



# Pigs might fly

Mark Baynes finds hardware to be a boar, as he tries to install SAPS on Pig: even putting the boot in doesn't work. He's just in time to catch the Netport Express for a quick review, though.

Ever since I took over Hands On Networks I have had problem after problem with the hardware on my network, in particular a certain server which I shall refer to as "Pig". I would like to refer to it as "\*\*\*\*\*!\*" but apparently I can't, and anyway, if my Mum read it she would be a bit upset.

You may recall, in last month's column, I mentioned that Chris Langford emailed me to ask exactly *how* I was going to share a modem on NT Server over my LAN, and I replied that I was going to review a product called SAPS which does just this thing. So there I was, software in hand, all ready to demonstrate the wonders of SAPS, when Pig failed to re-boot. It was not resting ... it was dead.

Now, this is not the first time I have had problems of this kind with Pig, so I knew it

was a hardware problem and gave it a good kick, and I do mean a literal *kick*, not a metaphorical one. You should never treat hardware with too much respect and should always let it know who is boss whenever you have the chance. It responded slightly to the kick but because I was up against a deadline I had to review an Intel Netport instead. This was also somewhat problematic (as recalled here).

The funny thing was, I had copied all the data files on Pig to my other server "Big Boy" only two days before, because I wanted to reconfigure it with both NT and NetWare. Lucky, huh? The reason I mention this is that if you believe your server is going to last a lifetime, dream on. Mine is from a well-known manufacturer but has been on the blink for 12 of the 24 months I have been using it. I am not revealing the name

of the server because, to be fair, it does receive a lot of abuse — apart from me kicking it. But when I do get it back together, Chris, I will definitely review SAPS — honest.

So there I was, all ready to review the Intel Netport Print Server (*see page 315*). I had the hardware installed, with a test page printed. I decided to install it under Windows 95 because NT Server was down, but I found that the Netport management software, running under Windows 95, couldn't see the Netport so I couldn't configure it.

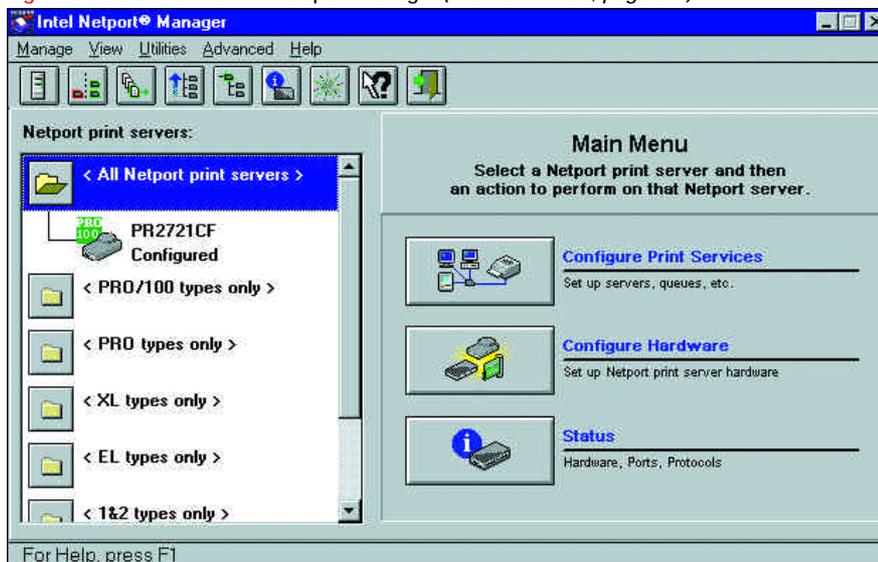
I turned it on and off several times and re-installed the software. I even read the Help file and realised that I needed NetBEUI installed. I re-booted but still got no joy, so I rang Intel tech support and spoke to two of their people for half an hour — very helpful but as baffled as I was — and then decided to attempt configuring from another workstation running Windows 95. Did this. Oops, same problem.

It seemed like a low-level protocol problem (it wasn't the physical media) and my instinct told me that the root of this problem was in Windows 95 itself, not with the Intel software. So I then installed the software onto another machine running NT Workstation 4.0: it instantly saw the Netport and allowed me to configure it.

I know I should really find out exactly what the problem was with Windows 95, but while my server may be a Pig, I also know that quite often, when networking, Windows 95 is a complete dog.

Next month: how to remove the impression of a size-ten boot from your server side panel.

Fig 1 The main screen of Intel Netport Manager (*see mini-review, page 315*)



**Mixed bag**

A few words about correspondence: I am pleased to look at any queries you email me and find them very interesting, so please keep them coming. But I should point out that (a) due to lack of space I cannot print replies to them all, and (b) due to the lengthy process inherent in producing something the size of PCW, there is a significant delay between my receiving them and my reply appearing in this column, so don't wait for me to come up with a fix!

I will always tend towards answering the more generic questions as these are going to be of more use to more readers. And I will also favour those from individuals or those with limited backup support.

I received a query recently from someone working for a well-known IT consultant which charges hundreds of pounds a day for advice. I say to them: "Sorry, this column is for those of us who deal with little networks!"

**OSI models and protocols**

**Q.** "It was good to see coverage of the OSI model in your column but I think you should make a distinction between the model, which applies to almost all comms protocol stacks, and the OSI protocols, which have a small user base, particularly now that the IP suite has taken over the world.

"Your example of two developers in California and Peckham being able to cooperate using the OSI model to interface network widgets would only work if they were using OSI protocols throughout. In fact, there is so much room for interpretation that the widgets would most likely interwork only if they were following a specific OSI profile such as GOSIP. Such profiles are the closest thing to 'an OSI stack', but to use the 'OSI stack' is seriously misleading.

"On the software side, there is also no reason why developers A and B should use even remotely compatible APIs. This has been a major problem with OSI and required the invention of things like System V Release 3 Streams and other models for the software side of protocol stacks.

"The API deficiencies of OSI are another reason why IP has taken over. The latter has a straightforward sockets API rather than a plethora of higher level APIs, and allows selection of suitable presentation/session layer functionality, depending on the application.

"For example, OSF DCE RPC has a very

complex presentation layer function, while Telnet's is extremely simple, each being appropriate to the application domain."

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**A.** Richard, thanks very much for your letter and for clearing this matter up. Any more questions about protocol stacks are coming directly your way!

**Halfway house**

**Q.** "I was interested to read in the February issue of PCW that you intend to connect four PCs together using 10-Base T and to attach further resources straight to the hub. I have a similar situation. I have a 10-Base T network of four PCs plus two printers, and I would like to achieve independence of the PCs and the printers. We run a variety of software: at various times a machine might be running any of OS/2, Windows 95, Windows NT Workstation or Windows 3.x.

"The peer-to-peer style of networking permits each user to share resources such as printers, and to allow other workstations access. For example, workstation A has a printer and workstation B may use the printer as an output device. I do not like this example because the printer is owned by workstation A. I would like the printer to be a network device in its own right, and available to both workstations A and B. In the server style of networking the printer is owned by the server. The server is running permanently and allows workstations access to the printer.

"I want a halfway house situation where the printer is not owned by any workstation or server. I want the printer to be an independent network device in its own right. Any workstation may send work to the printer whenever it wishes.

"There are many sources of standalone box which will allow a printer to become a network device. All I have identified are intended for use with a server operating system. The printer, although connected as a network device, effectively becomes a slave of one particular server.

"Do you know of any software, or hardware/software combination, which will allow the same printer to be addressed as a network device from multiple workstations, with no server involved? I don't expect you to identify a solution for all of the software environments — any of them would be a start!"

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**Mini-review — Intel Netport Express PRO/100 Print Server**

I have been trying to get my hands on one of Intel's Print Servers for quite a while now. I have reviewed a few print servers and, to be quite honest, a couple of them have been extremely poorly made. The Intel is quite the opposite, however, and is designed to withstand wear and tear.

At the front of the unit are the three printer ports, two parallel ports and one serial port, and on the left-hand side is an RJ-45 socket for a length of 10BaseT. There are a couple of recessed DIP switches, a diagnostics button and the connector for the power

supply. The documentation is good, the first page of the Quick Start guide showing

**Fig 2 (right)**  
The Netport print server status

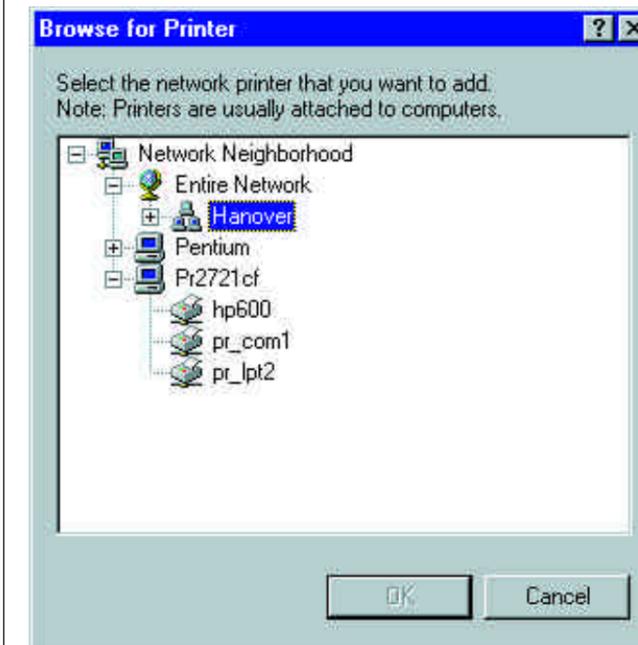
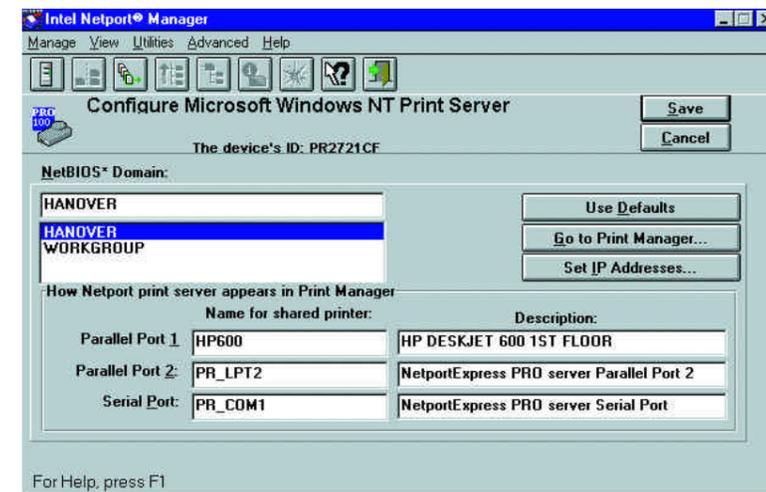


**Fig 3 (right)**

Basic identification details of my DeskJet 600 attached to the Netport

**Fig 4 (below)**

At last! The Netport seen as Pr2721cf under Windows 95



how to connect your printer(s) to the network.

I plugged in the Netport Express and the Activity, Transmit and Receive lights on top of the unit began to flash. I connected the existing printer cable from my tried-and-tested HP DeskJet 600 into parallel port one on the Netport Express and

plugged a length of cable into the RJ-45 socket. It will auto-detect if your ethernet network is running at 10 or 100Mbps/sec. To test that all is well from a hardware point of view, you simply press the diagnostics button on the side of the Express and it should print a diagnostics report. Hardware setup time is three minutes.

I next installed the software. Network operating systems supported are Novell, NT, Windows 95, Windows for Workgroups,

LAN Manager, IBM LAN Server and AppleTalk (Unix is also supported). I chose to install a 100MHz Pentium PC running Win95 and this is where my problems started — I could not get the Netport software (running under Win95) to see the Netport, but I eventually installed the software onto another PC running NT Workstation 4.0 and this went very smoothly indeed.

This is a nice, high-quality piece of hardware, but it's not cheap.

**PCW Details**

Price £468.82 (€399 ex VAT)  
 Contact Intel 01793 431155  
 Good Points High-quality, good management software but...  
 Bad Points ...potential problems installing under Windows 95.  
 Conclusion Handy piece of kit for the small-to-medium-sized ethernet network.

A. This is an interesting one! I have the feeling that what you are after does not exist, although I could be wrong.

In a peer-to-peer situation, a printer hangs off a specific PC which is, in fact, a print server for that PC dealing with the print queue. In a server-based LAN, the printer can hang off the server or, more likely, be an independent physical network device in its own right (see *mini-review of Intel Netport Print Server, page 315*) but — and it is a big “but” — the print queue has to be managed somewhere by the NOS. In a server LAN, this is going to be the NOS running on a server.

So your ideal of “a halfway house situation where the printer is not owned by any workstation or server” is not really possible because it has to be managed by something.

#### There goes the Neighbourhood

Q. *“I have a 486 DX4 100 running Windows 95 and a Pentium 75 with NT W/S 4.0.*

*“Things ought to be going smoothly — after all, this sort of setup is Microsoft’s dream, is it not? Well, unfortunately, the Windows 95 machine shows no computers in Network Neighbourhood — not even itself — even if the ‘T-piece’ on that machine has a terminator on both ends. The Entire Network icon exists but when attempting to open it I get the message: ‘Unable to browse the network ... it is not accessible’.*

*“The NT machine allows browsing of the*

*network, but the other PC (the only other one on the network) does not show. I have toyed with the idea of a hardware fault, but I have tested everything I can think of and that appears not to be the case.*

*“I am a newcomer to networking and can’t be sure all the settings on either machine are correct, but I am fairly confident. Any ideas? (The protocol I am using is TCP/IP, but I have also installed NetBEUI.)*

*“If I enable file/print sharing on the Win95 machine, it does appear in Network Neighbourhood although it takes a couple of minutes for this to happen, during which time it is still unable to browse the network.”*

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A. It is nice to know that this happens to other people apart from me! Don’t worry about being a networking novice: I have been doing this stuff for over five years now and I still often find that after zapping my PC’s hard drive and carrying out a reinstall (which I do on a regular basis to clear out all the dregs of software I have reviewed), I still get this problem from time to time.

I cannot tell you definitely what the problem is but try this:

1. The first thing to do when you have any network connection problems is to check the physical media — do you know for certain that the network cable works properly? Can you borrow another one on a working system for a while and try it with that?
2. Are you certain that the network cards in

each machine work? If not, get their installation disks and run the self-test diagnostics. Then double-check to make sure there are no interrupt clashes; you can do this by looking in Settings/Control Panel/System.

3. Have you tried the Network troubleshooter in Windows 95 Help? This is quite good and has saved my bacon a couple of times.
4. Remove all your network software components and start again, but to start with try just running something simple like IPX or NetBEUI, before trying TCP/IP which is about as much fun to configure as putting your hand into a waste disposal unit and turning it on.
5. Have you tried Find Computer from either the Start menu or Windows Explorer? I have found in the past that although a computer will not show up in Network Neighbourhood you can “Find” it. Strange but true.
6. Zap both PCs and start again. It’s a drastic measure but it often works. It depends how much software you have installed on them because some programs can, for no obvious reason, have side effects on others.

#### PCW Contact

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