

School District Enables Online Learning and Professional Development

Chapel Hill-Carrboro City Schools installs wireless and IP telephony solutions to increase collaboration and interactive learning.

EXECUTIVE SUMMARY
<p>CHAPEL HILL-CARRBORO CITY SCHOOLS</p> <ul style="list-style-type: none"> • Education, K-12 • Chapel Hill, North Carolina • 11,700 students, 1,200 teachers, and 800 staff
<p>EDUCATION CHALLENGE</p> <ul style="list-style-type: none"> • Provide reliable, scalable telephony solutions and wireless networks for 19 schools • Increase bandwidth to accommodate large number of end-users online at one time
<p>SOLUTION</p> <ul style="list-style-type: none"> • Update network foundation to support new services and increase accessibility to wireless networks • Provide new digital phones to support voice over IP (VoIP) applications and replace end-of-life digital phone systems
<p>RESULTS</p> <ul style="list-style-type: none"> • Reduced operating costs by \$60,000 to \$80,000 annually • Improved efficiency for teachers and students by providing access to wireless networks • Increased access to online courses and digital content using mobile devices

Education Challenge

Chapel Hill-Carrboro City Schools (CHCCS) is located in Chapel Hill, North Carolina and consists of 19 schools and 11,700 students. Some 2000 staff members, ranging from teachers to administrators, are spread throughout the district’s ten elementary schools, four middle schools, four high schools, and one hospital school.

CHCCS had outdated voice systems and a nonpervasive wireless infrastructure in many of its sites, severely limiting access to computers and reliable phones in the classroom. This limitation stifled the 21st century learning capabilities and tools offered to students, faculty, and staff.

A number of schools felt a desperate need for wireless computer access in the classroom, and developed their own solutions, including independent wireless access points on mobile laptop carts.

“Unfortunately, these wireless access points were not scalable and did not provide the necessary security levels to protect systems against hackers, malware, and viruses,” says Ray Reitz, chief technology officer for CHCCS. “We needed to move toward more pervasive wireless access to accommodate the growth in mobile devices being used in our schools. It was becoming more and more apparent that there was a need and drive within the district for an enterprise wireless solution.”

While Doug Noell, director of IT Operations for CHCCS, and his team recognized the need for district-wide wireless and voice over IP (VoIP), they were working against limited, allocated funds for technology upgrades. “We educated our board so they understood the investment, why we needed to deploy all components at once, and the rationale for deploying the new technology through a cost-effective lease,” says Noell. “We explained that our teachers needed network tools that leverage interactive applications, such as video and on-line simulations, to impact CHCCS students on a deeper level and improve digital literacy. If our community feels the education they are receiving is limited due to the reliability, speed, and scalability of the network, something had to be done.”

In 2007, school officials began moving forward with updating their voice networks and laying the ground work for districtwide wireless and VoIP. “Our goal was to ensure a reliable and scalable

network that meets the needs of a growing district and increasingly digitally-reliant students,” says Noell.

Solution

Noell and his team looked to Cisco to deploy an upgraded voice network, districtwide wireless, and VoIP solution over a Cisco® Unified Communications solution. With a districtwide Cisco infrastructure backbone already in place, Cisco was a natural choice to maintain standardization and cohesive integration for expanded network services.

The District installed Power-over-Ethernet (PoE) blades in the core switches and selected PoE-capable switches for the intermediate closets to support voice and wireless networks without purchasing power bricks and using the few vacant power outlets in a classroom. This foundation was built about five years ago when older Cisco switches were replaced with PoE-capable switches in anticipation of this much needed expansion.

Wireless

District officials installed Cisco Aironet® 1100 Series Access Points to upgrade the interior wireless networks and Cisco Aironet 1200 Series Access Points to cover building exteriors. “CHCCS has a number of classrooms located in trailers and in courtyards, so it was critical for us to provide those classes with wireless access,” says Noell.

Due to the pervasive, scalable and reliable wireless networks deployed, Noell’s team removed independent wireless access points serving laptop carts. “Teachers and students are now able to use their personal laptops on our system,” says Noell. “This flexibility allows teachers to use interactive web applications and videos to enhance lesson plans, thus increasing student participation and interest. One elementary school teacher commented that the wireless environment is so much more reliable and allows more users to safely and securely connect.”

“Teachers now operate computers without wiring cables, which increases their mobility throughout the district,” says Noell. “We are in the process of installing additional access points, so teachers and students can use wireless devices, such as an iTouch or iPad, in the classrooms, which enables collaboration and mobility.”

Unified Communications

CHCCS installed Cisco Unified Communications, including CallManager and Unity® Voicemail to provide teachers with additional applications to improve the ease of using their phones and communicating within the school and externally.

“Our new Cisco technology has enabled a learner-centric environment, where students are empowered to collaborate and access information on the fly.”

—Ray Reitz, Chief Technology Officer, Chapel Hill-Carrboro City Schools

In 2010, the school district replaced more than 340 phones that were 10 – 14 years old and added an additional 800 Model 7942 and 7962 phones in early 2011. “District phones now act like a computer as teachers can program and customize them to meet specific needs,” says Reitz. “For example, teachers can display screen messages for students and/or other faculty members. We are interested in looking at additional applications that could be deployed over the IP phones.”

“We increased our total Primary Rate Interface (PRI) circuits to three, and will have a total of 2000 IP phones throughout, the district once the final migration is fully complete,” says Noell.

“By February 2011, all 19 of our schools had enterprise-wide wireless and IP telephony, making this a milestone on our technology roadmap,” says Reitz.

Results

“Our new Cisco technology has enabled a learner-centric environment, where students are empowered to collaborate and access information on the fly,” says Reitz. “We created an environment that enables students to stay connected even at all times. Our district recognizes the importance of online, interactive learning, which now we are able to provide.”

Students, teachers, and administrators have responded positively to the comprehensive wireless service. To Noell and his staff, the incorporation of a wireless system is a basic requirement of 21st century learning. “The new wireless infrastructure aligns with our 21st Century Vision,” says Noell. “Today, Chapel Hill-Carrboro City Schools provides a collaborative environment where you can access learning information online at all times; learning continues well past the 3:00 pm bell. With the help of Cisco, we have significantly expanded our mobile teaching and learning environment where students access and use their wireless devices, such as laptops, tablets, or phones throughout their campus.”

PRODUCT LIST
<p>Voice and IP Communications</p> <ul style="list-style-type: none"> • Cisco CallManager • Cisco Unity Voicemail • Cisco IP Phones <p>Wireless</p> <ul style="list-style-type: none"> • Cisco Aironet 110 Series Access Points • Cisco Aironet 1200 Series Access Points

The school district is also saving money using IP telephony by downsizing analog lines, eliminating expensive and single-use digital voice circuits, and shifting outsourced voice support to internal resources. Cisco Unified Communications saves the school district between \$60,000 and \$80,000 in operational costs annually.

“We installed a pervasive security system into our wireless network that protects our internal network systems from internal and external hackers,” says Noell. “We now have a secure, guest wireless network that gives limited access to our systems, but also features a portal back into our network for students and staff. The scalability of the Cisco network allowed us to accommodate our in-house devices and outside devices.”

“Teachers are using the wireless infrastructure to continue their professional development, and we now have a teacher laptop program that is designed to empower teachers to take control of their own learning,” says Reitz.

For More Information

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

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



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