

CASE STUDY

Pioneering Texas School District Improves Its Cybersecurity Posture with the Fortinet Security Fabric

The Athens Independent School District (ISD) is the home of the four-day school week in the state of Texas. Athens is a small community located southeast of Dallas that pioneered this scheduling option. Being at the forefront of the trend has brought several notable advantages. The district has seen noted improvement in the number and experience levels of teachers who find the four-day week appealing. Staff morale has been positively impacted, and students' test scores have actually risen since the shift.

"Students are spending more time in class during the days they are at school, and they get a little more rest on the weekend," explains Tony Brooks, Director of Technology. "The four-day-week model seems to be working for everyone involved. Other districts around our area are starting to look at following the same schedule, and we have led that movement."

This same innovative spirit took over when Athens ISD administrators realized their security infrastructure was inefficient and providing suboptimal protection. Several years ago, when Brooks was the network administrator, the five-school district had "all different kinds of hardware from different vendors," he reports. "If a switch went down, for example, I had to physically go to wherever it was located, connect to it, and then fix the problem to bring it back up. That was a huge headache because I was a one-man show; the disparate security infrastructure was very hard for me to manage by myself."

Further emphasizing the need for change, the district's legacy firewall failed. "We were constantly getting hit with DDoS [distributed denial-of-service] attacks, and they finally took down our firewall," he says. "After that, I told my superiors that we have to invest more in cybersecurity." District administrators agreed and began a network security transformation.

Firewalls Lead in the Journey to Fortinet

The Athens ISD IT team at the time consisted of Brooks and two endpoint technicians, so simplification and remote management were key decision criteria as they shopped for a new firewall provider. Brooks researched a number of options. "None interested me as much as the FortiGate Next-Generation Firewall," he says. "The way the solutions in the Fortinet Security Fabric all work together caught my attention right away. The FortiGates manage the switches and the access points. That was a huge selling point since I manage the network by myself."

To cover all his bases, Brooks reached out to an IT manager at another school district that was already using FortiGates. "I asked what they thought about how the different Fortinet solutions integrate," he says. "When I heard their praise for Fortinet, I was sold."



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Director of Technology
Athens Independent and
School District

Details

Customer: Athens Independent School District

Industry: Education

Headquarters: Athens, Texas

Expected Business Impact

- Eliminate network outages with transparent firewall failover
- Fully reliable phone system vs. previous multiple-hours-long outages twice a week
- Time savings for IT team to focus on strategic activities vs. going from site to site managing networking and security

The district replaced its legacy data center firewall with a FortiGate Next-Generation Firewall (NGFW). In time, Athens ISD added another NGFW so that today a high-availability (HA) pair protects the network edge, with all district traffic backhauling to the FortiGates. Brooks reports that performance of the NGFWs has been exceptional, and failover works well.

“We had a switch go down, and we had to repair it,” he says. “The network immediately failed over from one firewall to the other, and end-users never knew we had a problem. When we got the switch repaired, the firewalls just failed back over to the original, and it was all transparent to the end-users.” He adds that in the district’s legacy technology environment, the switch failure would have brought down the internet, networkwide, for a while. “I would have had to go to the data center and do what I needed to do, manually, hoping that I could be quick so that everybody could get back on the internet.”

Athens ISD has the FortiGuard Security Services FortiGate Unified Threat Protection (UTP) bundle for its firewalls. “The application control service, in particular, is doing a great job of blocking students from downloading certain types of files,” Brooks says. “That filtering is crucial.”

The district also uses the FortiGate NGFWs to segment the network in order to protect resources from the potential effects of an error in human judgment. “We have a wireless network segment for students who bring their own devices and for the Chromebooks we issue,” Brooks explains. “That student network segment is open to the internet, but they cannot go anywhere else. They cannot even see our internal network.”

Similarly, district staff uses a separate network segment, he adds. “They can get to the printers, which have their own segment. If a staff member gets a virus on their computer, they can print, but the virus will not affect the rest of our network.”

Expanding the Fortinet Footprint

Next, Athens ISD started rolling out FortiSwitch enterprise switches. Brooks manages switches across the network through the firewalls in the data center.

“We selected FortiSwitches mainly because of the ability to configure the switches from the firewall,” Brooks says. “We have single-pane-of-glass management of the firewalls and switches, which is exactly what we were looking for, and the ease of use is unbelievable. I no longer have to travel to each switch’s location when there is an issue. I can change ports and the LAN [local area network], set routes, etc., directly from my desk through the FortiGate. That capability made FortiSwitches a no-brainer.”

Since deploying the first FortiSwitch, Athens ISD has fully transitioned—now, every switch in the district is a FortiSwitch. Soon, Brooks began replacing the district’s legacy access points with FortiAP access points.

“In addition to the way the FortiAPs fit into the Fortinet Security Fabric, we really like their features,” Brooks says. “In particular, we like that we can see the IP addresses of all the devices that connect, and we can see who is logged in.”

Endpoints Get in on the Action

Since its first Fortinet deployment, the district has continued to expand the Fortinet Security Fabric within its infrastructure. For device authentication, Athens ISD deployed the FortiAuthenticator solution, with FortiClient endpoint protection on each end-user machine.

“FortiAuthenticator allows us to manage how computers connect and put the right group policies into place so they get the correct filtering,” Brooks says. He adds that the FortiClient EMS enterprise management solution “enables us to manage multiple

Solutions (cont.)

- FortiGate Next-Generation Firewall
- FortiSwitch
- FortiAP
- FortiAuthenticator
- FortiClient
- FortiClient EMS
- FortiEDR
- FortiVoice
- FortiFone
- FortiAnalyzer
- FortiMonitor

Services

- FortiGuard UTP Bundle

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computers at one time. We can see what software is running on each computer and send updates to it from our central location. It is great!”

The district has also deployed the FortiEDR endpoint detection and response solution on desktops and servers to protect against ransomware, viruses, and similar threats. “It all integrates together,” Brooks says. “If the EDR sees something that is not right, it will quarantine that computer and remove it from the network.”

As an example, Brooks describes a scenario that recently played out: “A staff member downloaded a file from an email and opened it. The file was malware, but FortiEDR caught it and prevented it from running, so it was not able to do anything malicious. FortiEDR immediately notified me about the threat. We looked at her computer, found the virus, cleaned her computer, and got her back up within 30 minutes. And nothing else was infected because FortiEDR had so quickly disconnected that computer from the network.”

Adding Phones to the Mix

Last year, Athens ISD switched its phone system to FortiVoice Secure Unified Communications. “Our previous phone system was cloud-based, and it was causing a lot of problems,” Brooks says. “As often as twice a week, we were experiencing outages that lasted two to three hours. That was not good for our district.”

On top of the hassle for everyone trying to communicate with the school via phone, the outages resulted in a flood of calls to Brooks and his end-user support team. “We got fed up with all the issues,” he says. “Because we already had so many Fortinet devices, we decided to move to FortiVoice and FortiPhones.”

Now all the phones throughout the district are Fortinet devices, and the transition has been well worth the effort. “FortiVoice has been absolutely wonderful,” Brooks says. “We have had only one outage since we switched, and that was not because of Fortinet; it was because of an outage in our internet service provider.”

Fortinet Security Fabric: The Best Solution Imaginable

Across all the Fortinet solutions, several key benefits emerge. One is visibility into network activity. Brooks relies on FortiAnalyzer network analytics for information that helps him better manage networking and security. “We pull reports on staff, students, and the threats that are coming in,” he says. “We can see in real time whether our endpoints are hitting malicious sites, proxies, or anything like that. We can also pull a report to see something like which VLANs [virtual local area networks] are using the most bandwidth. Ultimately, I can see everything that is going on—the reporting in FortiAnalyzer is great.”

A couple of months ago, Athens ISD enhanced Brooks’ network and security management capabilities by deploying the FortiMonitor network and application performance monitoring platform. “FortiMonitor has been a blessing,” he says. “If something goes down, I will receive a text message alert. We have not experienced any device outages since we installed FortiMonitor, but I rest easier knowing that if something happens, I will find out immediately.”

The alerts and interconnectedness of the Fortinet solutions mean that both Brooks and the district’s current network administrator spend much less time “running around.” He explains: “Before, I was hardly ever in my office—I spent maybe 45 minutes a day at my desk. Instead, I was constantly out doing something to the firewall, switches, servers, or access points. Now, the network administrator and I both spend most of our time in our offices. There are days when we do not even get into the firewall. We are saving four to five hours each day on managing the network and security.”

That is time the IT team can dedicate to other tasks. Plus, Brooks adds, “I no longer have to worry all the time.” If the network faces a threat, he will know right away and will have the visibility needed to act rapidly and decisively.

“Moving to the Fortinet Security Fabric solutions is the best thing we have ever done to protect our district,” Brooks concludes. “Our lives are a lot better because we spend less time fixing things. Fortinet has made our network a lot easier to manage. This is the best security solution for my district.”



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