

# Intel Fast Ethernet Solution Helps Software Developer Move to High-Bandwidth Performance

*Protel Technology Inc.: Customer Application Story*

*Intel  
Products  
At Work*

Protel Technology Inc. makes a business out of providing customers with powerful yet affordable technology. Customers—who include Hughes Aircraft, Hewlett-Packard Co. and the military—look to the Santa Clara, Calif.-based company when they need functional, intuitive software to design schematics and printed circuit boards (PCBs).

As the leading developer of Windows\*-based Electronic Design Automation (EDA) tools, Protel helps many organizations with the transition to the Windows environment from UNIX\* and mainframe environments. For most of Protel's more than 15,000 customers, that means moving from a software system that costs in the neighborhood of \$50,000 to an easy-to-use Windows-based EDA solution that costs only a few thousand dollars.

Since Protel's founding in 1985, technology advances have fueled the software manufacturer's drive to market leadership. Technology placed a barrier in the path of progress, however, in terms of Protel's local area network. A very power-intensive schematic design application that Protel runs on its servers was causing bottlenecks in network traffic, hampering productivity and straining the patience of network users who needed high performance most.

"When our developers are designing software, they're running C++ compilers on the network, and they need a lot of bandwidth," says Jim Poehlman, network manager for Protel Technology. "That was driving our network down to a halt."

## **The Solution for Higher Bandwidth**

To improve network performance and alleviate user frustration, Protel began looking into 100Mbps (megabits per second) Ethernet technology in late 1994. 100Mbps Fast Ethernet technology is designed to address the network bandwidth requirements of today's high-performance PCs. Fast Ethernet offers up to 10 times the data transmission capacity available over the 10Mbps Ethernet technology defined as a standard 15 years ago.

To Poehlman, 100Mbps technology seemed like the way to go. After researching some of the products available on the market, he decided to deploy Intel's EtherExpress™ PRO/100 Adapters selectively on Protel's 40-node Novell NetWare\* 3.11 LAN in Santa Clara. In January 1995, he installed two of the EISA-based cards in servers and five of the PCI-based cards in workstations. He noticed a dramatic difference almost immediately.

"With Fast Ethernet, we've seen a 70 to 72 percent improvement in bandwidth," Poehlman reports. "The utilization of the network also improved. We were running at



33 percent utilization before. Now we're running at about 12 percent utilization."

The impact of moving to 100Mbps technology was felt as much in employee morale at Protel as it was in productivity. Two months after installing the cards, Poehlman hadn't experienced a single instance of user frustration with slow performance.

"When the network runs fast and well, everybody's happy," says Poehlman. "The developers are more productive, and they can get their job done with fewer headaches."

Protel, which is in the process of moving from NetWare to Windows NT as its network operating system, is installing additional EtherExpress PRO/100 Adapters in workstations with NT drivers.

### **Flexibility for the Future**

Because the EtherExpress PRO/100 Adapters can also run at 10Mbps, they offer Protel appealing options in scalability to match business growth. For example, the adapters can be deployed in high-performance systems at 10Mbps today, then converted seamlessly to 100Mbps operation as user needs and Protel's network infrastructure evolves. The PRO/100's built-in autosensing technology determines the speed of the attached hub port and sets the board speed accordingly.

Protel is on a two-year track for migrating fully to 100Mbps operation. By 1997, the company expects to have all of the individual LANs at its remote sites connected via a 100Mbps WAN, including its international headquarters

in Sydney, Australia, and regional sales offices in Germany and Italy.

### **Reliability is Critical**

Network downtime is a nightmare for any LAN administrator, and Poehlman is no exception. If Protel's network is down, he explains, the company stands to lose \$50,000 to \$100,000 a day. That

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makes reliability the top criteria for selecting a brand of adapters, according to Poehlman, and that's why he's used nothing but Intel adapters for four years. Before beginning the move to Fast Ethernet, Protel's standard configuration was Intel's EtherExpress 16TP Adapter. In addition, Poehlman relied exclusively on Intel adapters in the 400-user environment he managed for his previous employer.

"Intel has really perfected the art of the network interface card," he says. "Intel's done a great job of driver setup and board setup. In four years, I've never had a board go bad on me. That's very unusual. Others just arbitrarily fail on you, and it's a very frustrating issue."

Poehlman adds that Intel also has a proven track record in simple adapter installation and excellent technical support.

### **Integrating New Technology Doesn't Have to Be Difficult**

In any company, the prospect of moving to a new technology can be daunting. However, Poehlman has experienced firsthand that with Fast Ethernet and the scalability offered by EtherExpress PRO/100 Adapters, network managers can be assured of a safe and easy path to high-bandwidth performance.

"Any time you're bringing in a new technology, you always wish you hadn't at first," Poehlman says. "It's not true in this case. I expected a lot of choppiness, but I haven't had that at all. I've had no hangups or problems with the EtherExpress PRO/100 Adapters. The transition was very smooth."

Poehlman also likes the way the adapters work in conjunction with Intel's LANDesk® Management Suite v2.0, a new integrated solution for PC LAN management. As a beta site, Protel got an early opportunity to test the software on a workplace LAN. Without a doubt, Poehlman says, the combination provides a complete solution.

"Coupled with LANDesk Management Suite, the EtherExpress PRO/100 Adapter makes my job easier all the way around," Poehlman says.

### **For More Information**

Call FaxBack\*, Intel's 24-hour response service at 800-525-3019 and request documents 6354, 6369 and 6371 for more information on the LANDesk Management Suite and EtherExpress PRO/100 adapters.