FORTINET

CASE STUDY

Swedish Energy and Water Utility Enhances Safety and Reliability Through IT/OT Integration as Part of Ongoing Digital Transformation

Falu Energi & Vatten (Energy & Water) is a municipally owned utility company with products and services spanning electricity, heating and cooling, water, sewage, and recycling across the Swedish municipality of Falun.

With around 200 employees and a turnover of SEK 770 million, the company is focused on creating a future-proof infrastructure that makes everyday life both safer and more comfortable for its citizens and their future generations.

Long-term Digital Transformation Project

Back in 2009, earlier than many other utility companies, Falu Energi & Vatten realized both the potential and the necessity of digital transformation, embarking on a long-term project of modernization and digitization of the myriad processes and tools underpinning its operations.

Over the intervening years, the sector as a whole has faced massive changes, from rising public awareness of the climate crisis, driving exponential demand for renewable energy and other more sustainable services, to the rapid adoption of online channels and other digital technology by consumers.

For Falu Energi & Vatten, the first step in preparing for these changes was the realization that its information technology (IT) network and security infrastructure would need a level of end-to-end visibility, control, and integration that its previous firewall architecture was unable to provide.

“It was very clear from the start that the existing firewalls wouldn’t be enough to meet the evolving security challenges of our business,” explains Jacob Isacson, the company’s IT manager. “Not only did we need more sophisticated protection, but we desperately needed better visibility of the overall network and its traffic.”

As a utility company, in addition to the IT challenges of supporting new omnichannel communications and meeting customer expectations for greater, more granular information access, there was the operational technology side of the infrastructure to consider, with its hundreds of industrial control devices spread over some 200 remote locations.

Since some of these devices are 15–20 years old, predating the more recent “security by design” concepts of modern IT equipment, the integration of operational technology (OT) and IT environments would need to be a careful and gradual process following industry best practices to ensure the highest levels of

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Details

Customer: Falu Energi & Vatten AB

Industry: Utilities

Location: Sweden

Business Impact

- Provided the central visibility, control, and automation needed for the company’s digital transformation
- Laid the foundations for ongoing IT/OT integration

safety and protection at all times. This meant choosing a future-proof solution that would support the necessary traffic segmentation or "zoning" based on multiple criteria, including legacy application protocols as well as user and device identity.

Another consideration was device resilience to the harsh Swedish winters for the switches connecting the various industrial control systems at exposed installations, such as the pump stations of its water distribution networks.

A Single, Fully Integrated Network and Security Infrastructure

After a careful evaluation of potential solutions, Falu Energi & Vatten chose Fortinet.

"We were looking for an integrated approach, but one in which all the component parts would work together as a seamless solution," explains Mr. Isacson. "The Fortinet Security Fabric gave us this and provided the broad visibility, central control, and automation we needed."

The resulting network included FortiGate next-generation firewalls (NGFWs) for connection of the 7 office locations and the first 35 OT sites in its staged rollout to 100+ such locations, FortiSwitch for its Ethernet local-area networks (LANs) (including rugged versions for the ICS installations), and FortiAP wireless access points for seamless inclusion of mobile devices within the same secure access framework.

With its purpose-built security processors, the FortiGate NGFW has the power needed to identify thousands of applications inside network traffic and apply deep inspection and granular policy enforcement. This ensures that all of the traffic from the company's monitoring and control systems, together with all its business productivity applications, are easily processed, optimized, inspected, and protected against potential threats without introducing latency into the network.

FortiSwitch rugged switches are engineered to deliver all the performance and security of a standard FortiSwitch, but in hostile environments where extreme swings in temperature might otherwise lead to component failures.

FortiClient, FortiAuthenticator, and FortiToken were added to ensure that every connected user and device would be strongly authenticated and would meet its zero-trust access requirements.

With its integrated software inventory module, FortiClient provided Falu Energi & Vatten with increased visibility into software installed on the endpoint. In addition to managing licenses, software inventory can improve security hygiene. When installed software is not required for business purposes, it unnecessarily introduces potential vulnerabilities, and thereby increases the likelihood of compromise.

"Our systems are pretty complex and rely on around 400 different applications," comments Isacson, "but through the FortiClient Fabric Agent we discovered many more, some of which had already been discontinued and which could have exposed us to potential vulnerabilities if left unchecked."

Comprehensive protection of the company's email system was accomplished through Fortinet's secure email gateway, FortiMail.

"One of our biggest headaches was the huge volume of phishing attacks that plague this sector," concludes Isacson. "FortiMail and FortiSandbox does a really good job of identifying and eliminating these and other threats and forms a key part of our defenses."

Through the deep integration of multiple security technologies, the Fortinet Security Fabric is able to provide Falu Energi & Vatten with consistent protection, configuration, and policy management, and effortless, real-time communication across its entire security infrastructure.

Business Impact (contd.)

- Improved the safety, reliability, and efficiency of essential services through centralized security policy monitoring and control

Products

- FortiGate
- FortiClient
- FortiAuthenticator
- FortiToken
- FortiSandbox
- FortiSwitch
- FortiAP
- FortiMail
- FortiManager
- FortiAnalyzer

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The Security Fabric leverages external threat intelligence provided by FortiGuard Labs, which collates and processes the data from myriad anonymized sensors and over 200 global partners around the world using artificial intelligence and machine learning to identify unique features for both known and unknown threats.

The addition of FortiManager and FortiAnalyzer provides a centralized window and interface through which Falu Energi & Vatten can monitor, analyze, and control its infrastructure to minimize the time needed for threat detection and mitigation and to reduce security risks that might arise from misconfigurations.

Through the resulting network infrastructure, Falu Energi & Vatten now has a solid foundation on which to build a safer, more reliable, and more efficient future for its business and the community of Falun.

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