

CASE STUDY

Water Treatment Company Improves Customer Service and Performance With Private Cloud

Tower Water provides water treatment, cooling tower, and heating, ventilation, and air conditioning (HVAC) cleaning services for high-rise buildings in New York City, northern New Jersey, and Philadelphia. The family-owned business was founded in 1992 by Russell and Noah Baskin, and its client list includes famous high rises, premier A-class buildings, among others.

Matthew Marlowe had been an IT consultant for the firm since 2012, and was brought on as the company's full-time IT director in 2018. His charter was to bring the growing company's IT infrastructure to current standards, boost its performance, and implement process improvements.

Modernizing a Legacy Cloud Architecture

At the time, Tower Water's IT infrastructure was largely public cloud-based. "Of course, such a setup brings the benefit of full disaster recovery capabilities and the ability to log in from anywhere," Marlowe observes. "However, our employees were seeing more and more issues with latency and performance, and this was starting to impact customer service. Fixing that was going to require us to buy more RAM, which would have doubled our subscription costs. We were also having more problems getting adequate support from our cloud provider and from third parties."

From a security perspective, Tower Water had minimal protection. "We did have an open source-based physical firewall, but other than that we relied on the built-in tools from our cloud provider," Marlowe recalls. "They did not offer web filtering or sandbox analysis, and only offered antivirus filtering at the network level."

Broadening Access to SCADA Architecture

This arrangement was satisfactory for Tower Water's business for a time, but it eventually became inadequate for several reasons. First, the growth of the company required a more mature infrastructure to avoid downtime and latency issues. Second, worker expectations were changing, with Tower Water employees requesting access to corporate resources from their personal devices to make them more productive in the field.

But a third factor really hit home with Tower Water's leadership: evolving customer expectations. Specifically, Tower Water maintains supervisory control and data acquisition (SCADA) devices on cooling towers atop high-rise buildings, which control the chemicals added to the water that circulates through the HVAC system. "These devices are called 'digis' in the industry—digital routers embedded with SIM cards," Marlowe explains. "They have static public IP addresses, and we were able to modify our legacy firewall's rules to allow only traffic from us. Although the traffic was not encrypted, it was secure enough for the way we operated."



"Moving to the virtual private cloud infrastructure will cost half as much as staying in the public cloud—and the infrastructure is more robust and secure."

– Matthew Marlowe, Director of IT, Tower Water

Details

Customer: Tower Water

Industry: Water Treatment Consulting

Location: Somerset, New Jersey

Business Impact

- Staff time savings up to 72 hours due to speedy deployment
- 50% savings in monthly private cloud costs compared with public cloud-based infrastructure
- 80% cost avoidance in monthly telco subscription by rerouting traffic using Fortinet SD-WAN

Now the owners of the high-rise buildings are requesting their own access to the digis on their properties. Tower Water realized that providing such access would require a new, more strategic approach to both networking and security.

Securing a New Virtual Environment

After researching available options, Tower Water decided to bring most of the company's services in-house with a new, virtualized infrastructure. Marlowe selected Nutanix AHV as the company's hypervisor. "Once that decision was made, I turned to finding a new threat management solution to protect this infrastructure," he explains.

An early question was whether to purchase a physical next-generation firewall (NGFW) or go with a virtual one. "Going virtual made the most sense since almost the rest of our infrastructure would be virtual," Marlowe states. "This simplifies maintenance and allows for full backups of the router rather than just configuration backups."

As Marlowe researched virtual firewall providers, he learned that Nutanix is a Fortinet Fabric-Ready Partner. This means that Fortinet and Nutanix leveraged the collaborative power of the Fortinet Security Fabric to develop and validate joint solutions. For Marlowe, that meant the FortiGate VM virtual NGFW was prevalidated and ready for deployment on Nutanix AHV. The Fabric-Ready solution resulted in greater controls, deeper visibility, enhanced security, and seamless policy enforcements in the virtual network. What is more, Marlowe had worked extensively with Fortinet technology at two other companies in the past, developing significant expertise with—and respect for—the technology. As a result, the decision to select FortiGate VM was an easy one.

Tower Water elected to add the unified threat management subscription bundle to the FortiGate purchase. This gives the company access to a number of Fortinet services, including advanced malware protection, sandbox analysis with FortiSandbox Cloud, application control, and intrusion protection. "FortiGate VM met our needs for everything," Marlowe asserts. "We now have a stable core firewall router, web filtering, virus protection, and secure VPN. And the fact that sandbox analysis is included in the subscription means that we can protect our network traffic from zero-day threats without adding another line item of cost."

Saving Time and Money With Deployment

Some aspects of the deployment are still in progress, but Tower Water is already realizing tangible value from its Fortinet deployment. One quick win was with the speed of the initial deployment. "Even with my relatively high level of expertise, such a project typically takes a week or two of uninterrupted work," he says. "With FortiGate VM, I was able to go from an open box to fresh configurations in a single day. Of course, I made tweaks after that, but the basic system was up and running." This represents a savings of 32 to 72 hours of staff time compared with a typical deployment.

The company has also realized cost savings from the software-defined wide-area network (SD-WAN) capabilities in the FortiGate VM. "The building we are in uses Bigger Networks for network routing," Marlowe explains. "We are on a minimal, 50-megabyte-per-second plan with them. This means that we have potential latency problems when traffic is high. Rather than buying more capacity from Bigger, we are using FortiGate Secure SD-WAN to route some traffic directly to the Verizon cellular network when needed, bypassing Bigger altogether. This helps us avoid an 80% increase in our monthly subscription fees to scale their service."

Business Impact (contd.)

- Unscheduled downtime reduced from 4% to none
- Customers can access their own SCADA devices—securely and easily
- Peace of mind from being able to afford 24×7 support because of choosing a virtual NGFW

Solutions

- FortiGate Secure SD-WAN
- FortiGate VM
- FortiSandbox Cloud
- FortiGuard Security Services
- FortiCare 24×7 Service

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- Matthew Marlowe, Director of IT, Tower Water

Realizing Many Additional Benefits

Tower Water is also realizing cost savings in its move from a public cloud to a virtualized, private cloud environment with Nutanix and Fortinet. “Long term, we found that this was clearly the right solution for us,” Marlowe contends. “Looking at monthly expenditures over five years, moving to the private cloud, virtual infrastructure with Nutanix and Fortinet will cost half as much as staying in the public cloud—and the infrastructure is more robust and secure.”

Avoidance of downtime is another benefit. “We were down 4% of the time with our public cloud infrastructure, and we continually struggled to convince our cloud providers that it was their problem and not ours,” Marlowe recalls. “Since we have deployed our virtual, private cloud infrastructure nine months ago, we have not had any unscheduled downtime. This means our employees in the field can service customers whenever they need to.”

Another customer service benefit is the ability for building owners to access their own digis—which will be rolled out in the near future. “Our digis now connect with the FortiGate VM VPN, and the traffic is encrypted,” Marlowe describes. “And we will soon provide VPN accounts to our customers to enable them to access the devices on their buildings.” Using intent-based segmentation capabilities in the FortiGate VM, Marlowe will create firewall rules that provide each external user with access to the devices he or she owns—but block their access to all other devices and the rest of the network.

Operationally, the seamless Integration between FortiGate VM, FortiSandbox Cloud, and Nutanix is a huge timesaver. “This was probably the biggest factor that led us to choose Fortinet,” Marlowe says. “The ability to spin up FortiGate VM instances instantaneously in Nutanix—and make ongoing modifications on the fly—will save countless hours of my time over the years.”

Benefiting From a Strong Leadership

Marlowe subscribed to FortiCare 24×7 support for the virtual NGFWs. “The fact that we went with FortiGate VM means that 24×7 service was financially feasible for our small company, as it is less expensive than with an appliance,” he explains.

Around-the-clock availability of support brings significant peace of mind despite the fact that Marlowe has not needed to use it much. “I actually did not need to call them at all during deployment,” he recalls. “I did call them about one issue after deployment, and they diagnosed and fixed it within an hour. My experience at other companies is that FortiCare support is bar none.” Marlowe is also a big fan of the Fortinet Cookbook, which is full of tips and best practices. “I used several of its recipes to deploy FortiGate VM for our specific environment.”

For Marlowe, Tower Water’s relationship with Nutanix and Fortinet is strong. “Everything just works—the products, the integration, the support,” he concludes. “I expect this Fabric-Ready partnership to meet our needs for a long time to come.”

Fabric-Ready Partner

- Nutanix

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