

Pinellas County Integrates Wired and Wireless Networks

Customer Case Study



EXECUTIVE SUMMARY

Customer Name : Pinellas County

Industry: State and local government

Location: Mid-Gulf coast, Florida

Potential users: 4500 computer users, estimated county population of 925,000

Business Challenges

- Move from limited separate wireless LANs to cohesive countywide wired-wireless network encompassing 53 locations and 111 buildings
- Build strong network security to manage BYOD access exposure challenges
- Significantly scale network reach and capabilities without expanding support staff

Network Solution

- Cisco Unified Access solution, which includes
 - Cisco Aironet 2600 and 3600 Series 802.11n APs connected and powered by PoE+ Cisco Catalyst 2960 Series switches
 - Cisco 5700 Series Wireless LAN Controllers and Cisco Mobility Services Engine
 - Cisco Prime Infrastructure management software and Cisco Identity Services Engine

Business Results

- Unified Access creates a secure, smooth wired-wireless user experience for all county employees, associated workers, and visitors
- Integrated wired and wireless management simplifies user support, network operation, security, and troubleshooting
- Consistent but differentiated user experience improves employee productivity while expanding availability of county services and information to residents

Florida county uses Unified Access to securely expand and improve services and convenience for residents and employees.

Business Challenges

Pinellas County is Florida's most densely populated county. Located on a compact peninsula (608 square miles, 1575 square kilometers) bounded to the east by Tampa Bay and to the west by the Gulf of Mexico, it supports a population of almost 925,000.

Like many county and state governments across the country, Pinellas County is constantly looking for cost-effective ways to increase the scope of services to its residents and to improve productivity and job satisfaction for its county employees.

The dozen or so separate wireless LANS (WLANs) that the Pinellas County Business Technology Services (BTS) department had installed over time in some buildings proved very popular. As more departments requested WiFi service access, Jeff Rohrs, principal enterprise architect for Pinellas County, and his colleague, Robert Sullivan, BTS network infrastructure team lead, knew they needed a comprehensive strategic plan. Rohrs says, "We really wanted to achieve high-quality ubiquitous WiFi saturation throughout the county and deliver a seamless wired-wireless user experience for all county employees, associated workers, and visitors on one infrastructure."

The county's existing vendor's wireless LANs were reaching end of life, which gave Rohrs and Sullivan the impetus to present county commissioners with their ambitious plan. The Pinellas County Mobile Web project would deliver unified wired and wireless services with bring-your-own-device (BYOD) convenience to all 111 buildings in 53 locations throughout the county. "The project would encompass everything from our multistory courthouse to very small offices, span diverse locations ranging from the waste disposal site to the airport, and include every county service you can think of," says Sullivan.

Maintaining strong network security in the face of the significant exposure challenges of BYOD was a major concern. Rohrs notes that they thought long and hard about the best way to control the thousands of personal wireless and mobile devices and make sure users got to the resources they needed while still protecting the core network. They also needed to be able to manage their significantly expanded WiFi network without adding more BTS staff.

“Cisco offered the strongest scalable end-to-end solution. We were happy with our Catalyst switches and Prime Infrastructure management in our network core, and we felt that the Cisco Unified Access wired and wireless capability, coupled with its RF management and identity services would serve us best in the long term.”

Jeff Rohrs

Principal Enterprise Architect
Pinellas County

Network Solution

Rohrs and Sullivan evaluated four vendors and ultimately chose Cisco because, as Rohrs says, “Cisco offered the strongest scalable end-to-end solution. We were happy with our Catalyst switches and Prime Infrastructure management in our network core, and we felt that the Cisco Unified Access wired and wireless capability, coupled with its RF management and identity services would serve us best in the long term.”

The Cisco Unified Access “One Policy, One Management, One Network” design delivers an integrated platform.

- One Policy provides context-based central rules across the entire network with visibility of who and what is on the network – wired, wireless, or VPN – to simplify the implementation and enforcement of security policies.
- One Management provides comprehensive wired and wireless lifecycle, performance assurance, and compliance management to simplify network operation.
- One Network converges wired and wireless networks into one physical infrastructure for greater network-wide intelligence, performance, and integration.

When the project is completed, over 800 Cisco Aironet® 2600 and 3600 Series 802.11n access points (APs) will be installed throughout Pinellas County. Cisco Catalyst® 2960 edge switches with built-in Power over Ethernet Plus (PoE+) supply both connectivity and up to 30W of power to the APs, which greatly expands installation options in older hard-to-wire buildings.

Cisco CleanAir™ technology built into Aironet APs captures device type and signal strength, RF spectrum detail, and interference data in real time. The Cisco Mobility Services Engine (MSE) then assembles the information, calculates the location of the inferring devices, and transforms it into valuable network insights on an enterprise-wide scale that can be viewed from a single Cisco Prime™ Infrastructure management platform. Cisco MSE also provides another layer of security by identifying, locating and tracking rogue devices with the Wireless Intrusion Prevention System (WIPS) license.

The Cisco Identity Services Engine (ISE) automated network access policy enforcement in plain language prevents inappropriate access. Sullivan says, “ISE was a key component to our BYOD solution. It dynamically discovers device type and user identity, and matches and applies access rights based on flexible policies that can be applied throughout the network. That’s a huge feature and unique to the product.”

Cisco 5700 Series Wireless Controllers in the data center also make enterprise WLAN management much easier for BTS. The converged access controllers transfer traffic between wireless clients and the wired network and automatically register and authenticate wireless and mobile clients. The Unified Access data plane ASIC in the 5760 Wireless Controller delivers line-rate performance even with mixed traffic to support emerging technologies such as 802.11ac. The wireless controller also supports advanced hardware-based QoS so the BTS staff can prioritize traffic with flexible, network-wide policies.

Because Pinellas County was an early adopter of ISE v1.2 and Prime Infrastructure management v.2x, the BTS team discussed capabilities with Cisco developers and helped beta-test the products. Rohrs says, “It was great to have the chance to give suggestions and feedback. The Cisco team was very responsive, and it was satisfying to see our input reflected in the released products.” Sullivan adds, “We deal with a lot of vendors, and Cisco is definitely at the top of the support pyramid.”

Business Results

Pinellas County's Mobile Web, powered by its Cisco Unified Access delivers significant one network-one policy-one management benefits.

Consistent but differentiated user experience on one network. Once users are connected and authenticated to the wireless network, they can move securely and smoothly from one location or department to another with no interruption in connectivity.

Visitors to Pinellas County government buildings and the airport can get convenient Internet access through a guest wireless network; no personal information is required. County employees with personal wireless and mobile devices can log into a more secure BYOD network with full Internet access as well as access to internal enterprise resources permitted by BTE-defined policies. The Pinellas Enterprise wireless network allows only employees with county-issued laptops (no mobile devices yet) much greater access to internal network resources over a highly secure, encrypted connection.

Single access, traffic control and security policy management. Cisco Unified Access delivers centralized control, cohesive interoperability, and true network integration to make network operation much easier for the BTS staff even with the major WLAN expansion. "Policy enforcement is handled at the back end, invisible to users, which reduces our help desk load and streamlines troubleshooting for us," says Sullivan. In addition, the 5760 Wireless Controller features a familiar consistent IOS command line interface (CLI), which simplifies installation and configuration. Working with a single vendor also helps the BTS team deploy services and applications faster and speeds troubleshooting and problem resolution.

Rohrs explains that they are still learning the capabilities of the solution, but they appreciate its management visibility and access to historical data. He says, "In the past, we would get calls from users saying they had a problem the day before, but we had no way of looking at the data. Now we can view historical information on a user's wireless experience, including relative signal strength and signal-to-noise ratio data, from anywhere in the county, which is a huge troubleshooting asset for us."

Next-generation services opportunities. The Cisco Mobility Services Engine's advanced location-aware functionality enables the BTS staff to locate wireless threats and leverage location-based heat maps to identify devices on the network. It also lends itself to adding advanced location services such as Cisco Connected Mobile Experiences (CME) in the future. Having Wi-Fi location-based services in the wireless network allows staff to gather information collected by the APs to study user movement and behavior. This capability can help them create valuable applications such as asset tracking and management, staff planning and event scheduling, and navigation and hospitality mobile phone apps for county agency visitors and airport travelers.

For More Information

- For more information on Cisco Unified Access solutions, visit http://www.cisco.com/web/solutions/wireless/unified_access/index.html.
- For more information on how Cisco helps public government agencies improve services and maximize resources, visit <http://www.cisco.com/web/strategy/government/index.html>.

Product List

- Cisco Catalyst 2960 edge switches
- Cisco 5700 Series Wireless LAN controller
- Cisco Unified Access solution
- Cisco Prime Infrastructure wireless management software
- Cisco Mobility Services Engine
- Cisco Identity Services Engine
- Cisco Wireless Intrusion Prevention System
- Cisco Aironet 2600 Series and 3600 Series 802.11n APs with Cisco CleanAir technology



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