

CASE STUDY

Productivity Skyrockets at Industrial Software Provider Thanks to High-Performance Next-Generation Firewalls

Network security is a matter of survival for PTC. The Boston-based company lives at the intersection of industrial machinery and IT. Its CAD software enables customers to design and build highly sophisticated equipment, including fighter jets. The tool's augmented reality mode makes users feel as if a physical rendition of the design were in the room with them.

Other PTC solutions help machinery from a previous generation to continue operating in the modern world. "Many factories have very old legacy devices performing industrial applications," says Mike Clark, director of security for PTC. "We have found a way to make them 'smart' so that they can communicate in modern communication protocols. That lets us harness their data so our customers can make better business decisions."

These systems, which are available for deployment both on-premises and in a Software-as-a-Service (SaaS) configuration, are business-critical for PTC customers. A failure in the software or theft of the data it produces might bring a manufacturer to its knees. Thus, a security lapse in the PTC infrastructure might be extremely damaging to the PTC brand, even if it did not ultimately affect any customers.

"Cybersecurity is important to every company, but even more so to software providers," says Clark. "The word 'trust' is front and center. Digital products are inherently in the crosshairs of cyber threat actors, and attacks against the software supply chain escalated dramatically during the pandemic. So, customers today are very focused on whether they can trust PTC and our solutions."

Looking for SD-WAN With Built-in Security

Even as they increased their focus on maintaining customers' trust, the PTC security team was grappling with a network that could not keep up with business growth. The company has 90 offices across 30 countries. Throughout this dispersed network, business units were moving more and more workloads from on-premises data centers to the cloud, which significantly hampered network performance, Clark says. PTC's legacy hub-and-spoke security model was not a viable go-forward approach.

"As we pivoted to the cloud, we needed more bandwidth at the network edge," Clark says. "We started putting in 10 Gbps circuits in some locations, but the legacy firewalls were still a bottleneck."

The Corporate Experience Center, located at company headquarters, allows individuals to move virtually through 3-D spaces in real time. It enables PTC to share cutting-edge technology with customers and prospects and inspires new use cases for the company's products. It also requires higher performance at the local-area network (LAN) edge than the legacy infrastructure could provide. Data protection was another pain point. "We shifted to a hybrid approach for backup and recovery, integrating on-premises and cloud applications," Clark explains. "This placed too much stress on our legacy firewalls. Backups degraded network performance, and our firewalls became a bottleneck for large data transfers."

PTC decided to deploy software-defined wide-area networking (SD-WAN) so that cloud traffic would no longer be backhauled to a corporate data center. A top priority in the decision process was to minimize latency throughout the security infrastructure. "Each of our 90 locations now needs security services that traditionally existed only at the hub," Clark says.



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Details

Customer: PTC

Industry: Technology

Location: Boston

Business Impact

- Increased confidence that corporate infrastructure is secure
- Higher end-user productivity due to improvements in network performance
- Reclamation of two full-time security positions to focus on protecting the enterprise, instead of troubleshooting latency problems
- Better support for business growth, via simplified and scalable network infrastructure

The company evaluated several leading vendors. Clark's team liked the price point and value of FortiGate Secure SD-WAN, as well as the integration of security and networking. "As a software company, our infrastructure is already complex," Clark says. "One of our goals is to simplify wherever we can. We looked at other options that would have required us to have an SD-WAN solution in one VM [virtual machine] and a firewall running in another VM. They would be interconnected in the box, but to me, that is just not scalable or reliable. It is too complicated. We wanted security and networking in a single solution, and Fortinet offered a much higher level of integration than any of the other products we considered."

Serendipitous Discovery of a High-Performance Firewall

"We were so impressed with Fortinet's performance that we began replacing our legacy firewalls from another vendor with FortiGate firewalls. Our testing revealed that the performance of the FortiGates is exactly as advertised," Clark says. "This was a distinct advantage for Fortinet, because if security is hampering your ability to do business, nothing else matters."

Clark did not take lightly the decision to transition to a new security vendor. "I had worked with our legacy firewall vendor for 20 years," he says. "The cost of moving vendors is significant, so I am not going to move unless I see really significant value in doing so. But in this case, we saw that we needed to make a switch because the cloud is changing our business. The FortiGates' performance means that our network and security infrastructure can effectively support the business in the future, as we continue transitioning to the cloud."

Now, PTC is using FortiGate Next-Generation Firewalls (NGFWs) to protect the network edge and data center. The corporate security team uses FortiManager and FortiAnalyzer, which together comprise the Fortinet Fabric Management Center, to monitor and manage the infrastructure. "We have approximately 70 firewalls around the world," Clark says, "so one of the key capabilities that we need is single-pane-of-glass management providing ease of use for such a large-scale deployment. To scale security, we use the Fabric Management Center to manage all our FortiGates from a central location."

Clark is very pleased with the level of protection the new NGFWs provide. During the rollout, his team assessed and compared the FortiGates with PTC's legacy firewalls. "We did extensive testing for all kinds of attacks, from emerging threats to things as basic as SSL decryption and picking up malware variants," he says. "That is one of the challenges we have seen in the industry overall: While a malicious payload may be detected, and the solution may record it as stopped, that is not always the case. So, we tested how well both our legacy firewalls and the FortiGate NGFWs detected threats, and whether the data they reported back to us was accurate. Throughout a full week of testing with our actual data, the FortiGates proved significantly better than the legacy solution."

The speed of network traffic is also meeting expectations. "When we put in the FortiGates, all our bandwidth problems went away instantly," Clark says. Not only does this boost end-user productivity, but it frees up security staff for more value-added tasks. "Previously, the security team spent a lot of time looking into incidents of degrading performance, which diverted our attention from our core mission of securing the enterprise. In fact, at one time, we had two engineers dedicated to handling performance-related support requests. That was not a good use of their time. Security is tough, and Fortinet has enabled us to put the resources we have in the right places to protect the organization."

"Fortinet support has been excellent, providing the right answers quickly and accurately," he concludes. "The FortiGate Firewall and Secure SD-WAN are simple and effective solutions, as they are both enabled by the same FortiGate product, and they offer great price-to-value. As we roll them out around the world, the new infrastructure is going to be a huge benefit to our end-user experience, as well as to our security posture."

Solutions

- FortiGate Secure SD-WAN
- FortiGate Next-Generation Firewall
- Fabric Management Center NOC
- Fabric Management Center SOC

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