CASE STUDY
Intel® Core™ vPro™ processors
Intel® Solid-State Drives
Education
Remote Manageability

Engaging Students and Simplifying PC Management

Buncombe County Schools deploy PCs with Intel® Core™ vPro™ processors to boost performance, ease remote management, and improve energy efficiency

For students and teachers in North Carolina's Buncombe County Schools, computer technology plays an integral role in the overall learning experience. By deploying computers with Intel® Core™ vPro™ processors, the district's small, five-person networking department is streamlining the remote management of its large PC fleet, conserving energy, and enhancing performance for a full range of applications. The Buncombe County Schools IT group is also evaluating Intel® Solid-State Drives (SSDs) to help increase performance and extend battery life for laptops, which boosts student and teacher productivity.

ELEVATING YOUNG MINDS
BUNCOMBE COUNTY SCHOOLS

"Our tests showed that certain computers with Intel® SSDs boot in half the time of systems using traditional hard drives.... For students and teachers, SSDs will translate into improved productivity."

– René Shuster, Computer Technician, Buncombe County Schools

CHALLENGES

- **Streamline PC management.** Reduce the time and resources required for a small IT staff to manage more than 12,000 computers used by students and teachers across the district's 42 schools.
- **Enhance performance.** Deliver the performance that students and teachers need to boot up systems and launch applications quickly, extend battery life, and run the most demanding educational software.

SOLUTION

- **Refresh client systems with Intel® Core™ vPro™ processors.** The Buncombe County Schools IT department deployed laptops from HP with Intel Core vPro processors, replacing older systems and adding new systems for newly constructed schools. The IT department will use Intel vPro technology with Novell ZENworks* to efficiently manage systems remotely.
- **Implement Intel® Solid-State Drives (SSDs).** Testing showed that Intel SSDs can help the district further enhance computer performance and reduce power consumption.

IMPACT

- **Better performance.** Intel Core vPro processors deliver the performance students and teachers need inside and outside of the classroom, enabling them to multitask and run the most demanding, media-rich educational software. Intel SSDs accelerate PC system startup and application loading while contributing to a smooth experience in the classroom and in computer labs.
- **More efficient PC management.** Intel vPro technology helps enhance the efficiency of remote management, allowing administrators to keep PCs stable and up to date while minimizing disruptions for students and teachers.
- **Lower energy consumption.** Intel vPro technology allows IT staff to power down systems at night, and Intel SSDs can help extend battery life of laptops so students and teachers can keep working throughout the school day.
- **Cost reductions.** By decreasing the time and resources required for PC management and reducing hardware failures, Intel vPro technology and Intel SSDs are helping the school district do more while spending less.

For North Carolina's Buncombe County Schools, technology is an essential part of the K–12 school day. Teachers use interactive whiteboard applications and Web-based software to produce interactive content to engage students in the classroom, and students run a broad range of processor-intensive applications for graphic design, research, computer science, and engineering in computer labs. In all, the county supports approximately 250 software applications on more than 12,000 desktops, laptops, and netbooks distributed throughout the school district.

Intel® Core™ vPro™ processors increase performance and enhance management

The IT department uses Novell ZENworks* to manage the district's PC client fleet, but with such a small staff managing thousands of computers, the department needed a better way to update software and install security patches. "Updating software on our wireless computers is currently a time-consuming process that involves collecting laptops and connecting them to the wired network via the student labs," says Jerry Robertson, WAN engineer for the school district. "We need to improve remote management so we can keep our computers secure and up to date whether or not they are physically connected to the network."

The IT department decided to make a change as the district was refreshing aging computers and purchasing new systems for two new schools. The IT team sought computers that could provide remote management capabilities and deliver the performance that students and teachers need to run even the most demanding software.

Adopting New Intel Processors and Exploring Intel SSDs

To refresh systems and prepare for the opening of two new schools, the district deployed approximately 2,500 HP EliteBook 2530p* notebooks with Intel Core vPro processors. In addition, 1,000 Dell Latitude E6510 and E6520* laptops equipped with 2nd generation Intel Core i5 processors are used for teachers and administrators. "The Intel Core vPro processors combine excellent price/performance with the hardware-based management capabilities we will need to implement wireless remote administration," says Robertson. The district's IT staff is exploring the use of Intel Solid-State Drives (SSDs) in client systems to further enhance performance and improve energy efficiency.

Boosting Application Performance

Students, teachers, and IT staff benefit from the performance improvements delivered by Intel Core vPro processors and the fast read and write times of Intel SSDs. "We have seen a real jump in performance from previous-generation processors," says Paulo Furches, computer technician for Buncombe County Schools. "With the Intel processors and Intel SSDs, teachers can run interactive whiteboard applications easily, and students have the performance they need to run Adobe Creative Suite*, AutoCAD*, and other demanding applications. Meanwhile, the IT staff can complete imaging and installation tasks in much less time."

Using Intel SSDs also could help users start working faster. "In the past, students in labs might have to wait several minutes for an older system to boot up," says René Shuster, computer technician for Buncombe County Schools. "Our tests showed that certain computers with Intel SSDs boot in half the time of systems using traditional hard drives. The imaging and sysprep processes were up to 50 percent faster, and on average, a full virus scan completed 10 percent faster compared with the same system using a traditional drive. For students and teachers, SSDs will translate into improved productivity."

Intel® Turbo Boost technology, which dynamically increases processor frequency as needed, can increase overall PC performance even when running the most demanding software applications. "Students might be watching Web-based videos on a lab computer while the antivirus program is running a scan in the background," says Shuster. "Intel Turbo Boost technology helps ensure students continue to have a smooth experience."

Streamlining Software Updates with Intel vPro Technology

By using Intel vPro technology with the latest version of Novell ZENworks, the IT staff expects to accelerate several administrative functions, including software updates. "We plan to wake machines remotely using Intel vPro technology and then distribute updates and patches with ZENworks," says Robertson. "With Intel vPro technology and Novell ZENworks software, we can speed up remote administrative tasks and eliminate disruptions to students and teachers."

SPOTLIGHT ON BUNCOMBE COUNTY SCHOOLS

Located in western North Carolina, Buncombe County Schools employ nearly 4,000 people and serve more than 25,000 students. Technology plays a key role in helping the district achieve its vision of preparing students to reach their potential and become successful, responsible citizens in a rapidly changing, diverse, global society.

Conserving Power and Extending Battery Life

Intel vPro technology can also help reduce power consumption. "Creating green schools is a top priority for our district. In fact, the two new schools under construction are designed specifically to use less energy than standard buildings," says Robertson. "With Intel vPro technology, we can power down systems remotely at the end of the day to help meet our energy goals."

The district's testing showed that the SSDs can reduce power consumption and extend battery life. "A teacher might provide laptops to students during a class period. When class is over, there isn't always time to recharge the laptops before the next class," explains Furches. "By using Intel SSDs, we can extend laptop battery life so the last class can still use the computers. In our tests, computers with Intel SSDs used up to 80 times less power than the same system with traditional drives."

"This improvement directly translates into longer battery life and more instructional time for students," says Shuster.

Doing More with Less

While Intel vPro technology can help reduce the time and resources required for client management, replacing potentially failure-prone mechanical hard drives with the more reliable SSDs could help the school district decrease spending on PC maintenance. "Together, Intel vPro technology and Intel SSDs can help us make the most of our personnel and our resources," says Furches. "Reducing operational costs will allow us to invest in new technology that helps us further improve teaching efficiency and keep our students engaged."

Find a solution that is right for your organization. Contact your Intel representative or visit Intel's Business Success Stories for IT Managers at **www.intel.com/itcasestudies.**

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