

# For Educational Institutions, Segra Delivers Highly-Dependable, Secure and Easy-to-Manage Technology and Connectivity



COVID-19 has transformed every aspect of how we work and live, including how students learn, and the pandemic has highlighted the need for schools to make fast, reliable and secure internet connectivity an utmost priority. Even as education moves to a hybrid model or a return to classrooms the importance of high-capacity internet for K-12 and higher education continues to be a priority for the following reasons:

- Media-rich digital learning experiences
- Access to lessons, lectures and testing online
- Digital educational materials for cost efficiencies
- Student participation 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

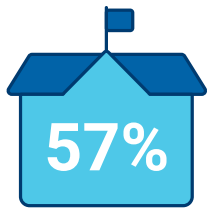
if the connection to the spoke (the central office) goes down or is severed, leading to outages for all schools on a hub. Segra designs network topologies without hub and spoke layouts, called ring topologies. With these ring network connections there is a circular data path, with each networked node 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, with 99% SLA.

### Cybercrime and schools

A more prominent threat is from cyberattacks and cybercrime, which in recent years have become one of the most serious challenges facing educational systems. These include increasing threats of ransomware, DDoS and malware attacks as well as the exposure due to hacking.

[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 in August and September, 2020, involved K-12 schools. Additionally, [TechRepublic](#) reported that from 2019 to 2020, ransomware attacks against universities jumped by 100%, and the average cost of an attack in 2020 was \$447,000. To protect against these kinds of malware and criminal intrusions, Segra offers a holistic, multi-layered approach to cybersecurity that provides the strongest protections against the most common forms of cybercrime targeted at education, including:



of reported ransomware attacks involved K-12 schools



ransomware attacks against universities

# \$447,000

was the average cost of an attack in 2020

- **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, 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 Edge Protect** is available both as an appliance and as part of the Segra Dedicated Internet Access (DIA) offering. Our DDoS protections 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.

- **Segra Security Operations Center as a Service (SOCaaS)**

is a comprehensive cybersecurity solution that provides a holistic approach to protecting a school's entire IT infrastructure against all forms of cyber threats. The Segra SOCaaS solution combines security information event management (SIEM) software with a security operations center (SOC), which is staffed 24/7 with security experts who monitor and analyze an organization's cybersecurity. By combining automated threat detection with human monitoring and decision-making, SOCaaS provides a multi-pronged approach to security that allows schools to take action in real-time as soon as abnormal or malicious behavior is detected anywhere in their network.

## Scalable bandwidth

The ability to quickly and easily scale bandwidth as demand changes is also important. 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. And as schools continue to accommodate evolving distance and hybrid learning scenarios for both students and teachers, and with some administrators also working remotely, schools will increasingly require the ability to turn network services up and down quickly and efficiently for easy management and control.

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, this 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 when 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.

One of Segra's defining characteristic is to offer big telecom technology, but with the friendly service, support and flexibility of a smaller, regional company that takes a genuine interest in its customers. In addition, Segra offers a level of nimbleness and can-do resourcefulness for rapid technical support and service responsiveness not often found with large carriers. Our support teams are local to Segra's geographic area, and our customers have access to local service personal and real-life experts in real-time.

Segra offers industry-leading support that our customers regularly laud 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 to operate every day.
- **Improved scalability.** Offers scalability by supporting a range of access speeds, so schools can grow, or reduce, internet bandwidth as demands change.
- **Extensive fiber network.** Spanning nine states and covering more than 30,000 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.

**Additional cloud-based services from Segra.** When planned or unplanned incidents happen, schools need access to their data to maintain continuity of operations. We offer the following data resiliency services as part of our cloud and Segra-owned data centers across the mid-Atlantic.

- **[Disaster Recovery as a Service \(DRaaS\).](#)** DRaaS uses cloud resources to protect applications and data in the event of system failure caused by a natural or human disaster. This service provides a total system backup that allows organizations to regain operational continuity by enabling a full recovery in the cloud.
- **[Backup as a Service \(BaaS\).](#)** Data created, stored and managed by today's schools is a critical asset that requires protection against system failures and external threats. Segra's BaaS offering protects an educational institution's most critical identified data within a physical or virtual server from full loss.
- **[Infrastructure as a Services \(IaaS\).](#)** IaaS is a cloud computing service that allows schools to rent or lease remote servers for compute and storage in the cloud. With IaaS, users can run any applications on the rented servers without incurring the capital expense of purchasing or operating costs of an on-premises server infrastructure.

To learn more about Segra's connectivity services and technology solutions for education, go to [www.segra.com](http://www.segra.com) or call **833.GO.SEGRA**.

**SEGRA**

**833.GO.SEGRA**  
**[businesssolutions@segra.com](mailto:businesssolutions@segra.com)**  
**[www.segra.com](http://www.segra.com)**

Copyright © 2021 Segra