



School District Improves Communications, Education, and Safety

EXECUTIVE SUMMARY

FT. BRAGG UNIFIED SCHOOL DISTRICT

- Mendocino County, California
- 2100 students
- Seven schools

BUSINESS CHALLENGE

- Modernize network infrastructure
- Increase educational opportunities in district with declining Average Daily Attendance (ADA)
- Improve staff and parent-teacher communications

NETWORK SOLUTION

- Deployed a unified communications network based on the Cisco Services-Oriented Network Architecture (SONA)
- Equipped temporary portable classrooms with a wireless voice and data network

BUSINESS RESULTS

- Improved communication by installing IP phones in every classroom
- Saved \$500,000 in infrastructure costs
- Enhanced curriculum with video-based instruction
- Increased appeal of district to prospective students and teachers

Ft. Bragg Unified School District deployed a Cisco Unified Communications system that brings voice, video, and data to every classroom.

Located along a remote stretch of Northern California’s scenic Mendocino Coast, the Fort Bragg Unified School District (FBUSD) faces daunting economic challenges, including declining average daily attendance (ADA) and high unemployment in the community, both of which affect funding. “Each year the district struggles with how to reduce our budget without eroding programs and services,” says Steve Lund, superintendent. “Our challenge is managing the economic reality while trying to build a technology infrastructure that will give our students the educational opportunities enjoyed by their peers in urban areas.”

Until 2004, the district’s two part-time IT professionals managed separate, aging networks for data, voice, and overhead systems such as paging and bells. Classrooms did not have phones. Therefore, parents could not leave confidential messages for teachers, and office staff had to walk to the teacher’s classroom if the superintendent wanted to talk to a teacher or a parent came to pick up a child. “The lack of phones impeded productivity for all of us,” says Lund.

In 2004, FBUSD developed a facilities master plan (FMP) to modernize three of the district’s school sites. The bond issue included \$1.7 million for upgrading the existing voice and data networks as well as the overhead network used for bells and paging. “I

immediately saw that we could spend less by deploying a single, unified communications system for voice, data, video, and our overhead systems,” says Kevin Pimlott, network manager. “When I explained the cost savings and educational and safety advantages of unified communications to our superintendent, he said, ‘If you can make it work, do it.’”

The district wanted to be sure that its network could provide new educational and safety services in the next five years without additional infrastructure investment, and that the two part-time IT staffers could support the network without additional help. Planned services included individualized, Internet-based instruction; live, video-based field trips; video-based Advanced Placement (AP) courses shared with students in other districts; enriched professional development opportunities for teachers; video-based surveillance for enhanced school safety; and a Web portal for parents to view students’ grades, assignments, and attendance.

NETWORK SOLUTION

FBUSD is meeting its goals by taking the first step in the Cisco Connected Learning vision: connecting the school’s communications systems on a reliable network foundation. FBUSD deployed a Cisco infrastructure based on the Cisco Service-Oriented Network Architecture (SONA)—a framework that enables school districts to deliver interactive services such as unified communications and collaboration, and to maximize the value of their network investment. “Only the Cisco network solution completely integrated voice, video, and data,” says Pimlott. “Some of the other voice systems that we evaluated would require us to continue leasing Centrex lines as a backup.

With the Cisco solution we upgraded the networks for all seven schools for \$1.2 million, which was \$500,000 less than we had originally budgeted for just three schools.”

Today every classroom in the district has broadband Internet access and a Cisco Unified IP phone served by Cisco Unified CallManager. Administrators and teachers have their own voicemail boxes based on Cisco Unity Unified Messaging. “I can leave a voicemail message for a teacher without interrupting instruction,” says Cate Hawthorne, school psychologist and special education teacher at Dana Gray Elementary School. “He or she sees the indicator light and can call me back when it is convenient.” The office can reach teachers in an emergency either by calling the classroom or sending an audio or text page to the phone’s built-in speaker or display, using the Berbee Informacast application for Cisco Unified IP phones. Berbee Informacast also provides bell-scheduling and paging over the Cisco SONA framework, eliminating the expense of a separate network for this purpose.

Five high school students from the district’s Cisco Networking Academy®, which Pimlott runs, helped install and troubleshoot the Cisco routers and switches and Cisco Unified IP phones. “With the help of these students, who have earned their CCNA [Cisco Certified Network Associate] certifications, we installed 550 devices in just two weeks,” says Pimlott.

An unexpected contingency arose during the last week of 2003–2004 school year while the district was deploying the Cisco network. The middle school was condemned, and the district had just eight weeks to build and wire 20 portable buildings. Bids to build the network averaged around \$100,000, of which \$20,000 would pay for cabling that would be ripped up after two years when the portables were no longer needed. The basketball court would need to be torn up to lay cable. Pimlott saved money by instead deploying a wireless unified communications system—the world’s first using Cisco Unified CallManager Express for an all-wireless voice system. Classroom computers connect wirelessly to the Internet, and teachers use wireless Cisco Unified IP phones in their classrooms and while supervising in outdoor areas.

“Our Cisco SONA framework is enabling us to add new voice, video, and data services as needed—and without additional infrastructure investment.”

—Steve Lund, Superintendent, Ft. Bragg Unified School District, Fort Bragg, California

BUSINESS RESULTS

Classroom phones improve communications with staff and parents. Parents can now dial the teacher’s extension to leave private messages, and teachers return calls more promptly. “Cisco Unified IP phones in the classroom expedite our handling of crises as well as day-to-day activities,” says Hawthorne. “If I need to schedule a meeting about a student with several teachers and an administrator, I can use Cisco Unity Unified Messaging to send a single voicemail to all of their extensions instead of trying to reach them one by one.” The superintendent and school principals report that their productivity has increased, as well, because they can dial teachers directly instead of waiting for someone to walk to the teacher’s classroom and for the teacher to find a phone.

Student and staff safety has improved. Teachers can use classroom phones to call an emergency number or the school nurse. “Teachers are more comfortable working after hours when they have a phone in the classroom,” adds Hawthorne.

Interactive and video-based instructions enhance the curriculum. High school math students receive video-based tutoring from the University of California at San Francisco. The history and social studies departments use video streaming daily in the classroom. And students can take other courses approved by the University of California using the CyberHigh program.

The state-of-the-art network is expected to help FBUSD attract and retain qualified teachers—traditionally a challenge in rural districts. The Cisco SONA framework enables teachers to receive world-class, video-based training and to teach video-based AP classes even if the school’s own enrollment would not justify the class.

The IT staff spends less time managing 1000 network devices than they previously spent managing half that number. “Now I can spend my time taking care of district needs for educational excellence instead of maintaining aging equipment,” says Pimlott.

Video-based staff meetings save time and reduce costs. Administrators use Cisco Unified IP phones and Cisco Unified Video Advantage cameras with their PCs to join videoconferences from their own schools, using the same network used for voice and data. “Joining a videoconference instead of driving to the county office saves me a three-hour round trip, and saves the district from reimbursing for gas,” says Pimlott.

Compared to installing separate networks for voice, data, and alarms and bells in three campuses, installing a single IP network on all seven campuses saved the district \$500,000. “The half a million dollars that we saved by deploying a Cisco SONA framework is enabling us to modernize our buildings earlier than we would have otherwise, for lower construction costs,” says Lund. In addition, by deploying a wireless network for the temporary portable classrooms at the middle school, the district saved \$30,000, a 30 percent savings compared to building a wired network. “Furthermore, we will be able to reuse the Cisco router when we move back into the permanent building,” says Pimlott.

PRODUCT LIST

Cisco Routing and Switching

- Cisco 7600 Series Routers
- Cisco 3700 Series Multiservice Access Routers
- Cisco Catalyst 4500 Series Switches
- Cisco Catalyst 3550 Series Switches
- Cisco Catalyst 3560 Series Switches

Security

- Cisco Security Agent
- Cisco PIX 500 Series Security Appliances
- Cisco Intrusion Detection System (IDS) 4200 Series Sensors

Unified Communications

- Cisco Unity Unified Messaging
- Cisco Unified CallManager
- Cisco Unified CallManager Express
- Cisco Unified IP Phones 7920, 7940, 7960 and 7970

Video

- Cisco Unified Video Advantage

Wireless

- Cisco Aironet 1200 Series Access Points

NEXT STEPS

With the foundation in place, FBUSD is ready to take the next step in the Cisco Connected Learning vision: increasing administrative and teacher productivity. Teachers will use AAC PhoneTop with their Cisco Unified IP phones to alert the office or library that students are on their way, eliminating the need for hall passes. Teachers can use the same application to enter attendance on their phones, automatically updating the districtwide attendance system and avoiding the need for busy office staff to reenter handwritten attendance logs.

The district is also testing video surveillance to increase the safety and security of its campuses. The Cisco SONA framework already supports video, so no additional network investment is needed. “Deploying four cameras for our test took less than an hour,” says Pimlott. “Ease of deployment is a crucial consideration for school districts with small IT departments.”

When all Mendocino County offices adopt voice over IP, a move under consideration, the county stands to save an additional \$1800 per month by eliminating 120 Centrex lines.

“Our Cisco SONA framework is enabling us to add new voice, video, and data services as needed—and without additional infrastructure investment,” says Lund. “We can incrementally improve students’ academic development and teachers’ professional

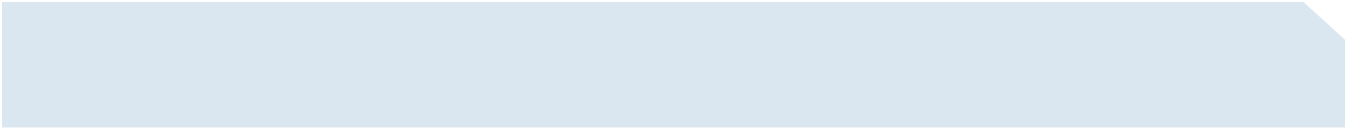
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