Wind River Helps Yoga Systems Deliver a More Secure IoT Gateway

New Solution Equips Service Providers to Offer Robust and Secure Smart Home Capabilities

Yoga Systems

Industry
Home, building, and industrial automation

Solutions
- Wind River Intelligent Device Platform XT
- Intel IoT Gateway

Results
- Competitive differentiation with higher security standard
- Faster time-to-market

Long before the Internet of Things (IoT) had a name, Yoga Systems was engaged in the interconnection and remote management of devices, appliances, and buildings. Today, the company is a pioneer in smart home and building technology, with an intelligent, cloud-based platform that enables telecom and cable service providers to deliver comprehensive building and home automation capabilities. The Yoga platform connects to nearly anything, including wired and wireless security detectors, cameras, thermostats, smart plugs, lighting, entertainment systems, locks, and appliances. It enables end users to manage these devices from anywhere via an Internet connection using their smartphones, tablets, or laptops.

The Challenge

With the rapid proliferation of IoT networks and devices, Yoga Systems recognized a critical gap in the gateway market: security. "There are so many IoT and smart home gateways on the market that actually can be hacked quite easily," says Priit Vimberg, Yoga founder and CEO. I'm just amazed that developers are not putting more thought into security, and this is what we wanted to change. The IoT needs to be really secure."

Yoga set out to develop a highly secure gateway to manage communication between its cloudbased smart home platform and the devices connected to it. In addition to the security issue, the company faced the challenge of getting its product to market quickly in the face of fast-moving competition.

The Approach

Yoga decided to partner with Intel® and Wind River® in the development of its Yoga Tiny IoT gateway, a small-form-factor, energy-efficient computing device targeted to service providers seeking to enter the smart home and smart building markets. Yoga Tiny is built on the Intel Quark™ SoCX1000 gateway platform, based on Wind River Intelligent Device Platform XT. "This solution was compelling to us mainly because of the security aspects and the opportunity to differentiate our product," Vimberg says. "Yoga takes security really seriously. With the security functionality built into Wind River Intelligent Device Platform XT, it is extremely difficult if not impossible to run unauthorized software on our hardware." The Wind River security functionality enables secure boot, establishing a "root of trust" at the OS level that helps prevent malicious code from entering a system by ensuring that only verified, authenticated software can run during the booting process. "If a hacker tries to pirate or take down the system by running some code in the gateway, the code simply will not execute."

Gaining Competitive Advantage

Yoga Tiny is designed for the smart home segment, connecting home devices to the Yoga cloud platform and acting as a "local brain" inside the home in case the cloud server connection is lost. For larger, more complex facilities, the company offers Yoga Pro1, an IoT gateway that also leverages the Intel and Wind River platform. Yoga Pro1 works in much the same way as Yoga Tiny—and incorporates the same security functionality from Wind River—but is designed for professionally wired installations such as industrial plants, telecom base stations, and commercial buildings as well as high-end smart homes. The underlying Intel and Wind River

technology in Yoga's gateway products enables the company to compete in both the consumer and commercial segments.

In Vimberg's view, the security features enabled by the combination of Intel and Wind River are the real competitive differentiator for Yoga in the market. "We are moving toward a world where the cloud, the IoT, and connected devices are controlling everything," he points out. "And it all starts from the devices you use in your home. You want to be sure no one can easily access your private network and break something or see your sensitive data. Our gateway gives service providers greater control over security, and they can assure their customers that their homes are secure."

Working with a pair of proven IoT solution providers such as Wind River and Intel had the added benefits of reducing risks in the development process and helping Yoga get its product to market more quickly than it could have on its own. "The IoT market at the moment is moving really fast," says Vimberg. "Somebody is bringing something new to the market every quarter. If you have a long cycle of making a product and bringing it to market, you will always be losing momentum. Yoga was able to bring our product to market more quickly, reduce our risk, and get ahead of the competition by working with Wind River and Intel and leveraging their secure gateway solution."

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>
> *—Priit Vimberg, Founder and CEO, Yoga Systems*

Gateway to the Future

The collaboration has also helped Yoga gain recognition in the marketplace. "As a fast-growing company in a competitive space, we are happy to work with Intel and Wind River," Vimberg says. "These are trusted companies that always deliver. All the lead teams have been helpful, and they very much understood what we wanted to achieve. We've had great support from both companies, both in helping us making this product and in bringing it to market."

As Yoga continues to expand its footprint in home and building automation, Vimberg expects Intel and Wind River to be part of the company's future. "We want to cooperate more on different aspects of smart homes and the IoT," he says. "We have had discussions on how to go further." Vimberg also envisions the IoT moving toward greater standardization, which will speed and streamline IoT projects by freeing developers from much of the upfront work involved. For example, Wind River performs pre-validation and pre-integration of hardware and software for an IoT gateway, so companies building IoT solutions do not have to spend time and resources to do it on their own. Vimberg cites as a further example Wind River Helix™ Device Cloud, a cloud-based console for managing and monitoring edge devices in an IoT network. "With all these devices and networks in the IoT, there needs to be interoperability," he observes. "New standards for connectivity and languages for devices should make integration easier and also accelerate development quite a bit. We are definitely looking towards more standardization in
the future."

Ultimately, says Vimberg, the growth of the Internet of Things depends on close collaboration between IoT solution providers and those who supply the underlying computing power and security. "IoT needs companies like Intel and Wind River," he says, "and they need companies like Yoga. So I'm happy we've entered into this collaboration and that we can all share in its success."