Texas County Improves Efficiency for Employees and Citizens

Ellis County cuts operation costs while increasing mobility countywide with Cisco LAN, wireless, and voice platforms

EXECUTIVE SUMMARY

ELLIS COUNTY, TEXAS

- State and Local Government
- Ellis County, Texas USA
- 148,186 residents

BUSINESS CHALLENGE

- Centralize network infrastructure for ease of management
- Reduce maintenance and support costs
- Improve mobility for employees at offsite locations

NETWORK SOLUTION

- Update network infrastructure to support new services, including Cisco Unity voicemail
- Improve mobility for employees working offsite with deployment of Cisco wireless and VPN solutions
- Integrate customer service functions with a call center to decrease current call queue

BUSINESS RESULTS

- Reduced maintenance calls to IT department by 50 percent
- Improved citizen call response time from four minutes to 60 seconds
- Tripled network speed to allow for video streaming in Sheriff's office

Business Challenge

Ellis County in Texas was ranked the 96th fastest growing county in the United States in 2010. The county has 148,186 residents within its 952 square mile borders and is home to 13 cities, each with peaceful neighborhoods and thriving business sectors. Although the County continues to grow and thrive, its network infrastructure remained stagnant and was unable to meet the evolving needs of its employees and citizens.

Ellis County did not have a centralized office for its employees. Instead multiple office locations were scattered across the county, and in some cases, employees teleworked from home. Similar to the employee office structure, its network infrastructure was located in multiple places, making it unmanageable and piecemealed together using low-cost wireless hubs.

In addition, the county relied on an outdated Avaya voice system, and several offices were serviced by standard telephone lines. Regularly, the IT department struggled to keep phones and directories in sync with each other, and employees often had trouble with directing calls to the appropriate department or person and dropped calls. The county had too many phone service providers and wanted to consolidate its billing and reduce its expenses by utilizing one voice solution.

The county's wireless network consisted of a couple of switches that were off the shelf with no systematic solution or approach to the network. This limited switching caused a lot of technical problems, especially as the county continued to grow. Wireless capabilities were limited to specific departments, because each had to pay for wireless if it wanted the capability for its employees. Ellis County had individual access points where users had to reconnect every time they moved within the building, which also generated a lot of support issues. Lawyers and other people visiting the court had to bring an air card if they needed wireless. The lack of wireless severely limited people's mobility and made it difficult for people to do day-to-day tasks.

In addition to Ellis County employees, the Sheriff's Office and Ellis County Jail were running into a number of issues, including loss of wireless and limited bandwidth, which affected its ability to process inmates and retrieve secure footage from field vehicles.

Network Solution

Ellis County decided to overhaul three areas of its technology infrastructure in an effort to improve the capabilities and ease of use for employees and constituents. The three areas were the county's large area network (LAN), voice solution, and wireless network.

LAN

Ellis County upgraded its existing LAN switching to a Cisco® 6509 core switch. The central location now handles all of routing and back-end connection to the server environment, which has helped to improve the ease of management, making it easier for IT officials to adapt the network to the county's needs, and increase the physical and cyber security of the county's network.

"In addition to deploying new technology throughout Ellis County, the IT department ensured that the Ellis County Historic Court House, a major historic landmark in Ellis County and the state of Texas, received the same state-of-the art technology," says Teral Crawford, IT director for Ellis County. "This is a great example of how we integrated the network countywide. During the network upgrade we made it a point to preserve the historic nature of the 115-year old building. As a result, we were able to maintain its authenticity while installing new technology, bringing the building into the next generation. Many cities and counties have historic buildings, however, are afraid to install new technology for fear of destroying the integrity of the building. We saw that it is possible to do both with Cisco."

Unified Communications

Ellis County installed Cisco Unified Communications and Unity® voicemail countywide to reduce wait time for callers, improve ease of directing calls, and increase ease of installing new phones. In addition, the county deployed Cisco 7965 phones to help ensure that all employees had access to voicemail and other voice capabilities, including conference calls.

"We notoriously receive a lot of questions and complaints about phone and voicemail technology; however, with the 350 new Cisco 7965 phones, we have received a very small percentage of either," says Jared Trog, IT director for Ellis County Sheriff's Office.

Wireless

The Ellis County IT Department did not have the funding to install a wireless infrastructure countywide. However, for many businesses/departments, wireless was critical. These departments had to install the wireless with their own funding, so they were utilizing the cheapest system available; therefore, the departments did not get the greatest service, driving them to get a new

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— Teral Crawford , IT Director , Ellis County, Texas

system: Cisco. Today, wireless capabilities are countywide throughout all major facilities.

Business Results

Ellis County has seen a broad range of benefits from its new Cisco LAN, wireless, and Unified Communications platform, including increased efficiency, cost savings, and ease of management.

“In the past, we experienced 10 to 15 milliseconds of latency, but after deploying the new Cisco infrastructure, we run into less than 1 millisecond of latency,” says Crawford. “The integration and centralization of our network infrastructure have created fewer headaches for our IT team and reduced management concerns. It simplified physical maintenance and reduced the number of questions by more than 50 percent.”

PRODUCT LIST

<<List Routing and Switching first; list others by category to match Cisco.com hierarchy.>>

Routing and Switching

- Cisco 6509 Core Switch Product

Security and VPN

- Cisco ASA 5500 Firewall and VPN
- Cisco Mobility Services Engine (MSE) 3310
- Cisco Wireless Control System (WCS) 6.0

Voice and IP Communications

- Cisco 7965 phones
- Cisco Unity voicemail
- Cisco Unified Communications Manager

Wireless

- Cisco 1142 Access Points
- Cisco 1252 Access Point
- Cisco 4400 Wireless LAN Controller

“Each of the patrol cars is equipped with a camera that records events while they are on patrol,” says Trog. “When they return to the station, officers are able to wirelessly download the video to the storage platform. Before it took as long as 30 minutes to download the 2 to 3 gigabyte files, but now that the network speed has tripled, officers only spend a third of the time downloading video. This ability to download video via wireless technology increased our overall operational efficiency, getting officers back on the street rather than waiting for videos to download.”

Over the past eight years, Ellis County utilized multiple VPN solutions, but none of them was effective, and most were difficult to manage and maintain. The Cisco ASA 5500 Firewall and VPN platform has provided the stability necessary to run multiple remote locations. In addition, the IT department stated that it is the easiest VPN platform to manage and distribute to any place within the network.

“We have gone through a few VPN vendors, all of which required a technical staff person to configure and get new users online,” says Crawford. “Now users can simply go to a website provided by the county, login, and access the VPN following a few directions so they can be online from any location.”

Cisco Unified Communications has improved the stress level in the office, because employees no longer have to race to the phones. In addition, it has improved constituents’ services, because they now reach the person/department they need to speak with faster. “Prior to Cisco Unified Communications, there may have been only one number ringing in an office, which someone would scramble to get and would often miss,” says Crawford. “Today, with the Unified Communications and the IP solution, we now have four or five groups of phones that ring, now the response time has reduced from three to four minutes to less than 60 seconds.”

Technical Implementation

LAN

The entire LAN was replaced. The new LAN limits the county's recurring capital expenses that were required to keep the old LAN running. Also, now management problems and bandwidth issues are gone. With the new centralized network, the IT department can track where problems are happening and increase bandwidth where necessary.

"Before moving into the new facility, we were in the process of consolidating equipment and resources. We needed a place to store data, as well as repair computers. Now we have a major distribution facility where all of the primary Cisco equipment is housed in one location, improving our ability to manage the technology components and deploy new services," says Crawford. "We built the building with specific design parameters to have it serve as a centralized hub for Ellis County's network infrastructure. In addition, we have enhanced the physical security for the routing room, as it was virtually nonexistent prior to deploying the new Cisco technology."

Unified Communications

As part of the project, the county revisited how call flow works. The Unified Communications upgrade made the process faster, installing recorded messages with dial-in directories. The automation of these calls helped gain control over the call queue, which prior to Cisco Unified Communications was unmanageable. In addition, the upgrade will improve service to constituents, while reducing the number of calls that employees must take.

With the new Cisco IP infrastructure, everything, including phones, is integrated with active directory infrastructure. Data is kept up to date in real time. Employees are now able to change call queues and call paths easily, which will improve customer service and efficiency.

Until the upgrade, 30 to 40 percent of Ellis County employees did not have voicemail and faced tremendous roadblock with voicemail capabilities. The ease of checking voicemail on the road or from remote locations with Unity voicemail significantly transformed business processes for county employees. In addition, it improved the efficiency and increased the mobility for employees, especially those who are receiving voicemail capabilities for the first time.

Wireless

Ellis County greatly enhanced and simplified the security of its wireless network by deploying Cisco Mobility Services Engine (MSE) 3310 and Wireless Control System (WCS) 6.0. The county now has single-point access control rather than 40 access points, which in itself increases security. Additionally, the county installed Cisco 1142N access points, Cisco 1252 access point, and Cisco 4400 Wireless LAN Controller for the wireless LAN controller switch to improve the reliability and security of the network to help ensure only employees and visitors have access at all times. In addition, the county installed the Cisco ASA 5500 Firewall and VPN platform to make certain that county employees working remotely have easy access to county databases and the wireless network.

The IT department now spends far less time troubleshooting issues and connecting employees because of the directory service integration provided by the Cisco Wireless LAN switch. Ellis County employees do not have to remember a separate username and password combination for

the VPN. It is integrated in active directory, so they can use the same username and password that they are accustomed to entering when logging into the LAN.

For More Information

To find out more about Cisco Wireless, go to: http://www.cisco.com/go/wireless.

To find out more about Cisco Unified Communications, go to: http://www.cisco.com/go/uc.

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