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The City of El Paso turns to Sigma Solutions for sweeping network infrastructure upgrades, ubiquitous Wi-Fi and improved communications.

The City of El Paso, Texas, has a rapidly growing population of 800,000 and is adjacent to a large U.S. military base. Just over the border, Juarez, Mexico, is home to more than two million people, many of whom come to El Paso to work, attend school, shop and dine. In order to better serve this large and diverse population, the City of El Paso sought to improve the efficiency, availability and security of its IT systems.

The effort began simply enough, with a need to streamline backup operations. The city turned to Sigma Solutions for help.

“The City of El Paso had two separate backup environments based on different versions of Symantec NetBackup,” said Ed Loveless, account executive, Sigma Solutions. “We performed an assessment and recommended that they consolidate their backup infrastructure, upgrade to the current version of NetBackup and introduce a disk-to-disk-to-tape solution. They agreed to all of our recommendations and also signed on to our Symantec First Call Support service.”

About the same time, the City and County of El Paso had launched a shared data center initiative and selected Sigma to handle the network infrastructure upgrade needed for the initial phase. Sigma assessed the city’s network environment and recommended the Cisco Nexus data center switching platform for the core network infrastructure. Sigma then implemented the Cisco solution, providing the city and county with a more robust production data center to use until the second phase could be completed.

For phase two, the city and county jointly purchased an HP Performance Optimized Datacenter (POD), a prebuilt data center that ships fully configured and tested. When the POD came online, it became the permanent city/county production data center, with the phase one facility serving as a disaster recovery site. The data center project was only the beginning. The city decided to standardize on Cisco products across its infrastructure and put out two Requests for Proposal (RFPs) — one for Cisco hardware and software and the other for professional services — to a number of Cisco partners. Sigma was selected for both components of the project.

"We wanted to deal with just one platform for LAN, WAN and voice," said Michael Valencia, manager, network and voice infrastructure manager, City of El Paso. "Our team has a lot of experience with Cisco, we know the platform and strength of its other network and security products.

"We also had a lot of experience working with Sigma. Sigma systems engineers had helped us with a number of projects, including the Cisco Nexus implementation, routing and switching, wireless, voice over IP and security. We knew they had the expertise and project management discipline to deliver everything we required within the RFP."

Improving Communication, Security, Compliance

The Network Infrastructure Update initiative was driven by a wide range of IT challenges. Telephony services were suffering: as many as 100 calls a day were being dropped by the local tax office. The city also needed to comply with HIPAA in order to share data with area hospitals, and had to meet National Security Administration requirements due to its need to connect to the FBI's Criminal Justice Information Services Network. In addition, the recreation center and several other departments accept credit cards for payment, necessitating PCI compliance. A big shift was needed to create a well-designed, compliant and secure infrastructure.

The City of El Paso IT team looked at what other municipalities were doing and drew upon their experience to design a new infrastructure. The team began with a pilot of Cisco IP Telephony on two floors of one building. The original plan had been to expand IP communications to other floors when the pilot ended. Instead, the team looked at the entire IT infrastructure citywide and came up with a plan to rebuild the network. This became the foundational platform for the City of El Paso Network Infrastructure Update, in collaboration with the mayor's and city manager's offices.

The city worked with Sigma and Cisco to design the new infrastructure. The team replaced the legacy phone system, upgrading to a 2GB capacity, with reciprocal redundancy with the County of El Paso for operational and cost efficiencies.

Security and availability were critical elements of the \$10 million infrastructure project. Sigma helped the City of El Paso install Cisco ASA Next-Generation Firewalls to protect its expanded external connection. The new network's strong levels of security help meet compliance standards needed for its connections to hospitals and to the Texas Dept. of Public Safety, as well as for processing credit card payments for city services.

"The ASA Next-Generation Firewalls have been solid," Valencia said. "They provide an active standby solution that immediately recognizes and reacts to when one has stopped. Because they combine multiple functions in one firewall, we were able to replace five firewalls with two, which means less maintenance and support needed from us."

Citywide Wireless

Another city imperative was to improve access to and delivery of important services, supported by updated, streamlined and secure network access. This included broadening public Wi-Fi access across the city — an initiative known as Digital El Paso.

"The city called upon Sigma's wireless experts in Oklahoma to implement a wireless grid network in downtown El Paso, providing free wireless access from anywhere in the downtown business district," Loveless said. "Since that time, Sigma has expanded Digital El Paso to the airport and public libraries. Upcoming projects include expansion to Sun Metro bus stops and buses, and upgrading the downtown wireless grid to expand coverage and increase throughput to support video surveillance for public safety."

To monitor its new state-of-the-art public Wi-Fi, the team uses Cisco Prime Network Manager to assess network traffic, which averages 10,500 users daily. Cisco AnyConnect Secure Mobility VPN enables secure wireless access by employee devices.

Cisco TelePresence is expected to be used to enable citizens and other stakeholders in remote locations to participate in city council meetings. Cisco WebEx Social will be leveraged to facilitate collaboration between city departments and the public they serve. Cisco Identity Services Engine is being explored to secure the network device endpoints.

As the Network Infrastructure Update continues to unfold, the City of El Paso has transformed its ability to serve its citizens and visitors, providing a broader array of services, the ability for citizens to securely pay for public services via credit card, and secure Wi-Fi access from any device anywhere in the city. Additionally, the city has saved 10 percent to 12 percent of \$56 million in related IT projects, while centralizing administration and improving service delivery, network availability and security. It also has realized \$4 million in savings by consolidating IT contracts, and \$1.3 million by consolidating phone services.

"At the end of the day, we got the best of all worlds — a Cisco unified platform, great service and the security to deliver a high level of services," said Valencia.