

# Salus Connects Devices with Ayla Networks and Analyzes Data with Splunk to Build Value-Added Solutions on AWS



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*- Scott Hublou, Vice President of Global Connected Solutions at Salus*

## Providing Ongoing Insights To Homeowners Through Smart Home HVAC Innovation

The HVAC industry plays an integral role in keeping homes warm, showers hot, and rooms bearable during the summer heat. As new smart home technological innovations, such as Internet of Things (IoT) connected device capabilities and machine learning (ML) tools, come to market, some HVAC companies have evolved to drive better monitoring capabilities and more control for end users.

Salus wants to take this evolution further. The company is invested in using IoT and ML to set a new standard for the value it brings to customers: using data to engage with and enhance the lives of users through the systems and devices that are essential to their everyday lives.

“Since I began at Salus, one fundamental question has driven my agenda and the work my team does: How can our devices help you, the end user, do what you’re motivated to do and bring you continuous value after the novelty of initial use fades?” says Scott Hublou, vice president of global connected solutions at Salus.

“We want to go beyond providing control and monitoring capabilities to end users. We want to provide insights on an ongoing basis that end users take advantage of to drive savings and better experiences. Our goal led us to investigate how we could use technology to do time series-based reporting where we engage with a user in an ongoing manner. We want to be able to say, ‘Over the last few weeks, we’ve been seeing X trend. Here are some recommendations for you to enhance your experience, save resources, and/or proactively address what may be an issue with your device.’”

To become an innovator in the HVAC connected devices and smart home space and beyond, Salus needed a secure IoT platform, Big Data engine, and scalable compute and storage solution. Knowing how Salus wanted to prioritize resources and time, Hublou knew what the company wasn’t going to do: Build it from scratch.

## Leaving ‘Build it Ourselves’ Behind to Save Millions of Dollars and Years of Time

At his previous company, Hublou spent enormous resources building the infrastructure the company needed for a solution it wanted to create. “Just building my infrastructure for managing my Big Data engine took two years and almost three million dollars at the time,” says Hublou.

## About Salus

Salus designs and manufactures control systems for hydronics, heating, ventilation, and air conditioning (HVAC) as well as fan coil products. The company also offers a broad ecosystem of smart home products, including connected thermostats, a smart home hub, smart plugs, water valve shutoff, and door and window sensors. Originally based in Europe, Salus has recently expanded to North America.

## Challenges

- Provide cutting-edge connected device smart home solutions to both direct consumers and commercial operators
- Focus on building intellectual property and not managing infrastructure

## Benefits

- Saves development time and upfront costs by using proven IoT and Big Data solutions from Ayla and Splunk
- Focuses efforts on using additional AWS solutions, such as Alexa for Business, to drive more value to end users



When he came on board at Salus, one of Hublou's requests was to take advantage of technology solution providers whose core competencies are IoT, Big Data, and cloud, giving Salus the ability to focus time and resources on developing cutting-edge smart home devices designed to change a user's experience. "From day one, our mission was to define our value proposition and identify what was a commodity for us," says Hublou.

"I want to spend money on the differentiating factors of my business. Frankly, I don't want to be building technology solutions if I don't have to. I want to be utilizing technology from experts," says Hublou. "And in the areas in which we're going to contribute intellectual property and differentiate ourselves—that's where we're going to focus our time."

### **Turning to the Experts to Build a Customer-first Connected Devices Solution**

At the top of Hublou's list of experts was Amazon Web Services (AWS). "I decided to use AWS because I felt it was the most mature cloud on which we could securely manage and scale an IoT environment," says Hublou.

After deciding to build on AWS, Hublou sought to identify an IoT platform provider who could meet Salus' requirements both immediately and in the long-term. Hublou found that Ayla Networks, an Advanced AWS Partner Network (APN) Technology Partner and IoT Competency Partner, stood out as the partner best suited to meet those requirements.

"Given my experience, I knew the questions I needed to ask and the answers I should be getting from IoT providers. I chose to work with Ayla because of my interactions with the Ayla team," says Hublou. "It was obvious that Ayla understood what it took to be able to take a product, get it connected, and then manage that connectivity process. Ayla provided Salus an opportunity to not have to concentrate on building an IoT platform from scratch, but to instead concentrate on building value-added services off of the data collected."

With Ayla taking care of Salus' IoT needs, Hublou searched for a partner to meet the company's analytics needs. Hublou needed a partner that could provide Big Data tooling and expertise. He chose to engage with Splunk, an Advanced APN Technology Partner and Big Data and IoT Competency Partner. "I told Splunk what I needed to do and found they were a great fit," says Hublou. "What previously took me two years and three million dollars to build ended up taking me two weeks to implement and a starting cost of about \$10,000 a year to run with Splunk."

### **Using AWS, Ayla, and Splunk to Bring New Value to Customers and Companies**

Salus offers solutions to both direct consumers and commercial operators and provides separate applications and analytics for each type of user. "We have to provide connectivity and remote control from the get-go. Ayla provided that for us out-of-the-box," says Hublou. "Within weeks of engaging with Ayla, we were able to connect our devices and get them up and running for remote control, monitoring, and data collection."



Salus chose to use time series-based reporting so that any time that a certain parameter within an Ayla connected device changes by a defined delta, that device would package all of its properties and seamlessly send it into its AWS environment. “We take the data, store it, and process it within our Splunk environment running on AWS to be able to do some semblance of profiling of that particular device,” says Hublou.

Salus architected for high availability on AWS by using multiple AWS Regions and Availability Zones (AZs) to deploy its environment. The company uses a variety of Amazon Elastic Compute Cloud (Amazon EC2) instances based on Intel processors to meet its compute performance needs. It also uses Amazon Simple Email Service (Amazon SES) and Amazon Simple Notification Service (Amazon SNS) for alerting, along with Amazon CloudWatch, AWS Lambda, and Amazon DynamoDB.

In building components for the next-generation smart home, the company has also started to use Amazon Alexa for Business and geolocation to implement smart home device automatic triggering. Depending on the context, Alexa and geolocation tooling helps the smart home provide users with custom alerts that continuously evolve with use.

### **Offering New Value to Customers and Looking to Predictive Analytics for the Future of HVAC**

“Using AWS, Ayla, and Splunk, we’ve been able to stay ahead of the curve from a business perspective because we’ve spent our time on differentiation rather than building and maintaining infrastructure,” says Hublou. Through its connected device solutions, Salus can save customers money and time and drive optimized device usage through habits learned based on smart device cues.

For example, a boarding school in Denmark struggled to control enormous heating costs for 1,000 dorm rooms because of inefficient radiator use: Students in the dorms regulated room temperature by turning radiators all the way up, and then opening and closing windows to get the room to the precise temperature they wanted. “It wasn’t about retaining the right amount of heat, but about exhausting the right amount of heat—and the university’s energy bills were outrageous,” says Hublou.

Salus worked with the university to implement a connected hardware solution to the room’s radiator and a mechanical valve based upon a thermostat to be used within the room and add sensors to the windows in the room. “Through our system, we were able to create a rules logic that said if the window is open for greater than five minutes, then turn off the radiator and allow the temperature to drop to a particular degree,” says Hublou. “If the windows are opened and stay opened while the radiator is on, then the temperature will drop, and the room will get colder. When they close the window, the thermostat turns itself back on and brings the temperature back up to the desired range. The goal is for the students to learn to use the thermostat to control the temperature rather than opening and closing a window.” Using Salus’ solution, within one heating season, the school was able to save energy costs and alter the behavior of 2,000 teenagers—all through learned behaviors based on smart device interactions.



Salus sees Ayla and Splunk as key collaborators in evolving its offerings and tackling new challenges along the way. Working with Ayla and Splunk, Salus deploys system enhancements about every three weeks and add a new IoT device around every two weeks.

“I began to rely on Ayla as an extended development group and part of my team,” says Hublou. “I spend very little time worrying about and modifying my Ayla environment because I know they’re on it. I don’t have to have my staff monitoring Ayla 24/7. I spend most of my time in our Salus web services environment because that is where we’re building our intellectual property, where we’re doing things that nobody else does.”

Salus is now looking at using predictive analytics to make life even easier for end users and drive more value, such as being able to look at a user’s usage patterns and proactively update systems based on learned user preferences. Using predictive analytics, the company is currently developing a business-to-business marketplace for IoT monitoring, issue detection, and escalation. “Everything else can be commoditized, but not data,” says Hublou. “Being able to do predictive analytics in the way we need will drive Salus forward as we continue to provide customers with a new kind of smart home experience.”

To learn about how you can build an IoT solution on AWS, [click here](#).



[Ayla Networks](#), an APN Advanced Technology Partner and AWS IoT Competency Partner, is a global platform for product manufacturers, service providers, and enterprise companies to connect any device to any application and achieve digital transformation. Offered as a managed cloud Platform-as-a-Service (PaaS), Ayla’s flexibility and modularity enable rapid changes to be made to practically any point of the platform at any time. Ayla is an expert in building enterprise-level, cloud-based software for IoT.



[Splunk](#) is an Advanced APN Technology Partner and Big Data, Data & Analytics, IoT, and Security Competency Partner. The company helps organizations ask questions, get answers, take action, and achieve business outcomes from their data. Organizations use Splunk solutions with machine learning to monitor, investigate, and act on all forms of business, IT, security, and Internet of Things data.



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