City Accelerates Applications Across WAN to Police, Fire, and Parks

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EXECUTIVE SUMMARY

CITY OF FORT WAYNE
- Government (Municipal)
- Fort Wayne, Indiana
- 1900 employees

BUSINESS CHALLENGE
- Enable centralization of remote application, file, and print servers for operational efficiencies
- Avoid the cost of purchasing additional bandwidth to city buildings and to achieve LAN-like user experiences for media-rich applications
- Enable the use of video conferencing, video on demand, and other technologies that enhance learning and avoid the need for travel

NETWORK SOLUTION
- Cisco Wide Area Application Services (WAAS)
- Cisco Catalyst 6500 Series Switches
- Cisco 1800 and 7600 Series Routers

BUSINESS RESULTS
- Decrease of 40-50 percent, on average, in bandwidth consumption for file transfers, translating to a 12-18 month payback period for the Cisco WAAS deployment
- Eliminate additional T1 WAN link costs
- Ability to introduce additional bandwidth-intensive voice and video applications without additional cost

Cisco Wide Area Application Services (WAAS) speeds media-rich applications across the WAN, while enabling centralization of application, file, and print servers.

Business Challenge

The City of Fort Wayne has embraced technology as a means to narrow the digital divide and fuel economic growth. The self-proclaimed "most wired and inspired city in America!" is Indiana's second largest with a population of 250,000. Mayor Richard Graham recently won a national technology award and is preparing to host the city's first KillerApp Conference in spring 2007. Chief Information Officer Clifford Clarke is laying the foundation to provide city businesses, citizens, and employees with efficient, high-quality IT services for the next decade.

To ensure efficient services to the City of Fort Wayne, Clarke, collaborating with other government agencies, recently launched a Consolidated File Storage & Network Upgrade project to centralize and upgrade application, file, and printer server platforms. The project includes servicing more than 40 remote locations, including police, fire, parks, and water treatment facilities.

Although upgrading servers was important, bringing them back to the City-County Building on One Main Street in Fort Wayne translated into more cost-effective data center operations, such as standardized backup and routine maintenance. But a potential decrease in user satisfaction among the approximately 1900 city employees who are connected to the data center with T1 links was a serious concern. Knowing that WAN traffic would only increase with the increased usage of video conferencing, video on demand, and media-rich training, Fort Wayne's IT group looked for a consolidation architecture that could reduce stress on the WAN and deliver LAN-like file system performance for city departments.

"We were particularly concerned about our city's Fire Academy, because they rely heavily on moving multimedia training files over the network," says Clarke. "To give the Academy and other high-traffic remote sites the service that they require, we were faced with three options—force reduced traffic, add more T1 lines, or find a WAN optimization solution. But before committing to a new WAN solution, such as the Cisco Wide Area Application Services (WAAS), we had to be

convinced that it could meet all of our IT and end user requirements and provide a return on investment that would translate into a fast payback for the up-front costs."

Network Solution

Working with the city's onsite IT consulting service provider, Affiliated Computer Services, Inc. (ACS), Clarke's team approached its Cisco account team for a recommendation. Without the budget of a large corporation, the city was looking for a solution that could be transparently deployed into their existing Cisco switching and routing network and keep pace with the mayor's sponsorship of media-rich applications. The account team proposed the WAAS solution, which employs acceleration techniques including compression, redundancy elimination, transport optimizations, caching, and content distribution. These techniques help overcome bandwidth, throughput, and latency limitations associated with TCP/IP and application protocols, and facilitate centralization and data consolidation efforts while optimizing performance for remote users.

Fort Wayne's first step was to test file transfer speeds across the WAN from the file servers in the data center to one fire department. Before WAAS was installed, the link was completely saturated; after installation, WAN traffic decreased by 40 to 50 percent. On some days, WAN traffic dropped as much as 61 percent by utilizing WAAS because the Cisco WAAS solution pre-positions and compresses files that remote users access over the WAN.

"When they first asked me to try opening one of our 40 MB training files that had been moved to the data center SAN [storage area network], I thought that there must be a mistake," says Jeff Stemen, a firefighter at the Fort Wayne Fire Training Academy. In this instance, the file was transferred in less than 20 percent of the time that it would have taken without WAAS installed. Thus, end users are now experiencing LAN-like speed.

"I could not believe that I was opening a remote file—it came up so quickly that I thought I must have opened a local copy instead. The results proved that we can move ahead with our plans to use more video on demand for training classes, knowing that the Cisco solution can give us the performance that we need to make the program a success."

Early testing also gave the Fort Wayne team a chance to understand other unique aspects of the Cisco WAAS solution. For example, the files are intercepted straight off the router, without the client ever having to manually identify where the file is coming from. Further, zero changes are needed on the server side.

After one month, Fort Wayne officially accepted the Cisco-proposed solution. "Performance was a big factor in our decision, but we also recognized and appreciated the superior implementation of the Cisco acceleration platform," says Clarke. "Other acceleration products use single-point tunneling, but Cisco's product applies acceleration at the application level and gives us a much more transparent solution, which protects our existing investments in network and security policies. After evaluating all of the alternatives, we feel that Cisco has entered the market with the best technology in this arena."

Today, the City of Fort Wayne is confidently moving ahead with the Consolidated File Storage & Network Upgrade project. As servers are moved back into the data center, traffic is evaluated and Cisco WAAS solutions are deployed when bandwidth utilization or the user experience calls for optimization.

Business Results

The Fort Wayne acceleration solution has met the city's requirements for upgrading and accelerating data center application, file, and print services, and reduced bandwidth utilization over highly traversed links. However, the more significant benefits have come from the data center consolidation initiative that the successful acceleration enables. Reductions in capital and operating expenses—from the elimination of underutilized servers and duplicated administration efforts at remote sites—will extend over many years.

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> **—Clifford Clarke, Chief Information Officer, City of Fort Wayne, Indiana**

"In terms of the recovered bandwidth and the savings that it lets us gain from our server consolidation efforts, the Cisco WAAS solution pays for itself in less than 18 months," says Clarke. "We also discovered that users of a parks department application hosted in our data center immediately enjoyed better performance. This, in turn, leads to increased productivity and happier employees." Contracts and HR teams also saw application performance improvements.

"Our plans are to provide all city IT server infrastructure the security, management, and environment of a data center, and we are confident that the Cisco wide-area acceleration technology gives us a solid platform for evolving our IT infrastructure and helps my group remain focused on enabling our stakeholders."

The associated migration to a storage area network within the data center introduces additional long-term benefits for the city:

- Centralized and uniformly deployed data protection
- Simplified administration and monitoring of software licenses
- Ability to centrally manage data access policies
- More reliable storage environment due to temperature and humidity controls
- More efficient backup and restore processes
- Adherence to the quality and grade standards for servers acquired

PRODUCT LIST

Application Networking Services (ANS)

- Cisco ACE Application Control Engine Module
- Cisco AVS 3100 Series Application Velocity System
- Cisco Content Switching Module
- Cisco CSS 11500 Series Content Services Switches
- Cisco GSS 4400 Series Global Site Selector Appliances
- Cisco Application and Content Networking System (ACNS) Software
- Cisco Wide Area Application Services (WAAS) Software

To learn more about Cisco ANS solutions, go to cisco.com/go/applicationservices.

To learn more about Cisco WAAS solutions, go to cisco.com/go/waas.

Next Steps

The city's network and data center improvements are eliminating older equipment from city offices, and introducing more cost-effectively supported solutions in the data center. Encouraged by the results from the Cisco WAAS project, Fort Wayne is moving forward with evaluations of the Cisco Application and Content Networking Solution (ACNS) software to further optimize video services. Clarke says, "Fort Wayne plans to increase its use of video and IP telephony, and Cisco's aggressive position in this area aligns with our plans. Cisco has the right product roadmap, and solutions like WAAS and ACNS are positioned to deliver what we need for our 17 video conferencing sites. We are optimistic that Cisco will continue to be a dominant player in this business-critical area."

For More Information

To find out more about Cisco Application Networking Services, go to:
http://www.cisco.com/en/US/products/hw/contnetw/index.html.

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