A Different Kind Of Desktop

New Technologies for School Districts

DANIEL LAFLOR/ISTOCKPHOTO

How schools can take advantage of virtualization and cloud computing to reduce costs and increase flexibility

EDUCATIONAL INSTITUTIONS, WHETHER K-12 or collegiate, face a unique challenge. They have a variety of users—students, teachers, administrators—each requiring different kinds of applications, levels of access, and security. Serving these diverse user segments has always been a complex challenge for academic IT staff.

In the 21st century, however, academic IT has the pleasant prospect of advancing technology solutions while lowering complexity. With the availability of new technologies, it finally has options that let it deploy appropriate desktops and back-end systems for the appropriate segment of users.

Even better, these new technologies give cash-strapped school districts a computing model that doesn't force them to choose between rich, interactive content and cost-effective deployment and management. They combine the best of both worlds. They give more control to IT and deliver enhanced, effective 21st century educational materials to students, which translates into a win for students, teachers, and administrators alike.

An Evolving Challenge

IT managers in education have always faced challenges at the desktop. While they needed to allow students access to computers, they had to restrict the ability to download and upload inappropriate content. That almost seems prosaic compared to today's situation, in which technology is an even more integral part of most school systems. This is true both on the back-end, where servers and networks support administrative services, such as electronic attendance and absentee notification, but also in the classroom as well.

Administrators, IT managers, and teachers face an evolving challenge to provide education the way students are accustomed to accessing information: through technology. These new learning paradigms encompass a variety of technological challenges:

- Reliable networks for increased online and video content
- The use of mobile devices for both homework and information access
- One-to-one e-learning for special-needs students
- Higher levels of security

Simplifying Online Education

HOW DESKTOP VIRTUALIZATION HELPS EDUCATION

Desktop virtualization is a flexible family of delivery methods for software applications, ideally suited for educational institutions. Rather than deploying a traditional model, in which IT installs and maintains applications and operating systems on individual platforms, this model gives IT the additional option of streaming them from servers. IT also benefits from centralized management, data security, and lower licensing costs. Because schools pay less for technology investment and maintenance, they can invest more in education.

In addition to the complexity of educational options, technology is constantly evolving. IT managers face a dizzying array of mobile devices, wireless networking options, and desktop options (full-fledged client or virtual). Faced with increasing technological choice on one side and decreasing budgets on the other, IT professionals in school systems must traverse a narrow path toward a sustainable infrastructure.

Preparing For a Changing Future

To make this journey, IT administrators in education need to take advantage of the fundamental foundation offered by standard technology, but also have enough flexibility to accommodate an evolving landscape. Given financial restrictions, this foundation must also be cost-effective. Simply put, today's schools need to adopt an evolutionary model that allows them to accommodate new technology, but doesn't require them to reinvest in new infrastructure each time advancements occur in devices, networking, or even educational methods.

This new flexible model must accommodate both the front-end, where the educators teach and the students learn, and the back-end, where IT's administrative responsibilities lay. This means creating an infrastructure that supports a full-featured learning platform on the client side, whether through a notebook, a tablet, or a thin-client device. It also requires an infrastructure with back-end servers that support applications for administration, basic education, digital content and creation, and mobile access during non-school hours. For the highest degree of flexibility, these applications can reside either on servers that belong to the school district, or on servers of third-party service providers.

Technology for the 21st-Century Education

The hardware, software, and services on which this flexible infrastructure rests are already increasingly deployed in both public-sector and private-sector institutions. This means that educational institutions can take advantage of lower costs, both in terms of initial deployment and in support, because they are not forced to use a single solution designed primarily for the educational segment.

Here's a look at some options for a new infrastructure:

Mobile Platforms: Advances in mobile technology mean that students and teachers now have the processing power and storage capability to accommodate today's applications, and to do so either in the classroom or in other environments, such as museums or laboratories. Even as mobile devices evolve, though, IT maintains the control of applications and operating systems.

Virtual Desktop Infrastructure (VDI): Thin-client desktop devices benefit from lower licensing and maintenance costs. These devices communicate with VDI servers, which deliver the software applications and operating systems. All data is automatically housed within the data center, increasing data security. Centralized servers also simplify security, because applications can't be uploaded or downloaded from the client.

Server Capacity: Using hybrid client solutions, schools can also reduce the amount of physical space needed for servers. The servers can be consolidated in one site to provide a centralized private cloud or even a virtualized solution—where applications and even operating systems can be served on-demand to devices throughout a school or school district.

Cloud Services: Cloud services, whether internal or external, can be used to augment classroom or data center servers. Schools should look for cloud service providers who offer compliance with regulatory requirements—such as the Family Educational Rights and Privacy Act (FERPA)—as part of their service-level agreement, which can reduce the time internal IT staff must devote to compliance.

In aggregate, these technologies give IT managers in education something that hasn't been common before: a standardized infrastructure with built-in flexibility. With this kind of infrastructure, employing platforms for clients and servers based on standardized and widely deployed Intel® technology, IT administrators can take advantage of lower costs while still offering a wide range of options serving the needs of students, teachers, and administrators.

As a result, IT can help schools meet the demands of the present, while effectively creating a scalable, reliable graduation toward the future. ■