

# Expanding Access to Technology in K–12

Bibb County School District builds a new, centralized data center with Intel® Xeon® processors and deploys thousands of new client systems based on Intel® Core™ processors



“By selecting new PCs with Intel® Core™ i5 processors, we can give students and teachers the performance and reliability to support a full range of the latest interactive, multimedia applications.”

— Mike Hall,  
Executive Director of  
Technology Services,  
Bibb County School District

Georgia's Bibb County School District wanted to transform the educational experience across its 42 schools and expand access to technology for its 25,000 students. Solution provider Presidio helped the district modernize its network, implement a digital resource library solution, and build a centralized data center based on Cisco UCS\* blade servers with the Intel® Xeon® processor E5 v2 family and NetApp FAS3200 Series\* storage with Intel Xeon processors. The district also deployed thousands of new Dell\* desktop, laptop, and Ultrabook™ systems equipped with Intel® Core™ i5 processors. The new resources should help improve learning outcomes by empowering teachers to adopt innovative approaches while increasing student engagement.

## Challenges

- **Support innovation to improve student outcomes.** Provide students, teachers, and staff with computing resources to increase student engagement, enhance productivity, and facilitate innovative teaching methods that improve student outcomes.
- **Streamline management.** Consolidate resources and boost the efficiency of IT management so a staff of seven can effectively manage resources for 42 schools in 49 locations.

## Solutions

- **Centralized infrastructure based on Intel Xeon processors.** With help from solution provider Presidio, the school district consolidated its distributed environment into a centralized data center using Cisco UCS B200 M3\* blade servers with the Intel Xeon processor E5-2640 v2 plus NetApp FAS3200 Series storage with Intel Xeon processors.
- **Network overhaul.** The district replaced an aging network to deliver 10 Gigabit Ethernet connectivity to each school.
- **New client systems equipped with Intel Core i5 processors.** The district deployed thousands of new Dell desktop, laptop, and Ultrabook systems, all equipped with a minimum of Intel Core i5 processors.

## Technology Results

- **Robust, reliable performance.** PCs with Intel Core i5 processors provide the performance and reliability to support a full range of interactive, multimedia teaching and learning applications.
- **Greener infrastructure.** Selecting a dense solution with Intel Xeon processors and employing virtualization allowed the district to create a compact, energy-efficient environment.
- **Increased efficiency.** By consolidating data center resources from 49 locations to only one, the small IT staff can better manage the technology and address new requests faster.

# The Intel® Xeon® processor E5 v2 family provides the performance and density for a consolidated, virtualized environment



“We moved applications running in 49 distinct locations to a single, centralized environment with just 17 blade servers based on Intel® Xeon® processors. We are saving space and controlling power consumption while also simplifying management.”

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## Business Value

- **Wider access to technology.** A more robust network and infrastructure, plus a new media distribution system and new client systems, have helped expand access to technology to many more students and faculty.
- **More engaging learning experience.** Teachers use classroom technology to foster collaboration among students, employ new teaching strategies, and keep students engaged in a variety of subjects. Students develop 21st-century skills to help them succeed in work and life beyond school.
- **Anytime, anywhere learning.** Many students can now access school resources at home to extend the school day.

## Planning a Technology-Rich Environment

Recognizing the importance of technology in teaching and learning, administrators at the Bibb County School District were determined to provide new technology resources to a larger number of students. “Many of our students have had limited access to technology at home and in school,” says Monica Radcliff, director of instructional technology for the school district.

“We needed to improve student access to technology, support teaching innovation, and increase the potential for academic achievement.”

A tax initiative provided the necessary funding for new investments. “Our goal was to create a technology-rich environment that helps enhance the educational experience,” says Mike Hall, executive director of technology services for the school district. “To accomplish that goal, we needed to make some very significant changes, including overhauling the network infrastructure and implementing a content distribution solution.”

The district also decided to refresh the fleet of client systems available to students, teachers, and staff. “We had nearly 15,000 systems, but they were anywhere from 5 to 12 years old,” says Hall. “They needed frequent repair and couldn’t handle the multimedia applications we wanted to provide.”

In addition, the district wanted to consolidate its data center infrastructure while supporting everything from financial applications to a new content distribution system. “It was very difficult to manage servers spread across 49 locations with a staff of just seven

technicians,” says Hall. “We wanted to centralize the data center and create a virtualized environment that could control the footprint and reduce management complexity.”

### **Building a Robust, Centralized Infrastructure**

After collaborating with Intel and outside consultants to define technical requirements, the district’s team worked with Presidio to design and implement the new data center infrastructure. With Presidio, the district consolidated application servers from 49 individual locations into a centralized infrastructure virtualized with VMware\* software. The district also has a redundant infrastructure in a second location, with a high-speed 40 Gigabit connection to the primary site, to help ensure continuity of service in the event of problems.

At each site, the district uses 17 Cisco UCS B200 M3 blade servers equipped with the Intel Xeon processor E5-2640 v2. “The Intel Xeon processors provide the right combination of processing performance, memory throughput, core density, and energy efficiency for creating the optimal virtualized environment,” says Hall.

The servers are connected with NetApp FAS3200 Series storage, which uses Intel Xeon processors to help deliver outstanding performance. The FAS family can streamline IT operations while helping to maintain uptime, improve scalability, adapt to changing requirements, and control costs.

In addition to standard business applications, the new infrastructure now runs SAFARI Montage\*—a digital media management and distribution system. Students, faculty, and staff access resources on that system through a new, high-performance network. “In the past, the district had a 200 Mbps network that was shared among the schools. The network was too antiquated to support existing applications, let alone video conferencing or multimedia,” says Hall.

“We implemented a new network that delivers 10 Gigabit Ethernet connectivity to each school. We’ve opened the door to many new possibilities.”

### **Deploying Thousands of New Devices**

To refresh aging PCs, the school district chose a variety of new Dell OptiPlex\* desktops, Dell Latitude\* laptops, and Dell Latitude Ultrabook systems. The district gives each school the flexibility to select the models that best suit the needs of students, teachers, and staff. “While some elementary schools might want to refresh their computer labs with new desktops, middle schools and high schools might want to facilitate student mobility by deploying laptop and Ultrabook systems,” says Hall.

The common denominators in all models are the Intel Core processors. The district established the Intel Core i5 processor as the minimum requirement for all student, teacher, and staff computers. “By selecting new PCs with Intel Core i5 processors, we can give students and teachers the performance and reliability to support a full range of the latest interactive, multimedia applications,” says Hall.

The devices, which use the Windows\* 7 operating system, run either Microsoft Office\* 2013 (for teachers) or Office 365\* (for students). Through a single sign-on, students and teachers can also access multiple additional programs and content through SAFARI Montage.

### **Consolidating Resources and Streamlining Management**

The newly virtualized and centralized infrastructure is helping the district save real estate, energy, and time. “With help from Presidio, we moved applications running in 49 distinct locations to a single, centralized environment with just 17 blade servers based on Intel Xeon processors,” says Hall. “We are saving space and controlling power consumption while also simplifying

### **Lessons Learned**

Bibb County School District learned how important professional development is for any new technology deployment. “We have established extensive training resources for teachers, including online videos and face-to-face instruction, to help them make the most of new technology,” says Mike Hall, executive director of technology services. “Providing training for IT staff has also been essential in ensuring smooth operation of all of our new solutions.”

management. We're now better able to manage the entire infrastructure with a relatively small IT staff. We can reduce driving costs and emissions because we no longer have to send technicians all over the county to maintain servers."

### Preparing for Online Tests and Enabling Student Mobility

The deployment of thousands of new computers will help make students more comfortable with technology. "The state has mandated that all elementary and middle-school students will take standardized tests online," says Hall. "By putting computers within reach of more students, we can better prepare them for those standardized tests and for a more technology-driven world."

The district has also been able to increase student mobility and extend the school day beyond the final bell. "In several of our middle and high schools, there is now a one-to-one ratio for students and computers. Schools

are able to more deeply integrate technology into each student's day," says Hall. "Meanwhile, the SAFARI Montage system lets students access school resources easily from home, so they can continue to work on projects and assignments after school or even if they're out sick."

### Creating a More Engaging Student Experience

With a more robust network and infrastructure, a new digital media management and distribution system, and thousands of new computers, teachers can foster an engaging classroom experience. "We anticipate that students and teachers will use these new resources in exciting ways," says Radcliff. "For example, students can use video conferencing to connect with experts around the world in engineering, biology, manufacturing, and other fields. Making those connections can spark curiosity, support student research, and broaden career horizons."

The end-to-end technology improvements can help the district meet both short- and long-term goals. "By giving students more experience with technology and supporting a more diverse range of learning styles, we certainly hope to improve student outcomes," says Radcliff. "But we also anticipate that these new technologies will enable a more authentic learning experience that connects classroom lessons with the real world and promotes long-term success for our students."

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