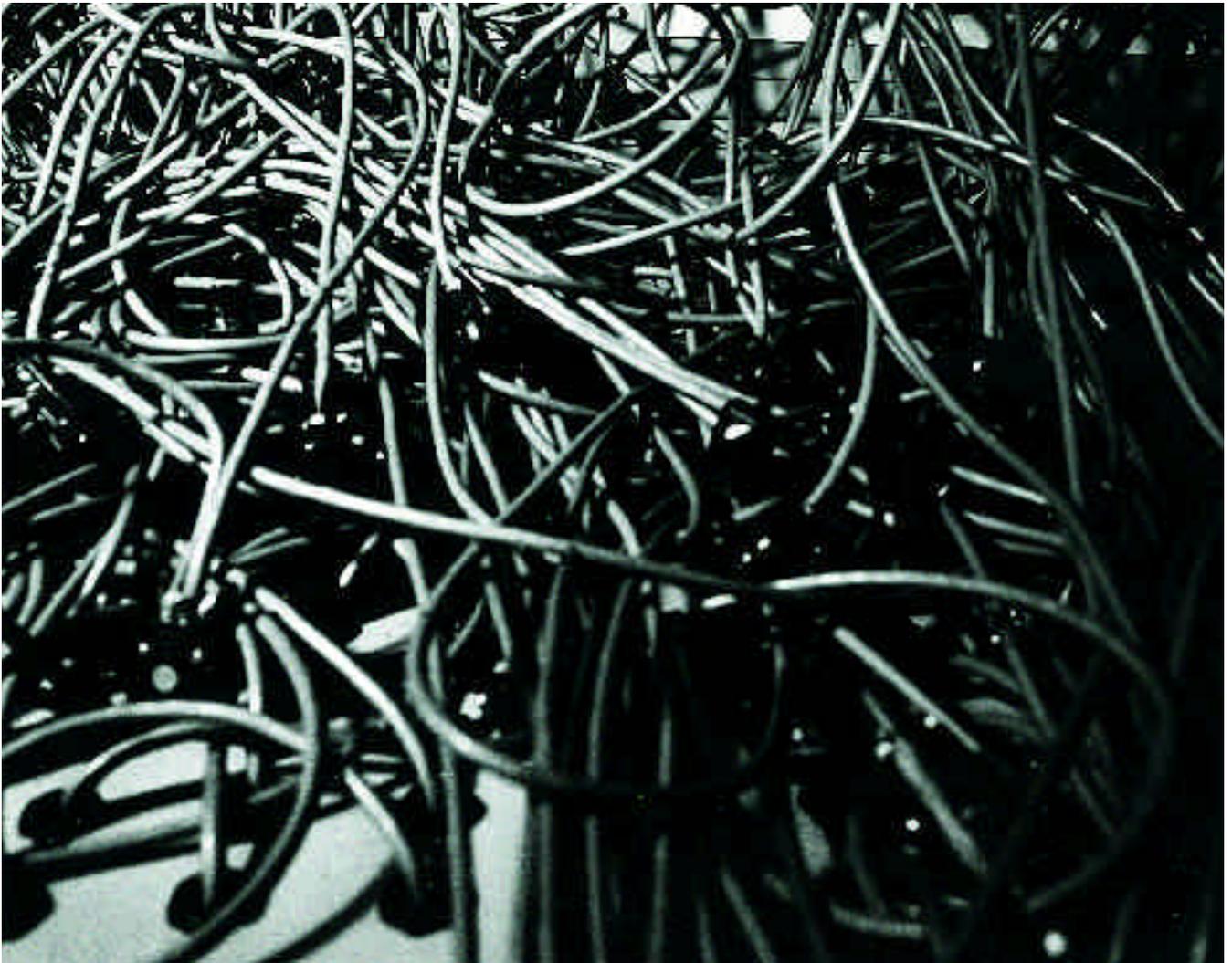




# Cabling for company

Mark Baynes and his colleagues have a new office. All they need now is to get it networked. Mind you, there's always the good old shouting-up-the-stairs routine to fall back on. Plus, The Squirrel tries LAN management, and Dell's PowerEdge serves up a treat.



**D**uring the past few weeks I have been running around like a mad thing cabling up the office so that my colleagues and I could enjoy basic networking comforts like sharing a printer and sharing files on the file server as we get

our first few web sites under way.

We all met while taking an MA in Multimedia at Sussex University and, in the multimedia lab at that time, we did not have a file server or any form of networking apart from internet access. The main reason we

were not networked to each other was because the university systems staff thought that we would start sending multi-megabyte multimedia AVI files to each other (and yes, we would have); this potential problem being exacerbated by our position

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on the university system. So what we did was simply shove files onto the PD drives with which the PCs were equipped and transferred them from one machine to another in this fashion — fine, but at times a bit of a pain.

Of course, the first day in the office, one of my colleagues could be seen wandering from one networked PC to another with a floppy disc in his hand because his files were in different places. I must admit I did wait until 5.00 p.m. until I explained that because all the files were on the file server, and that all the PCs were connected to the file server, he did not need to do this... Well, it kept me amused.

Another communications problem we have is that our offices are on three separate floors. We do not have an internal telephone system installed, so this leads to us conducting conversations while leaning over the banisters and shouting at each other. Someone suggested that we should get some whiteboard software installed on the LAN but I think it might be a lot cheaper and more efficient to buy an intercom. The low-tech solutions are usually the best. Or we could move to a single, larger office. But then we would have no good reason to shout at each other — not.

**Getting kitted out**

A friend of mine, with whom I occasionally undertake network consultancy (aka The Squirrel), has been tearing his hair out trying to make a newcomer to the wonderful world of LAN management understand that running ten networked PCs is ten times as complex as running ten standalone PCs (although you get far more than ten times extra productivity from the networked system), but to little avail.

This LAN newbie is a real gadget freak whose main goal in life seems to be to spend as much money as possible on a new 18-node network that he wants installed, irrespective of what he and his company actually needs to get the job done. (At the moment every PC has its own printer— honest.) Unfortunately some other networking firm, the employees of which all wear Stetsons, shoot from the hip and call their company cars Tonto, are intent on fulfilling the newbie's dreams and letting him spend about £30,000 more than he needs.

I have this nasty feeling that if everybody only bought the amount of networking kit they needed, rather than what they wanted to play with, then the network industry

would be only half the size it is. We have mixed feelings about Mr LAN Newbie. Yes, we could get a nice contract, recommend and install kit for only half his budget which would do the job he wants it to do, and we could make a profit; but would he actually realise that it was capable and that we had done a professional job for him?

There is the occasional temptation to agree to install the massive file server this guy has wet dreams about, and the extra 16Mb RAM in every PC he insists is necessary, but we both think it would make for a much easier life to just forget about the whole thing.

**Server sense**

Anyway, back to the subject of this month's column, which was going to be "Ethernet and Fast Ethernet explained". But it ain't, for the simple reason that a Dell PowerEdge server has turned up for review (see the separate review, opposite ) so I am going to talk about file servers instead.

Exciting, huh? Well, more interesting than a load of theory about collision detection, anyway. I have fond memories of Dell servers because the first EISA server I ever configured was a Dell and somehow I managed to do it without (a) the manuals and (b) any knowledge of what an EISA server was.

One of the first things to bear in mind when buying a server is that it is not a go-faster PC. Yes, it may have a faster CPU, more RAM and more hard disk space, but the main requirements of a server are that it is built like a tank and that it is reliable. If someone tries to sell you a server on the basis that it's got a really high-end graphics card, walk away: you only need a basic colour monitor and they do not know what they are talking about.

If the system unit cover is a pain to remove, then it is highly likely that the whole system has not been designed very well. Look inside the unit and see if the wiring is carefully arranged and tied back so that you can access the cards and system board. Can you upgrade the RAM without having to remove any of the network cards? Are the standard hard drives from a good-quality company? Can you buy a RAID system from the same manufacturer?

Ignore any benchtests. Benchtesting of PCs such as you find in *PCW* or other mags are usually good indicators of performance, but benchtesting file servers is complete and utter nonsense. Most benchtests of file

**Dell PowerEdge 2100/200**

The Dell PowerEdge 2100/200 arrived for review installed with a 200MHz Pentium Pro with 256Kb cache, 64Mb EDO RAM and 2Gb Seagate SCSI drive, and integrated Adaptec AIC-7880 ultra-fast and wide SCSI controller. There was also an NT Server v3.51 (4.0 by the time you read this) and an Intel LANDesk Server Manager v2.5 pre-installed. Integrated server management circuitry monitors the state of the system fan as well as other critical system voltages and temperatures in conjunction with LANDesk, so you can find out exactly how hot your Pentium runs (Fig 1), the activity of installed network cards and protocols (Fig 2) and just about everything else.

The PowerEdge has a mini-tower type of system unit which is quite wide; a minor but important point as it is quite difficult to accidentally tip a unit with the dimensions 44.45 high x 24.13 x 41.91cm deep and weighing 17.68kg. The front of the unit is dominated by a large ventilation grille which, in conjunction with the large and noisy fan at the rear of the unit, should maintain the airflow over the system board and the hard drives.

There are the usual floppy and eight-speed CD-ROM drives and one free bay for a tape device. Plus points to Dell for taking the trouble to recess both the power and reset buttons so that there is no way they can be hit in error. Between them there is a SCSI drive activity light. The rear of the unit is fairly unexceptional, with the usual I/O ports and such like, except for a blanking plate where you can install a

system cabling which is neatly bundled together and attached to the top of the unit. There are three EISA/ISA and three PCI slots available. One of the PCI slots is occupied by an Intel EtherExpress Pro/100 Ethernet adaptor which can auto-sense whether you have a 10Mbps or 100Mbps network connection.

Although NT Server has always had basic system management software included, you really need a third-party solution and Intel's LANDesk Manager is a good option. The amount of detail it provides you with is more than adequate for the majority of daily LAN management tasks you will undertake, and if you take the time to configure it properly, you will have a comprehensive system available

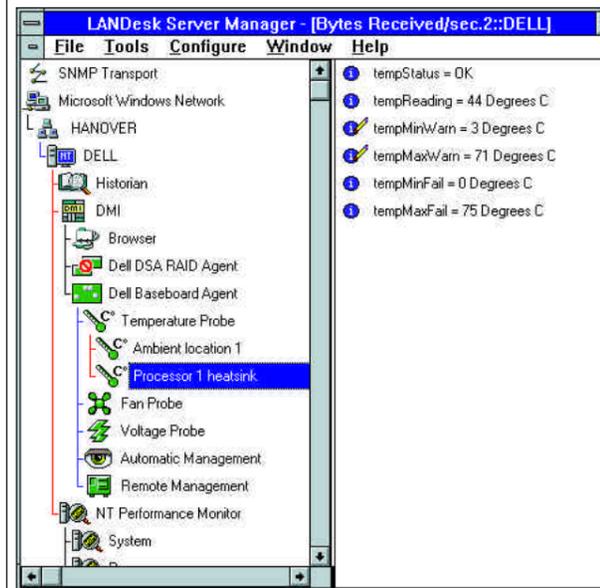
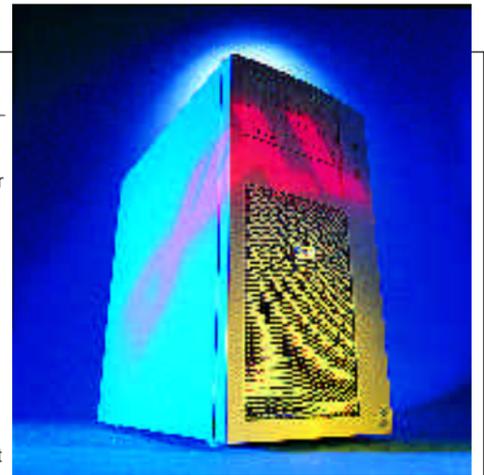


Fig 1 (above) LANDesk Server manager showing Dell Baseboard Agent details of Pentium Pro temperatures

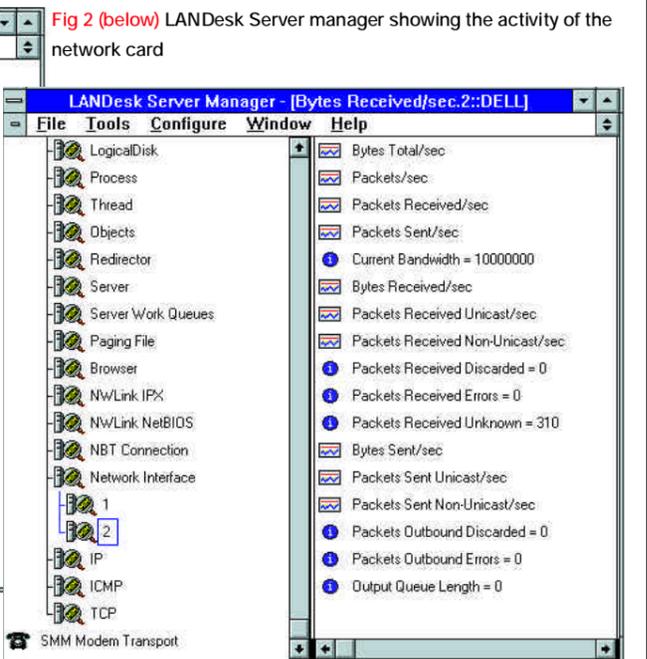


Fig 2 (below) LANDesk Server manager showing the activity of the network card

server management unit if required. Removing the rear casing is fairly straightforward because once the security lock has been removed there are only four screws to be undone and the cover slides off easily to the rear.

Inside, the unit is neat and tidy with plenty of room to work when installing extra network cards. The Pentium Pro itself is hidden beneath a massive heat sink at the top of the system board. The four RAM slots are easily accessible and are not obscured by any of the

which should make your working life more bearable. Documentation is very good — just about the best I have seen.

I attached the PowerEdge to my system and used it as an auxiliary server for several weeks, and found it to be tough and reliable. Pricing for the system specification reviewed here at the time of writing was £3,878 inclusive of 15in colour monitor, NT Server and LANDesk Manager, so the PowerEdge should be near to the top of your list when considering a new server for your LAN.

■ Dell Computer Corporation 01344 724883

servers are usually just tests of the network card. But even if there were such a thing as a valid benchtest of a file server, it would still be of dubious value because the benchtest was not undertaken on your particular network.

Think of your LAN as one big distributed computer of which the file server is one (but not necessarily the most) important component. A benchtest of your file server is rather like benchtesting the latest Pentium CPU without reference to the system within

which it will run. If it is put in a well-organised system, a fast CPU will improve performance. But put the same CPU in a badly organised system and it may not improve performance at all. Get the idea? The same is true of file servers within a LAN.

Which brings me to my final point. If your LAN is running slowly, do not think that merely buying a new server is going to make it run faster. You would probably be better off taking the time to analyse the performance of your LAN over a few weeks and properly identifying the cause of the problem. If you then find that the server *is* the problem, analyse server performance for a while.

If you have exhausted all possibilities, then think about buying a new one, but not before. You could find that spending £150 on a new network card would give your LAN just as much of a performance boost as a new server.

But now I must turn my attention to the most fundamentally important LAN management task that I have yet to undertake — getting the first networked game of Quake under way!

### Questions & Answers

I have just started to receive the first of your letters and have been intrigued by the variety among them. If I cannot find an answer to one of your queries, I will let you know, but I hope that I will be able to help in the majority of cases.

Don't be afraid to ask really simple questions because quite often these are the ones that other people would like to ask if they were not so shy. And, if you have any useful information you would like to share, do let me know.

#### A modem shared

*Q. "I read in your Networks column in the December issue of Personal Computer World that you were installing a modem as a shared device on an NT Server. How is this done? I can't find any option in NT Server to allow you to share a modem."*

**Chris Langford**

**A.** NT's Remote Access Service (RAS) is primarily designed for remote access by remote nodes and does not support a dial-out modem pool for users on a LAN (which is what you and I want to do) but there are third-party products which allow you to do this. One of these is SAPS modem sharing software from SpartaCom (tel 0181 357 3600; web address [www.spartacom.nl](http://www.spartacom.nl)) and costs around £95 for the single-modem NT server licence and £195 for five-client licences. I reviewed a previous version about 18 months ago and remember it as being simple to install and effective. However, I have the latest version on order and I hope to review it in Hands On soon.

#### Home network

*Q. "I am an avid reader of Personal Computer World and enjoy your Hands On Networks section, even though I don't yet run a network! I would nevertheless appreciate some advice on a networking issue. I am a student attending Nottingham Trent University, taking a computer science degree course. We have just started to learn Java for producing client/server*

*software for a distributed systems module. In order to be able to do this work at home, I need to set up a TCP/IP network on my Windows 95 machine. I do not have a network card, but was wondering if it were possible to set up a form of network on a standalone PC?"*

**Mark Jessop**

**A.** You cannot really set up a network on a single PC, but then, this doesn't matter because for your purposes you don't need to. In order to be able to access the internet from a Win95 PC you have to set up TCP/IP (via the Microsoft network client) on it, as this is the protocol on which the net runs. When you connect to the net, your PC becomes part of the network. The reason you can do this is that a modem is regarded by Windows 95 as a "dial-up adaptor" and this is what TCP/IP is binding to. However, I do not know the full details of what you want to do with yummy Java (although I am running a web design company, I am avoiding having to learn it — I found Prolog was bad enough) but I suspect this might take you part of the way. If you do not have a modem, however, you may well be stuffed. Sorry!

### PCW Contact

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