

Delivering a Gigabit Wide Area Network (WAN) to Fairfield, CT



The technology plan called for a robust and flexible network design that provisioned for potential upgrades and modifications to the network design as future developments are realized.

INDUSTRY: Municipal/Government

BUSINESS CHALLENGE: Design and implement robust and flexible Wide Area Network connectivity across multiple locations.

NETWORK SOLUTION: We deployed a combination of dark-fiber, wireless, and other broadband technologies to achieve full connectivity to all sites over a converged IP network.

BUSINESS VALUE: Our solution enabled the municipality to exercise better administrative control over its network and enhance staff productivity as well as citizen satisfaction.

ChimeNet Delivers a Gigabit Wide Area Network (WAN) to a Connecticut City



Client
THE TOWN OF FAIRFIELD, Connecticut, needed flexible IP network solutions that would allow administrators to perform data consolidation of networks and extend services throughout the network, while providing a scalable foundation for future technologies.



CHIMENET’S NETWORK DESIGN FOR A CONNECTICUT CITY IS ENHANCING employee productivity, improving responsiveness to citizens, supporting education, and making network administration more efficient throughout its offices.

The Challenge

ChimeNet was engaged by a Connecticut city to design and implement a new wide area network. As part of this effort, the technology plan called for a robust and flexible network design that provisioned for potential upgrades and modifications to the network design as future developments are realized.

The city has a culturally diverse residential population of more than 35,000 and is a thriving business community. The town government provides a wide range of educational and municipal services to its citizens. Its employees handle everything from building permit information to fire station services, and from the high school tech lab to senior center programs, as well as public works, educational services, administrative functions, and public safety.

Data technology plays an important role in facilitating communication among city employees and the general public. With 12 municipal departments and 10 schools, employees depend on technology for data file transfer, e-mail communication, and educational services throughout the city.

After years of steady use with minimal upgrades, the city’s existing communications infrastructure was inadequate. The network was composed of devices from several different manufacturers — each with its own capabilities, operating system, and interoperability issues — making network management difficult. Internet access and critical business applications, including e-mail, were unavailable at many of the sites, slowing employee responsiveness and reducing productivity.

After performing an in-depth strategic planning review to evaluate the city’s infrastructure, officials concluded that the most cost-effective solution would be to create a single converged IP WAN infrastructure that could deliver data services to both its municipal and educational offices.

The city needed a flexible IP-based solution that would allow administrators to consolidate their data networks and extend their services throughout the network, while providing a scalable foundation for future technologies. The solution would have to include solid security to protect sensitive government data and communications. It would have to provide robust management features, so that the city’s small technology and communications staff could administer the system in-house, and it would need to be easy to use so that city workers could improve their productivity quickly and with minimal training.

The Solution

ChimeNet deployed a combination of dark-fiber, wireless, and DSL technology to achieve full connectivity to all sites over a converged IP network. In the process, ChimeNet had evaluated several vendors, but found that Cisco’s solution provided the best mix of scalability, manageability, and flexibility for the city’s requirements.

Working in close collaboration with their technical department, ChimeNet recommended and deployed a Cisco Catalyst 6506 switch at the high school hub site to service all the elementary and middle schools. Each school location has a Cisco 3550 switch to terminate the dark-fiber. Gigabit uplink interfaces on the 3550’s at each of the schools create a 1 Gigabit Ethernet WAN backbone for the city’s educational department.

A Cisco 3550 12G switch was deployed at the City Hall site to service all the municipal locations. At each municipal site, a Cisco 3550 was installed to terminate the dark-fiber from City Hall at 1 Gigabit speeds. In locations in which bandwidth speeds of 1 Gigabit were not required and monthly recurring costs could not be justified, Cisco wireless and DSL services were deployed. Please refer to diagram A.

The Cisco 6506 & 3550 switches are ideally suited for high performance IP applications. These switches offer industry-leading 10/100 Ethernet and Gigabit Ethernet port densities while providing high network resilience to keep vital municipal communications like emergency services up and running.

To meet the increasing demand for low-cost services, ChimeNet deployed Cisco Aironet access points in areas where security was essential and fiber costs were at a premium. Unlike competing products, the Cisco Aironet solution offered enterprise-class wireless security. This wireless security solution provides point-to-point authentication and centralized key management and distribution, safeguarding confidential business information as it is transmitted over the WLAN.

To provide end-to-end network security through the private network, ChimeNet installed DSL and VPN technology at the city’s most remote locations. City offices use the Cisco 2600 Series routers for network connectivity and VPN termination to the backbone. These modular multi-service access routers offer flexible LAN and WAN configurations, multiple security options and a range of high-performance processors.

To provide end-to-end network administration, the city is using ChimeNet’s Managed Services to monitor its entire backbone. ChimeNet’s managed solution allows administrators to centrally manage network characteristics such as availability, responsiveness, resilience, and security at all locations, a capability that was lacking in its previous system.

Results

The city’s new network became operational in July 2004, and is producing significant improvements. Along with saving money on recurring costs, the ChimeNet solution has enabled the city to exercise better administrative control over its network.

Previously, if an educational administrator needed access to computer resources, he or she would have to physically go to the high school to retrieve this information. Now it only takes seconds across the new Gigabit backbone to retrieve educational files or documents. End users are also discovering that the ChimeNet solution is helping them respond to citizen needs more quickly, stay in touch with clients and colleagues more effectively, and improve personal productivity.

ChimeNet credits the close cooperation of the city’s municipal and educational departments as critical to the success of the new network, and notes that the two departments now work even more closely together and share resources.

Next Steps

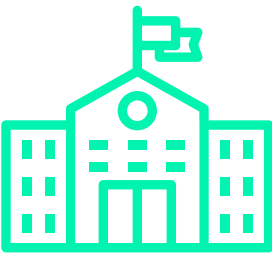
After completing the initial deployment of the WAN network, the city began taking advantage of some of the unique benefits of a converged IP network solution, such as unified messaging.

To enhance the overall performance, reliability, and manageability of its network, the city also started to centralize Internet connectivity. Since the city’s new network resides on a single converged infrastructure, administrative activities such as this are more convenient and economical.

Wireless gave the low-bandwidth municipal sites a relatively inexpensive way of providing connectivity to City Hall and the Internet. Gigabit connectivity in the schools increased student access to online information for which the potential for learning is virtually unlimited.

The flexibility of ChimeNet’s solution is only at its infancy for this city. As the need for data requirements increase throughout the city, the most compelling benefits of the new WAN will be realized.

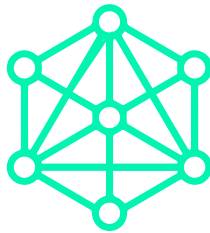
By the NUMBERS



Managed connectivity for
12 MUNICIPAL DEPARTMENTS AND 10 SCHOOLS



ChimeNet’s work involved more than
188 HOURS OF LABOR.



Single Converged IP
Wide Area Network

Contact ChimeNet to see how we can help your business succeed in IT.

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The ChimeNet logo is displayed in a serif font, with a thin arc above the letters 'i' and 'm'. The background of the footer is a dark, blue-toned photograph of server racks with glowing lights.