Florida Wildlife's High-Flying Wireless LAN Solves Data Transfer Problem

Glenn Reynolds, a technical support coordinator and part-time hawk tracker at the Florida Game and Fresh Water Fish Commission in Tallahassee, Florida, is responsible for maintaining database records of animals across the state. He is particularly focused on rare species, and on any given day this could mean counting shore birds or capturing Cooper's hawks—but it always means lots of data, which his agency runs over several Ethernet LANs.

Two years ago, when expansion plans called for relocating employees to an office across the street from the headquarters, the Commission sought a way to electronically connect the two facilities. This presented a number of problems for Reynolds. For starters, because the new office was listed on the National Register of Historic Places, Reynolds was discouraged from mounting anything obvious on the exterior of the building—nevertheless, he needed a wire-speed Ethernet link between the headquarters building and the satellite office.

Hoofing it to roofing it

At first, Reynolds and his coworkers transferred data and accessed programs from the main LAN using a standard modem line. The modem line—slow and inefficient—was a constant source of frustration for Commission employees. "We had one modem for everyone in the office to share," says Reynolds. "People would attempt to dial into the machines across the street to exchange data, but there were too many people and too few lines. To complicate matters, the computer in the main building was receiving calls from other people across the state."

Even when a connection could be made between the offices, the line often went down before the data transaction was complete. "The problem was frustrating and time-consuming," Reynolds continues. "It got so bad that people would give up and walk across the street to get at the data they needed. Obviously, we needed a better solution."

Network speed connection

The Commission considered several options before selecting the Free**space***Lite* solution—fiber-optic cable, leased lines, and radio frequency (RF) technology. Trenching was not an option because cost and time issues made it impractical.

To solve the problem, Reynolds—through a local system integrator—installed Free**space***Lite*, a system from Proteon LAN Products by Microvitec, Mississauga, Ontario, that uses infrared laser technology to provide building-to-building wireless Ethernet connections. The link proved to be economical and highly reliable, increasing worker efficiency, according to Reynolds' estimate, by 10 to 20 percent.

The Florida Game and Fresh Water Fish Commission's need for wireless links was an ideal fit for Free**space***Lite*. Free**space***Lite* provides highly reliable building-to-building connectivity at full network speeds. The installed equipment is protocol independent and provides wire-speed interbuilding links for half- and full-duplex 10-Mbps Ethernet and 4/16-Mbps Token Ring. The unit's telescopic sight and tone alignment are simple to use. To connect the link Reynolds simply sighted the target in the crosshairs, then adjusted it slightly to maximize the signal strength reading on the unit. Reynolds was able to lock-in relatively quickly and get up to full speed almost instantly.

Featuring Proteon's SkyFibre technology, Free**space***Lite* delivers greater than 99.9 percent statistical availability at distances of up to 500 feet. A beneficial outcome of this reliability is user satisfaction—something the agency noticed almost immediately.

Reynolds cites the time savings as one of the key benefits of Free**space***Lite*. "The system has reduced our frustration level by providing our staff with a quick and easy way to transfer data," says Reynolds. "The system provides network speed, which is even faster than a T-1 connection."

Out-of-sight

Another benefit has been the system's unblemished reliability record. If anything temporarily impedes the Free**space***Lite* beam, it resets itself quickly. The reset is so fast that it is transparent to the users. "The system's reliability is exceptional," says Reynolds.

In applications all over North America, Free**space***Lite* operates in everything from 100 degrees to 100 percent humidity to fog and wind. During the first week of operation in Tallahassee, nature staged a tremendous test of reliability—a heavy tropical downpour.

It was also known that the link distance was 550 feet, which is more than 10 percent greater than the product specification. What makes the distance even more remarkable is that one of the units sits behind a window (the specification calls for both units to be outside) because Reynolds chose to mount it that way for the sake of his landlord.

After accumulating research data on visibility from the local airport, Reynolds fully expected the Free**space***Lite* unit to be inoperable as much as 17 hours a year due to weather conditions that would impede the beam. However, the unit has not experienced a single minute of downtime since it was installed in June 1997. "Even in a heavy rain," says Reynolds, "where you could barely see the laser unit across the street, we didn't experience any data transmission shutdowns."

Price was also a factor. "Cost is always a factor for us because we operate on a very limited equipment budget," says Reynolds. "We considered using radio frequency (RF), but we found we could get Free**space***Lite* for less."

Besides cost, Reynolds discovered another drawback of RF. "The other thing we worried about with RF was interference with other equipment," he says. "We use radios to track wildlife, and we've experienced interference from other radios even though our equipment is operating on different frequencies than other equipment in the area. RF was considered more risky than the laser units."

Reynolds concludes, "The beauty of the Free**space***Lite* product lies in its portability, its higher bandwidths, and that it incurs no monthly lease line charges

from your telco provider. In fact, our units will pay for themselves in less than two years when compared with the cost of a leased line."

###