



Town of Enfield, Connecticut

RoamAbout Wireless Solutions Connect Government to the People

The Town of Enfield, CT recently deployed Enterasys Networks RoamAbout wireless solutions to connect several buildings to the town network—saving money, sharing resources and preserving a historic landmark. As one of the nation’s oldest

towns, Enfield has a long tradition of providing outstanding services to its citizens. The local government uses the town network to deliver a wide range of these services—including education, public safety and public works, tax assessment, planning and development, social services, attendance, payroll, insurance and Internet access. As part of their commitment to effectively support the community, the local government decided to add new facilities to the Enfield network and use current resources more efficiently.

The town was named and incorporated by the Commonwealth of Massachusetts in 1683 and annexed to Connecticut in 1749. Enfield is located eighteen miles north of Hartford, CT and eight miles south of Springfield, MA. The town encompasses 33.8 square miles, has 174 miles of paved streets and is populated by over 46,000 residents. Enfield is governed by a town manager, an 11-member elected council and has a 10-person board of education.

Industry:

Government, local

Locations:

Approximately 500 end users in 1 main facility and 19 remote sites

Services:

Ensure the safety, health, education and general well being of over 46,000 town residents

Challenge:

Upgrade town infrastructure quickly, reliably and cost effectively

Solution:

Enterasys RoamAbout wireless solutions used to accelerate bandwidth at older locations and connect remote school wing, branch library and activity center. SmartSTACK switches help network migrate to 10/100 Mb and backbone move toward trunked 200 Mb.

Benefits:

- Wireless networking saves town money by eliminating thousands of dollars of recurring costs
- New locations connected by RoamAbout at a fraction of the cost of fiber
- Increased bandwidth delivers faster data flow and enhanced performance
- Users can take advantage of advanced technology and the latest convergence applications
- More town facilities now sharing town resources, increasing government’s level of service
- Additional students and teachers can now use the Internet as an educational resource
- Wireless networking supports future two-way web traffic

The Challenge:

Find a cost-effective way to expand the network, maintain reliability

Charlene S. Bond, Enfield’s Director of Information Technology, was looking to connect a school wing, a branch library and an activity center to the town network—maximizing resource sharing while preserving building structure and appearance. It was important to Bond to keep upgrade costs down and data speed up. The installation process needed to be fast so the network could continue to support town operations without a disruption in services. The new setup needed to offer data protection, fully support current demand and be scalable to keep up with new technology.

Bond and her nine-person IT team manage the network that keeps town operations functioning smoothly. They support about 500 end users total, with user groups organized according to their particular needs. “Our user community includes town administration, police, school administration, faculty and students,” she said. “We are continually adding new users to our network and must be prepared to provide the required level of service and necessary data security in a short timeframe,” Bond added.

The Solution:

Install RoamAbout product family for backbone-quality access

Bond was impressed by the cost savings, speed, convenience, security and flexibility of a wireless-to-LAN solution. Site investigations at Enfield showed that Enterasys RoamAbout could support wire speeds up to 11 Mbps. This bandwidth will allow Enfield users to take advantage of emerging technologies such as voice-over-IP, video-to-desktop, distance learning and e-commerce.

Bond considered installing a fiber backbone and stringing cable but decided against it. She didn't want to deal with complicated regulations on running wire over telephone poles. Costs were also a factor. "We chose wireless connectivity over dedicated T1 or Frame Relay access because of the higher performance (7x dedicated T1) and the elimination of recurring monthly costs. Wireless pays for itself in a year or less. You don't have ongoing costs or need to pay to maintain wire."

After deciding to go wireless, the Enterasys team was Bond's first choice. "We have been a long-standing Digital customer (20+ years) because they delivered technology and service that consistently met our requirements. When Cabletron acquired Digital's Network Products Group, we were fortunate that the Digital Network sales and support team stayed in place and Cabletron continued to support and enhance the Digital line of products. Now as we continue to grow and with Cabletron now serving us as Enterasys Networks, we are looking forward to incorporating more Enterasys products into our network."

Bond's team recently connected three facilities into the town network: high school wing, library branch and activity center. "We incorporated both workgroup and LAN-to-LAN wireless networking," stated Bond. "We needed to provide backbone-quality access to some remote buildings. We used Enterasys' 11 Mb Wireless LAN-to-LAN solution to reach these locations at a fraction of the time and cost of installing a fiber backbone."

An Enterasys pre-sales engineer visited Enfield to perform site surveys and test the area for line-of-sight connectivity. "It was something to see him sitting on the roof holding an antenna," Bond noted. "The whole process happened really quickly and only took a couple of days. He came by, tested the equipment, we ordered it and he installed it. The initial installation was a piece of cake. We just needed to have a branch on a tree removed."

The high school was across the parking lot from the network's main distribution facility. The building was U-shaped and had a remote wing that needed network access. The distance to the nearest node was too far to use Category 5 or extended Category 5 cabling. Bond thought about using fiber but felt it was not a viable option. One vendor estimated that fiber would cost Enfield about \$8000. Additionally, Bond would probably need to install an intermediate distribution facility—which would have added to the costs. Bond estimated that it cost Enfield about \$2500 to install wireless connections to the remote wing.

The Pearl Street branch library is located in a "Carnegie Building" that was nominated for the National Historic Registry in September 1999. After the library received a grant to become wired for Internet access and share computer resources, Bond decided to use Enterasys RoamAbout to connect to the LAN within the library. This preserves the building's historic design without needing to knock down walls, drill access holes, emplace conduits, or run unsightly wires. The branch connects to the town network via a VPN gateway.

In addition, a RoamAbout was used to connect the activity center to the town hall. The Enterasys pre-sales engineer returned to Enfield to re-evaluate the wireless connection. "This latest enhancement increased the bandwidth from 56K Frame Relay with a committed information rate of 28.8K up to 11 Mbps and saved us approximately \$3000 per year in recurring costs," said Bond.

Enfield's WAN currently consists of one main site located at town hall and 19 remote sites— including the police station, public works complex, water pollution control plant, activity center, school administration office, 12 public schools and the main library. TCP/IP addresses are used to control network access, separating staff from client users. According to Charlene Bond, "We work with numerous types of data, which include 'highly,' secure town and school system information.

"The Town of Enfield has over the past five years implemented many key technologies to accommodate both our user base growth and migration from a traditional time-sharing mini-computer environment to a client-server model (NT workstation client to NT Server)," said Bond. "Our Wide Area Network has evolved from a multiplexed 9.6K connection into a series of point-to-point T1 links and Frame Relay connections. We use Enterasys routers for high-bandwidth remote locations such as police department, town high schools and a twelve-site Frame Relay Network."

Bond continued, “Our Local Area Network has evolved from asynchronous terminal servers connected via 10Base-5 (thick wire Ethernet) to a switched/routed 10 Mb Ethernet backbone using MMF fiber vertically and Category 5 UTP horizontally. VNswitch 900s are currently being used as our backbone switch. We will slowly integrate SmartSTACK products as we migrate our users to 10/100 Mb and our backbone to trunked 200 Mb access.”

Bond described how she protects sensitive town data, “We have gone from no network security to implementing routed IP subnets with extensive Access Control Lists (ACLs) to provide multiple levels of secure access to our diversified user community. We also incorporated both a proxy server and hardware-based firewall for Internet access.” RoamAbout offers 40-bit and 128-bit encryption, access control and multiple authentication keys.

Bond uses SPECTRUM to help manage the Enfield network. “Our current management strategy includes a combination of element managers (ClearVISN and SPECTRUM Element Manager) and web-based configuration tools,” she explained. “Our servers are currently being managed via Microsoft’s SMS. Our intention is to move to an enterprise network management platform that will allow us to manage all components of the Town of Enfield enterprise including desktops, servers, as well as all active network devices.”

The Future:

Expand service to new customers including senior center

Bond wants to use the speed of wireless technology to accelerate connections in other parts of her network. Some buildings still use serial connections, old 9.6 lines and multiplexers. She would like to eventually connect all town facilities—including a new computer lab in the senior center.

“We are also strongly considering implementing an ‘all’ wireless network within our main library, instead of replacing the existing wiring,” she said. Bond wants to leverage RoamAbout’s 11 Mbps throughput to improve access to the town’s web site and develop a responsive, on-line KnowledgeBase to keep residents informed about town news and services.

Bond’s department has come a long way since Charlene joined the town in 1976. The staff has grown from one person working on a mainframe and terminal to nine people that provide administrative services to Enfield’s public schools and support the entire town. Bond summed up her department’s operations, “We’re ahead of the curve and out there working on state-of-the-art projects. And although I typically keep a low profile, I would like the citizens of Enfield to know we are doing good things. We are developing an advanced infrastructure, trying hard to help end users and provide the community with a better level of service.”

Contact Us

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