

Intel Solution Boosts F-16 Program's Network Performance, Keeps Costs Down

Frontier Engineering: Customer Application Story

*Intel
Products
At Work*



When your primary customer is the U.S. government, two challenges become paramount. One, you do everything you can to make sure there's no interruption to work flow. Two, you make a concerted effort to spend public tax dollars wisely.

It's a challenge that Todd Farrow takes seriously. Farrow is a network administrator for Frontier Engineering's Technical Services Division, of Dayton, Ohio, providing computer support and training for Wright-Patterson Air Force Base and other corporate customers.

A Highly Demanding Environment

Farrow is specifically responsible for overseeing a network of users working to configure and engineer the F-16 fighter aircraft manufactured by Lockheed for sales to the U.S. military and 20 other countries. The 600-node Ethernet LAN links 558 users who provide engineering, contracting, configuration management, program management and operations for the F-16 program. Users run Microsoft Windows and the Microsoft Office suite. The network operating system is the 1,000-user version of NetWare 4.0.

It's a demanding environment for Farrow, whose duties include troubleshooting, adding new users and managing hardware and software at the servers.

"Users expect constant uptime, 24 hours a day, 365 days a year," he explains. "That means a lot of early and late hours for maintenance."

Keeping the LAN Up and Costs Down

To keep maintenance low, uptime high and cost within reason, Farrow relies on networking products from Intel. Farrow's single-vendor solution includes print servers, management software, virus protection, troubleshooting tools, PC faxing and data backup.

"I like the overall direction that Intel is taking," Farrow says. "With all the software going to centralized management, Intel is taking care of any network problem that could come up. And, the products are very easy to use."



Moving to High-Speed Printing

Farrow recently completed an upgrade that put 70 NetportExpress™ XL print servers to work on Wright-Patterson's F-16 LAN. Originally, Frontier Engineering had installed the NetPort™ I print server so that printers could be located geographically, rather than tethered to workstations. The move up to the NetportExpress



XL server model was prompted by the installation of 30 fully loaded Hewlett-Packard 4Si high-speed printers. “The NetportExpress XL print server was very impressive in terms of throughput,” Farrow says, noting a 100

— “[LANDesk Manager software] saves us a lot of time,” he says. “We can fix the problems quickly, so we can solve many more problems.” —

percent improvement in print job output. “I like the ability of changing the speed of the parallel ports very much. That saved us. If not, the print servers would be too fast for the older printers that we have in place.”

The print server’s hardware design also decreased the likelihood of printing downtime. Because the NetportExpress XL server is external, a printer that fails for any reason can be replaced quickly and easily, Farrow points out. In addition, the NetportExpress XL print server supports NetWare 4.x, even the 1,000-user version.

Minimizing Trips up a Flight of Stairs

When it became clear some time ago that the Wright-Patterson F-16 SPO’s network needed a centralized management solution, Frontier Engineering selected Intel’s LANDesk™ Manager software after evaluating several options. Today, four copies of the LANDesk Manager 1.5 are

implemented on the network’s servers, providing an integrated set of Windows management tools.

Farrow says the software’s Traffic Monitor tool, which provides a real-time graphical display of packet traffic on the LAN, has proved a real benefit. Another useful feature is its Inventory Manager tool, which offers a complete, real-time summary of the hardware and software resources on the LAN. But to date, the LANDesk Manager tool that has proved the most valuable is Desktop Access, which lets Farrow take control of someone else’s PC when problems arise.

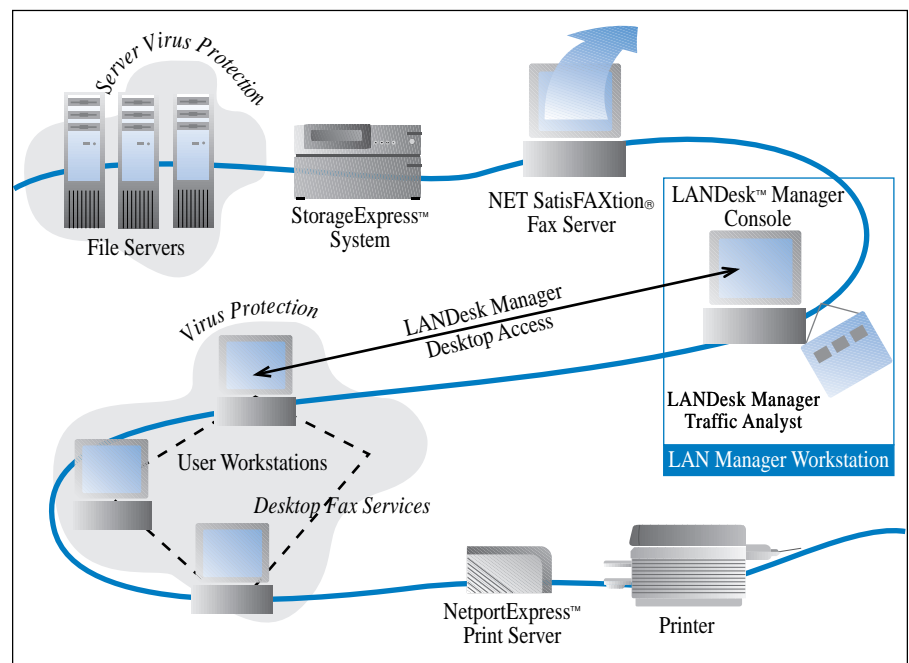
“It saves us a lot of time,” he says. “We can fix the problems quickly, so we can solve many more problems. And, we don’t have to go up a flight of stairs. We can solve probably 60 percent of the problems just by looking at their PC over the network. The other 40 percent is probably hardware failure.”

Reliable Virus Protection

Even the most security-conscious work environment experiences occasional run-ins with PC viruses, and the F-16 network at Wright-Patterson AFB is no exception. In recent years, several viruses found their way onto the network from various causes.

The threat of viruses has dropped drastically, however, since Frontier Engineering installed Intel software as the main virus protection scheme. Four copies of Intel’s LANDesk Virus Protect 2.13 now run constantly on each of the network’s servers, while the workstation portion runs from each user’s log-in script every Monday morning.

“We still have isolated incidents, but we stop most of them,” Farrow reports. “Instead of having a virus spread across all the PCs on the network, we find it right now and we fix it right now.”



Intel products work seamlessly on the network.

Farrow also appreciates the fact that he can protect employees who don't have virus protection at home by taking advantage of the LANDesk Virus Protect software's liberal licensing that permits users to copy workstation protection to their home PC. And, he likes the easy upgradeability to the latest virus patterns.

"All I have to do is call Intel's bulletin board system and boom, I get the new software immediately," he says. "It keeps me current."

Troubleshooting Simplified

Like any network administrator, Farrow recognizes that cable problems are inherent to the job. To help diagnose and resolve problems on Wright-Patterson's F-16 LAN, Farrow uses Intel's LANDesk Traffic Analyst, a troubleshooting tool that decodes packet-level traffic and helps him identify bottlenecks, isolate faults and tune the network for maximum performance.

"Before, we were just using common sense or a portable handheld meter to find problems," Farrow says. "LANDesk Traffic Analyst lets me troubleshoot cable problems from one central PC sitting right next to my desk. Instead of running around, I can do it all from one station."

Saving Time and Money on Faxes

Manual faxing by users on Wright-Patterson's F-16 network used to mean inconvenience and wasted paper. But now, employees send faxes from their

desktop instead of printing them and waiting in line, and they're clicking on a recipient's name in an electronic address book rather than typing numbers into the fax machine.

Farrow had recently recommended for purchase Intel's NET SatisFAXtion® 2.51 fax server software after evaluating it for only a month with a limited test bed of users.

"Users have given us very positive response," he reports. "It saves them

—*“People panicked,” Farrow recalls. “I didn’t, because I knew we had a backup, and I knew [the StorageExpress system] would work.”*—

time, and it's easy to use."

Further, pricewise Farrow feels that Intel's NET SatisFAXtion software has very favorable price to performance numbers.

Surviving the Crash

From both the users' and the network administrator's perspective, every scrap of data that resides on Wright-Patterson's F-16 LAN is vital.

"The information on the network—if lost—could cost the government millions of dollars to recover in man hours," Farrow says.

To guard against such loss, Frontier Engineering plugged Intel's centrally

managed StorageExpress™ XLE backup server into the LAN in October 1993. The installation included four 8mm 10GB tape drives to enable quadstreaming, allowing data to be backed up on multiple tape drives. The StorageExpress system was put to the test in April 1994 when a hard drive that had served the network full-time for three years failed.

"People panicked," Farrow recalls. "I didn't, because I knew we had a backup, and I knew it would work."

In addition to rebuilding the data without problems, Farrow says, the StorageExpress backup server offers other benefits that fulfill customer needs. It integrates well into the network as a Novell server, its intuitive interface makes it extremely easy to use, and it provides quick point-and-click recovery of files inadvertently deleted by users.

A Network Solution that Won't Let You Down

With networking products from Intel, customers such as Frontier Engineering can meet the high demands of clients who can't afford network downtime.

Intel networking products are engineered to work together, providing a single-vendor solution designed for integration, centralized management and ease of use. Further, Intel backs up every one of its high-quality products with comprehensive information and technical support.

For More Information

For further information on any of the products discussed in this story, Call FaxBack*, Intel's 24 hour response service, and request any of the documents listed below.

Product	Document Number
StorageExpress™ System	6700
LANDesk™ Manager	9555
LANDesk Virus Protect	9558
LANDesk Traffic Analyst	9551
NET SatisFAXtion® Software	9590
NetportExpress™ Print Servers	9604

North American Service Center

Oregon, USA

Product Information	800-538-3373 or 503-264-7354
FaxBack	800-525-3019 or 503-264-6835
TalkBack	800-368-3160 or 503-264-7777
BBS	503-264-7999

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