SEGRA®

Cybersecurity for **Educational Institutions**

Highly-Dependable, Secure and Easy-to-Manage Technology and Connectivity

The evolving landscape of education has underscored the critical need for fast, reliable, and secure internet connectivity in schools. In 2024, as institutions continue to adopt hybrid models blending in-person and remote learning, high-capacity internet remains essential for K-12 and higher education. This connectivity supports:

- Enriching digital learning experiences with media-rich, interactive content
- Seamless access to lessons, lectures, and online assessments
- Cost-effective digital educational resources
- Student engagement in national and global forums, competitions, and interactive events

Technology challenges facing educational institutions

While high-quality Internet is now critical for both teaching and learning, many challenges remain for schools due to other factors, including the physical configuration of existing broadband infrastructure, network security and inflexible bandwidth.

Network configuration matters

Many school districts rely on a hub-and-spoke model that was designed to allow simple, centralized monitoring and control. However, a centralized design poses a risk to service availability if the connection to the spoke (the central office) goes down or is severed, leading to outages for all schools on the hub. Segra designs network topologies without hub-and-spoke layouts, called ring topologies. With these ring network connections there is a circular data path, with each networked node connecting to two others, like points on a circle that eliminate single points of failure.

Segra offers dedicated fiber services with synchronous upload and download speeds due to bandwidth that is not shared. Additionally, our fiber connectivity provides much greater reliability and availability.
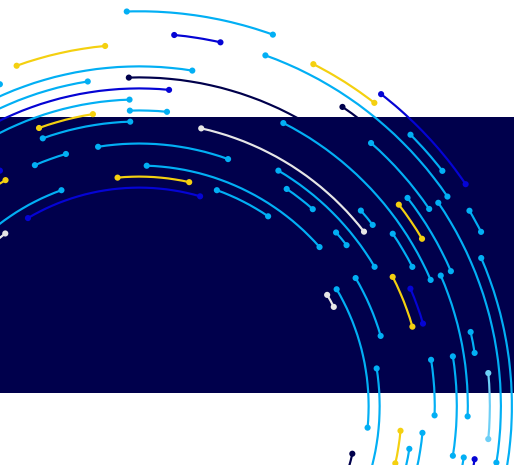
Cybercrime and schools

According to Bloomberg News, an advisory from the FBI, the Department of Homeland Security and the Multi-State Information Sharing Analysis Center reported that 57% of reported ransomware attacks involved K-12 schools. Additionally, a report by Malwarebytes found that ransomware attacks against universities increased by 70% from 2022 to 2023, while a study from IBM reported the average cost of an attack in 2023 was $3.7 million. To defend against malware and criminal intrusions, Segra provides a holistic, multi-layered cybersecurity approach designed to protect against the most common cyber threats targeting the education sector, including:
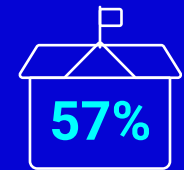
57% of reported ransomware attacks involved K-12 schools
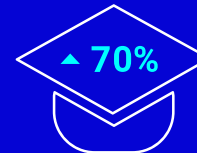
▲ **70%** ransomware attacks against universities[1]

$3,700,000 was the average cost of an attack in 2023[2]

[1]Malwarebytes, 15 Apr. 2023
[2]IBM, 1 Aug. 2023

Let's Create Winning Connections Together.

SEGRA.COM • 833.GO.SEGRA

As the sudden pivot to at-home learning made clear, having the flexibility to tune bandwidth to match consumption is important not just for supporting educational programs but also for budgetary responsiveness.

As a large carrier that provides connectivity services to schools, we are still nimble enough to accommodate fast-changing bandwidth needs, and offer the flexibility to quickly scale bandwidth to accommodate rapid changes in network consumption. For school administrators who must act quickly in times of demand, a lack of flexibility can lead to difficulty when managing service availability and cost.

Always-on, nimble service and support

Segra doesn't take a one-size-fits-all approach to our clients seeking support or when they have questions about their services. We are able to accommodate the needs of education institutions, large or small, that have special requirements.

- **Ransomware:** Disk-encrypting extortion malware that renders files and programs on the targeted system unusable by blocking access to the data until a ransom is paid.

- **Distributed Denial of Services (DDoS):** A form of malware that blocks normal traffic to and from a targeted server, service or network by overwhelming the system with a flood of Internet traffic that disables a website or service.

- **Data breaches:** When bad actors gain access to, compromise or expose highly sensitive data stored on school systems and networks such as grades or personal and contact information.
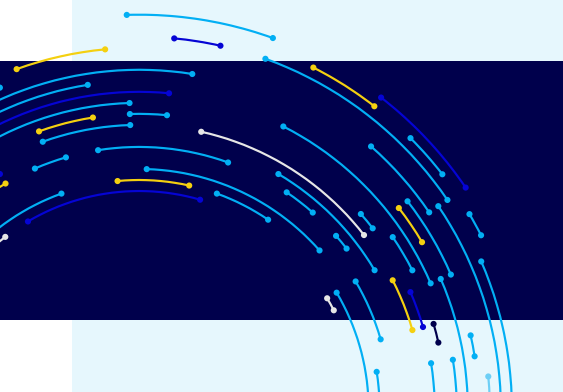
We also understand that implementing and managing these tools and systems are often beyond the reach of many individual schools, so Segra offers the following managed Security solutions:

- **Segra Hosted Firewall** provides cloud-based perimeter protections that apply to all Internet traffic traversing your network. Segra manages the service, ensuring that the defenses are always up-to-date and configured for your threat level. Our firewall service eliminates or reduces the risks associated with blended attacks while coordinating security alerting, logging, reporting, compliance and response.

- **DDoS Protection** automatically inspect all internet traffic as it arrives at a network entry point, immediately discarding malicious packets while sending legitimate packets to their destination. The protection is comprehensive, identifying both existing and newly-discovered attack types to prevent direct attacks as well as their side effects.

Scalable bandwidth

The ability to quickly and easily scale bandwidth as demand changes is crucial. Flexibly adjusting bandwidth to match usage not only supports educational programs but also helps manage budgets effectively. As schools adapt to evolving distance and hybrid learning models for students and teachers — while some administrators work remotely — the need for rapid and efficient adjustments to network services becomes increasingly important for smooth management and control.

Segra stands out by offering big telecom technology with the friendly service, support, and flexibility of a smaller, regional company that genuinely cares about its customers. Additionally, Segra provides nimble, resourceful technical support and service responsiveness uncommon among large carriers. Our local support teams ensure customers have real-time access to nearby service personnel and experts.

Segra offers industry-leading support that our customers regularly praise us for, including our service call time and speed, billing accuracy and truly local customer service call centers manned 24/7/365. We also offer an online customer portal that allows our clients to submit and manage service tickets, check on order status and manage service features.

E-Rate

Some Segra services, including DIA, may be eligible for E-Rate funding through a U.S. Federal Communication Commission (FCC) program to make telecommunications and information services more affordable for schools and libraries. E-rate funds, which are administered by the Universal Service Administrative Company (USAC), provide discounts for telecommunications, Internet access and internal connections to eligible institutions. The discounts range from 20% to 90% of the costs of eligible services. In addition to offering connectivity services, Segra works with eligible schools to assist in filing the required paperwork to procure the funds for Segra solutions and services.

Segra Dedicated Internet Access (DIA)

Dedicated Internet Access is Segra's high-performance fiber-based connectivity service, which provides dedicated connectivity to the internet with guaranteed bandwidth to help ensure that your school and classrooms are always online with all the speed and performance they require. Benefits of Segra DIA:

- **Increased productivity.** Boost productivity by providing the reliable, high-performance internet access digital classrooms need for every day operations.

- **Improved scalability.** Offers scalability by supporting a range of access speeds so schools can increase or reduce internet bandwidth as demands change.

- **Extensive fiber network.** Spanning 24 states and covering more than 44,000 fiber-route miles, Segra's network offers one of the largest and most extensive private fiber infrastructure footprints in the eastern United States. If your school is within this territory but not currently served by Segra, we are willing to consider expanding our fiber network to accommodate growing demand.

End-to-end support and services. To ensure you receive full benefit of your Segra high-performance fiber connectivity, we do more than simply bring fiber the last mile to your school's DMRC cabinet. We bring it the last few feet to your classrooms. We offer full installation and deployment services, and can provide the best switches, routers and other networking equipment for your unique requirements. This enables Segra to offer true end-to-end quality of service.

The transformative impact of technology on education continues to underscore the importance of reliable, secure, and adaptable connectivity solutions. Segra is committed to meeting these needs by providing high-performance fiber services, cybersecurity solutions, and scalable bandwidth options tailored to support the unique demands of educational institutions. By addressing the challenges schools face with legacy infrastructure, security threats, and evolving learning models, Segra empowers schools to focus on delivering impactful educational experiences.

As the educational landscape grows more digital and interconnected, Segra's dedication to responsive, localized support and a comprehensive suite of managed services positions it as a trusted partner for schools across the nation. From high-speed, synchronous connectivity to robust cybersecurity, Segra ensures that students, teachers, and administrators have the tools needed to thrive in today's connected world. Together, let's build winning connections that enhance learning, drive success, and shape the future of education.