

CASE STUDY

Efficient and Secure Fortinet-Based Network Facilitates Organ Donations throughout Michigan

Organ donation saves the lives of tens of thousands of Americans every year, and Gift of Life Michigan serves as the federally designated organ procurement organization for that state. Anytime someone in Michigan may have organs to donate, the nonprofit manages the entire process, from working with the potential donor's family to delivering organs to the transplant hospitals that can use them. Coordination and transport of those donations require a great deal of both urgency and sensitivity.

"Some of the organs we receive come from people who registered as organ donors when they got their driver's license," says Eric Anderson, director of information technology services for Gift of Life Michigan. "For those who did not sign up in advance, our staff approaches their families to discuss the potential for organ donation. After every attempt to save the patient's life has failed, a doctor will determine and declare a patient dead. Organ donation organizations do not declare death."

"Approaching families of patients is one of the hardest jobs in the organization," he continues. "This team works with the families, explaining the process, guiding the families step by step, and letting them know that by donating their loved one's organs, they have the potential to save as many as eight people's lives—so some positive could come from their tragedy."

Gift of Life Michigan has another team that handles medical care and testing of potential organ donors. A separate surgical group recovers organs after a patient dies. And the logistics team is key to success throughout the donation process. "Each organ has a maximum time that it can be outside of the body," Anderson says. "Our logistics team has a limited window to find the right match for a donor and then get the organ to the transplant team in time."

Throughout the donation process, all communication, coordination, documentation, and blood tests rely on technology. Delays in the process are literally life-threatening for someone waiting for a life-saving organ. Ensuring that employees never experience application downtime is one of Anderson's key responsibilities.

"Everything we do is computer-based," he says. "We have backup procedures in case of emergency, but because every step of the organ donation process is incredibly time-sensitive, staff members often hesitate to even restart their computers. An attack that caused a network outage could be devastating to prospective organ recipients. That is always looming in the back of my mind; security is constantly on my mind. It is also a concern for our senior leadership and for the clinical staff who rely heavily on technology."



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Eric Anderson,
Director, Information Technology Services, Gift of Life Michigan

Details

Customer: Gift of Life Michigan

Industry: Nonprofit

Headquarters: Ann Arbor, Michigan

Business Impact

- Fast, reliable network facilitates more life-saving transplants
- Improved end-user satisfaction at all levels of the organization
- No major security incidents since moving to Fortinet

Ease of Use and Centralized Management Are Key Selling Points for Fortinet

When Anderson joined Gift of Life Michigan in early 2022, the organization was using firewalls from one vendor, switches from another vendor, and wireless access points from a third. “In addition to this mix of vendors, we had a managed service provider [MSP] that helped with tasks like editing firewall rules,” he says. “We were paying a sizable annual fee for them to just take whatever steps our staff requested. That was not an efficient approach to security management.”

Performance was a serious challenge for the legacy network. “Complaints about network stability and about the speed of the wireless network were common,” Anderson says. The legacy solutions did not integrate well, and the organization struggled to diagnose the issue. “Staff had tried and failed to identify the traffic chokepoint. When I came on board, they were already looking for a new networking and security provider.”

Gift of Life Michigan wanted to consolidate firewalls, switching, and wireless connectivity with a single provider. The organization also wanted these solutions to be easy to use. “We wanted to bring in-house the work that our MSP had been doing,” Anderson explains. “We wanted our team to be more hands-on, confident, and educated about how the networking and security infrastructure worked. At the same time, we are a lean group with only two system administrators and one security professional, so we needed simplified workflows.” Anderson had experience with a different firewall provider, but “The due diligence process made clear that, with our budgeting and staffing, Fortinet was a great fit for us.”

The organization standardized on Fortinet solutions, rolling out a high-availability (HA) pair of FortiGate Next-Generation Firewalls (NGFWs) with FortiGuard AI-Powered Security Services Enterprise Protection Bundle, along with FortiSwitch secure Ethernet switches, and FortiAP secure wireless access points. The FortiAnalyzer analytics platform aggregates logs from all the Fortinet devices, providing a consolidated dashboard for understanding network and security issues throughout the Gift of Life Michigan campus.

Anderson was responsible for ensuring that the transition resulted in minimal downtime for staff. “We are a 24×7×365 operation and could not afford much network downtime in moving to the Fortinet Security Fabric,” he says. “We were lucky to have a fiber infrastructure that enabled us to rack our new Fortinet architecture in parallel to our legacy network. The staff got some hands-on experience with the Fortinet staging environment, then we were able to get short windows of downtime that rotated among different areas of the building. We incrementally moved the old infrastructure to the new infrastructure—wireless, switching, and firewalls—in one weekend.”

Tight Security, Careful Network Segmentation

The team implemented the firewalls’ advanced security features using FortiGuard AI-Powered Security Services, including inline malware protection, intrusion prevention system (IPS), and web filtering. “In the past, we used very basic firewall rules to manage security,” Anderson says. “Adding the IPS and other capabilities significantly strengthened our security posture.”

Business Impact (contin.)

- Cost-efficient, enterprise-grade cloud security
- Seamless yet strong protections for remote users, wherever they are located
- 300 million events blocked per year
- Elimination of service delays when IT staff take vacation time
- Entire network infrastructure replaced in one weekend with minimal downtime
- \$30,000 per year in cost savings by ending managed service provider contract

Solutions

- FortiGate Next-Generation Firewall
- FortiGate VM
- FortiSwitch
- FortiAP
- FortiAnalyzer
- FortiSASE

Services

- FortiGuard AI-Powered Security Services Enterprise Protection Bundle



At the same time, they locked down network segmentation. “When I came on board, the network was divided into some VLANs [virtual LANs], but there were not any barriers between them; traffic could move freely back and forth,” Anderson reports. “With the Fortinet solutions, we have created more segmentation while applying the right rules. If two VLANs do not need to talk, traffic is not allowed to pass between them. We have used this segmentation to separate out our lab, which has a great deal of patient health data. Keeping it isolated adds an extra layer of protection.”

Despite the segmentation, Gift of Life Michigan IT staff can see any security events on their network in one place. “Before, with three separate vendors, we did not have log aggregation or alerting,” Anderson says. “To understand a security issue, we had to log into each separate solution and manually hunt through logs to try to find correlations.”

“Now, through FortiAnalyzer, we can look for traffic anomalies, and we get daily reports,” he continues. “We also get alerts for any issues FortiAnalyzer detects in either the IT network or the IoT [Internet of Things] equipment in our medical facilities and lab. An anomaly might not be malicious, but it is nice to have the visibility to make that determination.”

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“Very Seamless” Cloud and Remote Connectivity

Since rollout of the Fortinet Security Fabric, Gift of Life Michigan has extended its Fortinet footprint into the cloud. Over the past three years, it has shifted some resources from the cloud to an on-premises virtual environment and consolidated its remaining cloud presence in Microsoft Azure. “We moved some servers back on-prem because we feel confident that they will be fully protected behind the FortiGates,” Anderson explains. “The lab has seen huge improvements in application response time now that it is using local servers.”

To protect its remaining cloud resources, the organization recently stood up an HA pair of FortiGate virtual machines (VMs) in Azure. Log data from the virtual FortiGates flows into FortiAnalyzer, combining with on-premises security information to give Anderson’s team an organizationwide perspective. “Now we can have site-to-site VPN between Azure and our data center—FortiGate to FortiGate—which has simplified management of cloud security,” Anderson says. “It is also a huge enhancement security-wise. Some of the strongest features in Azure are too expensive for us, as a small-to-midsized nonprofit. The FortiGates are a much better fit to provide enterprise security in the Azure cloud.”

Gift of Life Michigan is also piloting the FortiSASE secure access service edge platform. “The majority of our staff works remotely most of the time,” Anderson says. “Those who travel from hospital to hospital receive a wireless hotspot, but if they cannot get a good signal, they might end up connecting to a hospital’s Wi-Fi or even stop at a coffee shop to work. These employees carry sensitive information on their laptops, so we started looking at SASE solutions to keep them—and our assets and resources—safe, regardless of where they are connecting.”

FortiSASE was the obvious choice because Gift of Life Michigan is so familiar with Fortinet solutions. “We have already built a knowledge base,” Anderson says. “Just knowing how the menus work and how things are set up makes our staff more efficient when using FortiSASE.” The organization also likes that FortiSASE can support zero-trust network access (ZTNA). “That is something we are looking to deploy down the road, and we did not want to end up with multiple vendors to make it happen. FortiSASE can meet our ZTNA and SASE needs in one solution.”

The pilot is near completion, and FortiSASE is working great, Anderson reports. “Testing is going well. FortiSASE is making secure remote connectivity much easier, without requiring staff to know what is happening behind the scenes. It just works. We have been particularly happy with how FortiSASE handles certificates. I have worked on the on-prem side with SSL, TLS, and decryption, and suffered the pains of trying to get the certificate to work on every endpoint. FortiSASE enables us to break open that traffic and do a deeper analysis so that we are as secure as possible. Everything is very seamless.”

Easy-to-Manage Network Is Saving Tens of Thousands of Dollars Annually

All told, the Fortinet Security Fabric has dramatically improved security across the Gift of Life Michigan network. “We are in great shape,” Anderson says. “In 2024, our Fortinet Security Fabric blocked more than 300 million events. And we have not had any major incidents or breaches since we moved to Fortinet. I attribute that largely to the time we have invested in learning the Fortinet interface and putting in place the proper firewall policies, profiles, etcetera.”

He adds, “Enabling my team to learn to use solutions from one vendor instead of three has been invaluable. They were able to build enough expertise on the Fortinet Security Fabric to feel confident managing the solutions day to day.”

Now, if a staff member takes personal time off (PTO), others on the team can fill in. “When I first came aboard, if someone was out, work might have to wait until they came back,” Anderson says. “A new user might not get a phone right away because someone was on PTO. Today, whether it is an emergency or just day-to-day tasks, staff members can take time off without tickets piling up in their absence.”

The team’s confidence in using the Fortinet solutions also enabled Gift of Life Michigan to end its contract with the MSP it used previously—a \$30,000 annual savings. “I was not a fan of having to reach out to an external company for changes to our firewall policies and rules,” Anderson says. “That added another layer of complication to security. Plus, by managing the full network, wireless, and security 100% in-house, we are saving tens of thousands of dollars a year.”

He adds that if Gift of Life Michigan had canceled its contract with the MSP but kept its legacy infrastructure in place, it would have had to hire more staff to manage the network. Overall, he says, the Fortinet solutions have significantly reduced the total cost of ownership of the organization’s network. “As a nonprofit with a limited budget, Fortinet helps us stay cost-conscious,” Anderson says.

Fast, Stable, and Secure Network Saves Lives

When the organization experiences a security threat, alerts from FortiAnalyzer enable staff to respond much more quickly. For example, Anderson says, “The other day, we discovered odd traffic on the network. When we looked into it, we found that someone had plugged a personal laptop into their docking station, which put it on the wired network. We saw it very quickly and were able to shut it down and educate that user.”

Perhaps most important, Gift of Life Michigan now has a more stable network. “When I came on board, we experienced network slowness and outages,” Anderson says. “The wireless network, in particular, was not stable at all. Since moving to Fortinet, we have not had any major network outages or wireless issues, and the speed of the wireless and the overall network has increased a lot.” The number of help desk tickets related to network issues has fallen, even as the IT team has encouraged end-users to report every annoyance and inconvenience.

“We have been rearchitecting and rebuilding our servers, with a stable network as the foundation for those changes,” Anderson says. “After our transition to Fortinet, the complaints about network speed and reliability disappeared. Our help desk response is much faster because we have fewer tickets, and I have heard from a lot of people, at all levels of the organization, about how happy they are with the changes to IT.”

Anderson concludes that having a more stable network and responsive help desk enables Gift of Life Michigan to save more lives. “Everything we do is super time-sensitive. The worst-case scenario would be for a technology delay to cause an organ to not be transplanted in time, leading to the death of the intended recipient. By giving us a faster, stable, and secure network, the Fortinet Security Fabric is helping us save lives.”

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