



PROMOTING EDUCATION
WITH SECURE
CONVERGED NETWORKS

3Com® Solutions for K-12 Schools

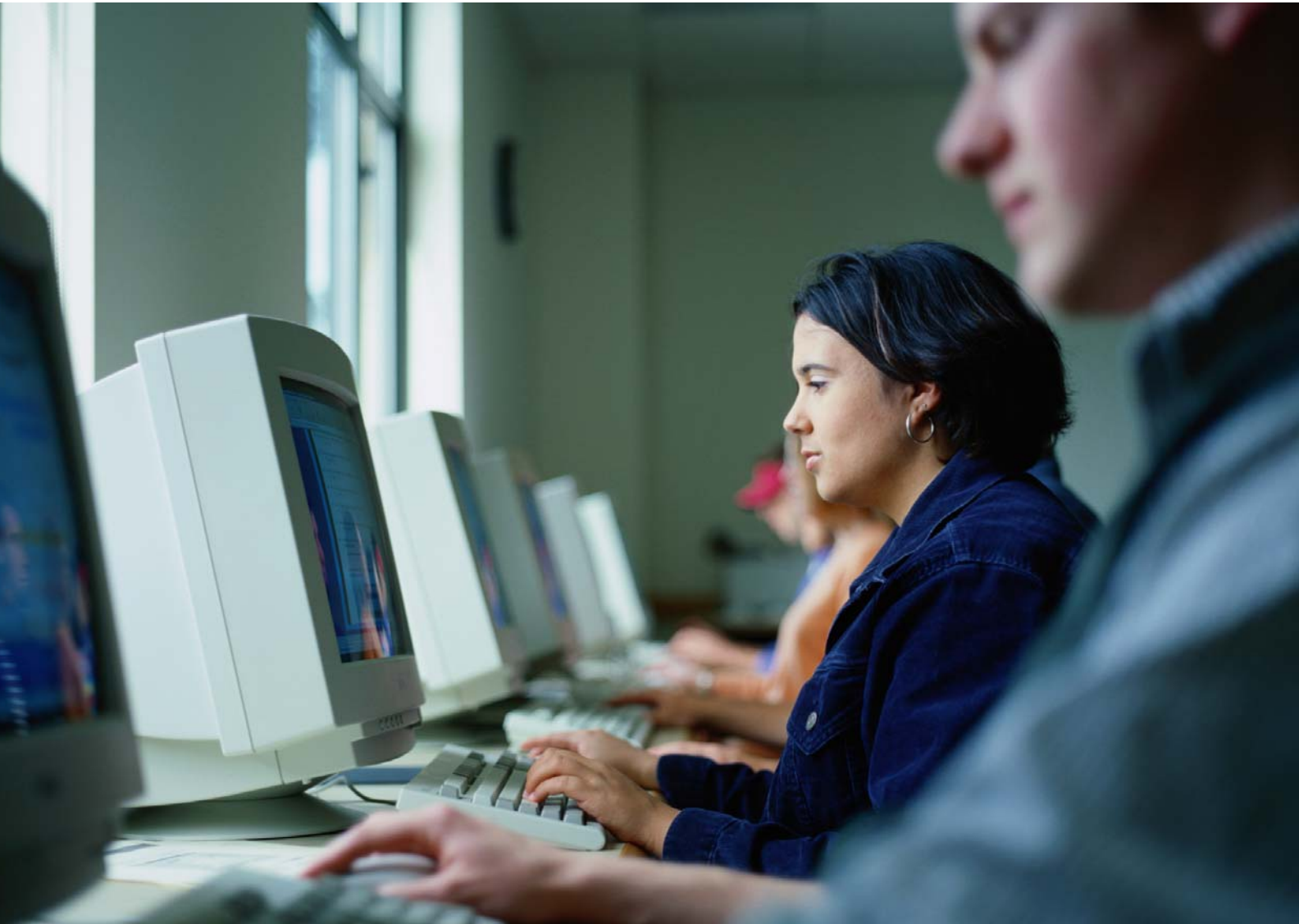
CONNECTING FOR LEARNING: Safely Expanding Information Boundaries

TECHNICAL CHALLENGES

- › Ensuring secure, reliable access to people and information resources
- › Safely extending the physical boundaries of learning environments
- › Delivering the system performance needed for rich, multimedia learning experiences
- › Enabling resource access from a range of communications devices

OPERATIONS CHALLENGES

- › Cost-effectively administering communications systems
- › Optimizing the effectiveness of IT staff
- › Enabling users with varying technical expertise to benefit from advanced communications capabilities



SECURITY AND HIGH PERFORMANCE

Bandwidth and network speed are optimized with proactive security solutions that ensure the safety of student, staff and information

As educational institutions become increasingly dependent on networked communications, and as security risks intensify, transparent and trustworthy network protection becomes more and more critical. Security capabilities integrated into 3Com® wired and wireless networks and the proactive impact of TippingPoint™ intrusion prevention technology can ensure the safety of students, staff and information without compromising network speed or clogging valuable bandwidth.

Intrusion prevention systems (IPSs) can be deployed anywhere on the network to block malicious traffic and initiate quarantine actions. 3Com security management systems provide administration, configuration, monitoring and reporting for multiple IPSs with turnkey, rack-mountable deployment and a state-of-the-art administrative interface. To maintain the highest level of vigilance, 3Com IPS solutions also include automatic updates of protective filters to guard against the latest threats. Delivered weekly or immediately in urgent situations, they provide a powerful layer of safeguards for servers and desktops, and in virtually every case, fully inoculate them before an attack.



CASE STUDY

In 2004, officials at the Hawaii Department of Education (HIDOE), the oldest public school system west of the Mississippi and the nation's 10th largest school district, confronted what school districts nationwide dread. The notorious Blaster worm struck the local area network (LAN) of one of its 275 K-12 schools and spread like wildfire across the district's wide area network (WAN). The worm flooded HIDOE's entire infrastructure with packets, infecting schools throughout the state and forcing the system to shut down for several days. Quickly, HIDOE had to dispatch IT teams to each infected school to manually cleanse their PCs and LANs of the malicious software.

To ensure proactive protection after this horrible experience, HIDOE deployed 3Com intrusion prevention technology to block malicious packets at line-rate Gigabit speed and protect routers, switches, VoIP systems and other infrastructure components from targeted attacks and traffic anomalies. The intrusion prevention systems (IPSs) throttle back non-mission critical applications that consume bandwidth and IT resources. They also let HIDOE's IT personnel conveniently manage their new security solutions—collect comprehensive real-time reports and graphs on traffic, blocked attacks, and network hosts and services, and automatically update security filters using the IPS security management systems and 3Com Digital Vaccine® real-time inoculation service. By controlling network activities with its 3Com solutions, HIDOE's IT staff can efficiently optimize performance of the entire network infrastructure.

Read more at www.3com.com/HIDOE

POWERFUL, COMPREHENSIVE COMMUNICATIONS

Convergence solutions economically and safely enhance learning opportunities and collaboration among administrators, staff, students and their families

Convergence technologies—now readily available—expand educational opportunities by enabling cost-effective, advanced collaborative learning environments. They let school personnel, students and their families come together in ways that only a few short years ago were unimaginable. IP phones can be moved, added and changed without special service technicians. All that is required is unplugging them from one location and plugging them into another network port. Customized settings and functionality remain intact. Calls can be made over the Internet without the expense of traditional long-distance services. PCs can act as desktop phones. Voicemail messages can be retrieved from email attachments. Video and audio conferencing can be initiated with the click of a mouse. And from any location on the network via a web-based management tool, system administrators and users can create and manage their telephony configurations

3Com delivers all of these advanced capabilities through an integrated set of software modules and a range of hardware platforms and IP phones that lets educators cost-effectively leverage their data network to match specific needs. 3Com convergence solutions enable exceptionally easy-to-use, real-time audio and video exchanges that not only increase productivity, but also simplify school delivery of emergency notifications, replacing expensive and labor intensive manual dialing procedures. They even let administrators record malicious calls and activate automatic notification to authorities at the touch of a button. And they provide these benefits with a low total cost of ownership that stretches budgets while enhancing network power and control.



CASE STUDY

Martin County School District is a fast-growing pre-K to grade 12 public school system just north of Palm Beach, Florida. It serves 17,800 students at 18 schools, including a new high school and elementary school. The district's top priorities, including parent-teacher communication and student safety, were difficult to achieve with its legacy PBX systems that connected five schools via point-to-point T1 circuits. The separate systems linked classrooms to each school's intercom, but didn't let teachers call 911 directly from their rooms in an emergency. An additional concern was cost, considering the need to upgrade its existing proprietary systems, extend service to all schools in the district and deploy solutions in older buildings where only a single network drop per classroom was available.

3Com came to the district's rescue. In fact, shortly after installation, the 3Com converged network solution was put to the test by two hurricanes that hit Martin County in rapid succession and caused damage that shut down the district's Pinewood Elementary School. The 3Com Voice over IP (VoIP) system enabled emergency actions that were transparent to users. The easily programmed auto-attendant handled incoming calls to multiple locations and the versatile 3Com IP phones allowed existing network drops to power handsets and PCs using the phones' uplink ports. The 3Com converged system continues to optimize district communications with its sophisticated, yet easy-to-manage, call handling and messaging services that facilitate efficiencies among school office and teaching personnel and improve communications with students and their families. Callers can listen to a schedule of sports events at the high school or check bus routes when they dial the transportation office. Administrators can implement unprecedented control over campus security. Caller ID capabilities support requests for student early dismissals. Enhanced 911 service lets teachers summon help directly to their classrooms, saving precious minutes in a crisis. Call detail records let principals verify emergency calls in real-time, thwarting callers trying to disrupt the school day.

Read more at www.3com.com/martin_county_schools

Schools can optimize network investments with standards-based solutions that can be deployed and expanded with ease to meet and evolving needs

HIGH-VALUE STRATEGIC INVESTMENTS

The best technology investments are those that continue to provide value over time, avoiding obsolescence triggered by fast-paced innovation. That's why 3Com designs standards-based solutions that can grow and evolve with ease. Among the many ways that 3Com solutions help educational institutions is by delivering interoperability to let schools stretch limited budgets and migrate to new systems and applications at their own pace.

Standards-based solutions provide the straightforward installation and practical management that contribute to investment value. They can be easily configured to work side-by-side with existing third-party equipment and future standards-based acquisitions. 3Com solutions also offer simple, centralized and remote administration to reduce training, travel and response time. Management software allows IT staff to maintain LANs, WAN connectivity, Voice over IP communications and wireless systems with the same tools. Plus, 3Com offers expert professional design and implementation services that school systems need to effectively deploy high-value solutions, as well as maintenance support to ensure continuing high-quality performance.



CASE STUDY

Mercer County Special Services School District of Trenton, New Jersey, provides over 750 severely disabled students from 18 communities with an advanced special education curriculum well beyond the means of local school districts. Though the district upgraded to a 3Com Fast Ethernet network in 1998, evolving needs made it necessary to consider a further network upgrade. The district chose 3Com solutions once again to address the increasing demands for online services, including content sharing, email, a student database, budgeting and accounting—all without taxing the district's three-person IT staff.

Today, a single modular 3Com core switch in the district's new elementary school provides Gigabit uplinks over fiber to connect all four of the district's buildings. It delivers high performance, line-rate 10-Gigabit and Gigabit switching and routing, as well as the scalability to support more than 10,000 nodes. Traffic management and link aggregation capabilities ensure that the network operates at peak efficiency, even when large numbers of students are watching instructional video content. The switch's Access Control Lists (ACLs) add an additional measure of Internet security, allowing only authorized users to access restricted locations. Sub-second failover in the switching fabric protects the district from costly and disruptive downtime in the event of an outage, dramatically lightening the system management workload of IT staff. For providing network connectivity to more than 600 Macintosh desktops throughout the campus, the school district is using enterprise-class 3Com stackable workgroup switches.

Read more at www.3com.com/mercer_county_special_services_schools

UNTETHERED ACCESS TO PEOPLE AND INFORMATION

Secure wireless networks enhance communication and collaboration by freeing administrators, staff and students from the constraints of the wired infrastructure

Instant access to technology has become a requirement at home, in businesses and in schools. Devices of all kinds and advanced networking software now support (and encourage) this expectation. Wireless networks free users from traditional work locations and reduce the expense and disruption of extending networks with wired connectivity. They can provide remote and interactive learning opportunities that enhance collaboration and create virtual classrooms unbounded by physical or geographic limits. They can also cost-effectively extend network connectivity to locations that would be impossible or too expensive to wire for LAN and WAN communications.

The 3Com wireless LAN Mobility System provides schools with untethered connectivity, data privacy and security for information exchanges. It frees them to create easily managed wireless systems that deliver seamless connectivity, eliminating coverage gaps and optimizing RF performance.



CASE STUDY

Newport News Public School District in Newport News, Virginia, includes 33,200 students and 4,900 faculty and staff. Ensuring the finest learning opportunities for its students required a powerful, secure wireless solution that the district's IT staff could manage from anywhere on the network. After comprehensive research, the district found that only 3Com offered a solution combining best-of-breed security features with extraordinary ease of management.

Newport News deployed the innovative 3Com Wireless LAN Mobility System and the 3Com Enterprise Management Suite. With secure, easily scalable, robust features, district staff are able to manage hundreds of access points (APs) simultaneously. Centralized administration eases the task of configuring the managed APs (MAPs), virtual LAN (VLAN) functionality and user authentication. IT staff can specify the network resources a given login or group of logins can use, and wireless controllers push the data to every MAP at once, centrally authenticating users and enforcing network authorizations for network-wide protection—avoiding extensive staff travel among the district's five high schools, eight middle schools, 28 elementary schools and four early childhood centers.

Read more at www.3com.com/newport_news_schools

ENSURED EXCELLENCE

From small elementary schools to sprawling multicampus districts, 3Com secure, converged networks are enriching the lives of students. They are facilitating the work of educators with intelligent, integrated communications solutions. With simplicity and economy—hallmarks of 3Com solutions—they deliver both the efficient deployment and management and the standards-based interoperability that helps schools maximize the value of their investments.





Visit www.3com.com for more information about 3Com secure converged network solutions.

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