Wireless Network Connects 50-Acre Campus

The Passaic County Technical Institute provides a superior learning experience with a robust Cisco® network.

> "Using the same tools, policies, and maps to manage wired and wireless networks was a huge step towards simplicity and efficiency"

– Dr. Roberto D. Rubino, Chief Technology Officer, Passaic County Technical Institute

From computer-aided manufacturing (CAM) software to diagnostic software for automotive mechanics to 3D computer-aided design (CAD) software for engineering, technology is an integral part of any modern career. That's why Passaic County Technical institute strives to provide students with top IT experiences.

Challenges

- Support one-to-one laptop initiative
- Upgrade wireless network to support thousands of devices simultaneously
- Empower IT staff to work efficiently

Recognized by 28 national awards, Passaic County Technical Institute (PCTI) is one of the top high schools in the United States and the largest career and technical high school in New Jersey. PCTI has long considered technology to be an important part of any program. As a result, the school decided to implement a one-to-one program where, ultimately, all 3300 students and 350 teachers will be provided a laptop.

"By providing universal laptop access, we can provide more hands-on assignments and encourage students to explore using the Internet and subject-specific software," says Dr. Roberto D. Rubino, Chief Technology Officer, PCTI.

Although PCTI has an existing wireless network, the network was built to extend its voice-over-IP (VoIP) range across the 50-acre campus but lacked the capacity to support thousands of devices simultaneously. The school decided to build a new wireless network capable of handling multiple devices for each student using Cisco wireless solutions and the IEEE 802.11ac wireless standard.

Case Study | Passaic County Technical Institute

Size: 3300 Students | Location: Wayne, New Jersey | Industry: Education

Converged access brings together Cisco wired and wireless networks to make any environment easier to manage.

Solutions

- Built robust wireless network based on Cisco access points
- Used Cisco converged access solutions to simplify management across wired and wireless networks

Robust Wireless on the 802.11ac Standard

PCTI installed a Cisco access point with the fast 802.11ac standard in every classroom. “Some classes rely very heavily on computer-based lessons, so if networks go down, or if students can’t get a stable connection, that directly impacts their learning,” says Dr. Rubino. “We love working with Cisco, because they have a solid roadmap for the future and continue pushing the limits with the latest technologies. We’re building this network to last, so deploying our network on the 802.11ac standard was an obvious choice.”

Bringing Converged Access across Networks

With Cisco converged access technology, PCTI brings together management of all networks, wired and wireless, old and new, in one system. IT staff can apply one set of maps, policies, and operations across all networks, making it easier to scale the network and maximize performance.

Simple Management, Consistent Configuration

Cisco Prime® technology provides visibility into the entire network, helping IT staff identify gaps in service and target any areas to adjust capacity. Using the configuration management features in the Cisco Prime solution, IT staff can quickly analyze configurations to help troubleshoot networking issues. “Cisco Prime helps us identify problems much faster, so that we can deliver even better service,” says Dr. Rubino.

Working Faster and Smarter

PCTI’s IT staff members are highly skilled in Cisco systems. Many were trained on Cisco solutions at PCTI. Using familiar Cisco IOS® Software, the IT staff at PCTI can write macros that automatically change the configurations of all access points on both the old and new networks in minutes.

Results

- Established robust wireless network capable of supporting thousands of devices
- Doubled productivity with streamlined network management
- Dramatically reduced time spent identifying problems

Expanding Technology

PCTI plans to eventually replace the old wireless network with the 802.11ac standard. The school also continues to scale its bring-your-own-device (BYOD) capabilities and deploy the Cisco Identity Services Engine (ISE) to provide better security and encourage students to connect all their devices.

"We use the latest technologies to help prepare our students for their future education and careers," says Dr. Rubino. "Cisco delivers high-performance, high-capacity solutions that will continue to grow with us for years to come."

Products & Services

Wireless
- Cisco Aironet® 3600 Series Access Points
- Cisco Aironet 3700 Series Access Points
- Cisco 5760 Wireless LAN Controller

Data Center
- Cisco Unified Computing System™ (Cisco UCS®) blade servers

Routing and Switching
- Cisco Nexus® 7000 Series Switch
- Cisco Nexus 2000 Series Fabric Extenders
- Cisco Nexus 1000V Switch
- Cisco Catalyst 3850 Series Switches
- Cisco Catalyst 3750 Series Switches
- Cisco Catalyst 2960 (in classrooms)
- Cisco 2921 Integrated Services Router
- Cisco ASR 1000 Series

Network Management
- Cisco Prime Infrastructure
- Cisco UCS Manager

Security
- Cisco Identity Services Engine (ISE)
- Cisco Web Security Appliance
- Cisco IPS 4240 Sensor
- Cisco ASA 5520 Adaptive Security Appliance
- Cisco ASA 5545-X Adaptive Security Appliance with Cisco CX
- Cisco Secure Access Control System 5.5

Voice and IP Communications
- Cisco Unified Communications Manager 8.6
- Cisco ATA 186 Analog Telephone Adaptor
- Cisco IP Phone 7960

Video
- Cisco Digital Media Player

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