

## Public School System Improves Education Services Delivery

Charles County Public Schools support innovative services that challenge the way educators and administrators deliver education.

### EXECUTIVE SUMMARY

#### CHARLES COUNTY PUBLIC SCHOOLS

- Education
- La Plata, Maryland, United States
- 35 schools; 27,000 students

#### BUSINESS CHALLENGE

- Support rapid growth while delivering world-class kindergarten to grade 12 education

#### NETWORK SOLUTION

- Cisco Service Oriented Network Architecture (SONA) framework for delivering voice, wireless, security and video services district-wide

#### BUSINESS RESULTS

- Reduced costs by US\$170,000 by deploying voice over the network
- Enabled students to achieve academic excellence
- Improved teacher and administrative productivity

### Business Challenge

Like many school districts in the United States, Charles County Public Schools (CCPS) must balance achieving ambitious academic goals with meeting equally important business management requirements. Whether developing new courseware, implementing new security measures, improving test scores, building multiple new schools to house a rapidly growing student population, recruiting and retaining teachers, or efficiently managing facilities and infrastructure, CCPS has found a way to achieve its goals and still be able to invest savings back into the classroom.

In 1996, Jim Richmond became the school system's superintendent and embarked on an aggressive campaign to provide Charles County students with a

world-class education that challenges each to achieve his or her potential. Richmond teamed with the Charles County Commissioners' Office and technology industry leaders such as Cisco to implement his vision. With Cisco solutions, CCPS has revolutionized how technology is used to provide services that improve every facet of running a school district: from building maintenance to motivating 5000 students to voluntarily attend summer school.

### Network Solution

CCPS became a Cisco® Connected Learning school district, taking advantage of networking technology to deliver dramatically enhanced educational, managerial, and administrative services districtwide. The district deployed a network infrastructure based on the Cisco Service Oriented Network Architecture (SONA) framework to deliver a network platform that enables a wide range of services.

The network connects all CCPS locations with high-bandwidth links, up to 2 Gbps, which enable reliable, high-performing applications, such as voice and video, and on-demand services. The district also deployed its own storage area network, capable of hosting more than 12 terabytes (2000 gigabytes) of data in-house.

The SONA framework provides a unified platform that enables the district to quickly deliver a rich portfolio of services to teachers, principals, administrators, facilities workers, and security staff:

- Cisco Unified Communications solutions deliver convenient cost-effective voice communications and voicemail across CCPS
- Video and collaboration services deliver rich multimedia teaching materials to classrooms and enable videoconferences
- Wireless communication services enable administrators to connect to information anywhere in the district. In addition, security staff can monitor and control IP security cameras from mobile tablets.
- Storage services enable high performance for rich multimedia courseware, delivered on demand.
- Security services protect the district's network infrastructure from intrusion, provide safe Internet access for students, and enable secure remote connectivity.

**“We are grateful for the wonderful partnership that we have with Cisco. It is exciting to see how technology can change the way that we educate, and we are looking forward to planning the next high school in 2013.”**

**—Jim Richmond, Superintendent of Schools, Charles County**

## **Business Results**

### *Reducing Costs*

By eliminating the majority of the district's analog phone lines and deploying voice services over the network, CCPS saved approximately \$170,000 in the first year. The network enables CCPS to deliver many times the number of services that it could previously, and still operate within budget. “We have had five or six budget balances in ten years, totaling several million dollars that we have been able to reinvest right back into the school system,” says Richmond. “When I became superintendent 14 years ago, I was facing a \$1.5 million deficit. In our 14 years, we have never had a deficit.”

### *Achieving Academic Excellence*

CCPS' emphasis on a technology-based curriculum has enabled it to move textbooks online and develop complementary materials that enable teachers to better align coursework with federal No Child Left Behind and Maryland state mandates. In 1996, CCPS ranked 22<sup>nd</sup> out of 24 jurisdictions academically and today it ranks 11<sup>th</sup> overall. Five CCPS high schools rank in the top 1200 U.S. high schools, and the district offers most available advanced placement classes. Extensive summer programs also attract students who come to school voluntarily.

All six CCPS high schools share curriculum that teachers develop over the summer. Everything is available electronically; every teacher has access to a laptop and can download lessons and supporting material, such as film, speeches, and video clips, directly from CCPS servers. The curriculum is made available to teachers both internally and externally through a secure website. The laptop screen is projected for the class to view. CCPS' entire curriculum, including core subjects that support the state's standardized testing program for high school and middle school students, is available online.

### *Improving Teacher Productivity and Proficiency*

As CCPS teachers develop their curriculum coursework, they gain proficiency with the technology and are able to share exciting new methods and ideas. “Teachers are paid for developing the class work and as a result, they take ownership,” says Richmond. “The curriculum also functions as a roadmap for new teachers and for substitutes, providing consistency throughout the system.”

With Cisco Unified Communications solutions, communication has improved between teachers, administrators, and students’ parents. Unified IP Phones in every classroom make it easy for teachers to receive messages and return calls.

### *Improving Administrative Productivity and Safety*

Before the Cisco network, staff spent hundreds of hours creating reports and preparing paperwork. Now any authorized CCPS user can quickly access reports, state assessment data, and action plans. Online access to information eliminates the need for hundreds of copies for meetings and has created a near-paperless environment.

Every Cisco IP Phone allows emergency calling. If a call is dialed, the district emergency center and county sheriff’s office know where the call originates and can send assistance directly to the correct location. Extensive Cisco wireless services also allow administrators and security staff to centrally control and monitor any IP security cameras deployed across the district.

PRODUCT LIST	
<b>Routing and Switching</b>	<ul style="list-style-type: none"> <li>• Cisco 3700 Series Multiservice Access Router</li> <li>• Cisco Catalyst® 6500, 3550, and 2950 Series Switches</li> </ul>
<b>Security</b>	<ul style="list-style-type: none"> <li>• Cisco PIX 500 Series Security Appliances</li> <li>• Cisco Secure Guest Control Server</li> <li>• Intrusion Detection</li> <li>• Cisco VPN 3000 Series Concentrators</li> </ul>
<b>Unified Communications</b>	<ul style="list-style-type: none"> <li>• Cisco Unified CallManager</li> <li>• Cisco Unity®</li> <li>• Cisco Unified IP Phones</li> </ul>
<b>Wireless</b>	<ul style="list-style-type: none"> <li>• Cisco Aironet® 1200 Series Wireless Access Points</li> <li>• CiscoWorks Wireless LAN Solution Engine</li> </ul>
<b>Services</b>	<ul style="list-style-type: none"> <li>• Cisco SMARTnet®</li> <li>• Cisco SMARTnet® Onsite</li> </ul>

CCPS is now completely wireless and allows principals to carry a Cisco IP wireless phone and be accessible anywhere in the district. The district’s IT team hopes to completely eliminate walkie-talkies and pagers currently used by building service managers, bus personnel, and vice principals. Doing so will reduce the costs of maintaining and supporting multiple devices and services while enabling staff to have one contact number, one device, and continuous connection to calls.

### *Facilitating Building Management*

When the wireless deployment is complete, teachers will be able to use their classroom IP phones to report maintenance issues, such as a broken lightbulb or equipment failures. An email will be sent directly to the building services manager, who can dispatch the appropriate person and supplies to the correct location. Using a wireless personal digital assistant device, the

maintenance staff can collect the data that they need, file a report on a repair, and print a report for a teacher. Heating, air conditioning, and other building systems can also be monitored online, reducing the number of hours for which the district must provide staff while improving service.

### **Next Steps**

“We are grateful for the wonderful partnership that we have with Cisco,” says Richmond. “It is exciting to see how technology can change the way that we educate, and we are looking forward to planning the next high school in 2013.”

CCPS continues to lead the way with plans to expand its advanced placement course offerings and deliver new IP communication capabilities, such as making attendance data available to teachers in the classroom over Cisco IP Phones. Wireless capabilities will be extended to older facilities,

enabling mobile computer labs and carts for creating a classroom anywhere. Wireless is a cost-effective way to upgrade capabilities without having to run cabling or trench around existing facilities. New learning applications using Moodle and other web 2.0 applications, are also planned for students at all levels.

### For More Information

To find out more about Cisco Education solutions, go to: [www.cisco.com/go/education](http://www.cisco.com/go/education)

To find out more about Cisco Service Oriented Architecture, go to: [www.cisco.com/go/sona](http://www.cisco.com/go/sona)

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

To find out more about Charles County Public Schools, go to: [www.ccboe.com](http://www.ccboe.com)

This customer story is based on information provided by Charles County Public Schools and describes how that particular organization benefits from the deployment of Cisco products. Many factors may have contributed to the results and benefits described; Cisco does not guarantee comparable results elsewhere.



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