

Ersúles Cloud Platform Case Study



BACKGROUND

IoT technology uses real-time data and connectivity for providing safer and more productive environment for occupants and operationally more efficient buildings. Commercial real estate doesn't have to be valued solely on its location and capacity. Smart building intelligence solutions can improve the way people work and live.



Ersúles, creates a powerful IoT-based sensor network and provides SaaS solution of wireless, scalable building intelligence.

SoftwareMill helped Ersúles with refining their SaaS solution and enabling it to seamlessly capture data on all key environmental factors within building environment, enabling smart and real-time decision making around resource management.

OVERVIEW

Company
Ersúles, Ireland

Industry
IoT-based smart building intelligence

Challenges
Real-time data processing

Technologies
Scala, Apache Kafka, AWS

Benefits
Resource management in real-time due to improved performance of data processing

CHALLENGES

The ingestion and aggregation done by the Ersúles Cloud Platform, a part of IoT-based building intelligence SaaS solution, was creating bottleneck and slowed down data processing significantly to the point that the whole solution lost its business value.

When Ersúles engaged with SoftwareMill the company had already developed a solution that consisted of:

- a **mesh network** - tiny sensor control modules that transform standard building luminaires into smart luminaires, capable of silently collecting data on occupancy, ambient lighting, CO2, humidity, temperature, energy consumption and more.
- an **Internet of Things Gateway**, that captures and aggregates data from sensors, powered by Intel Atom E3826 processor, Intel Security and WindRiver.
- **The Ersúles Cloud Platform** - developed to utilise all of the data captured by the Ersúles connected devices and display it to the user through a simple, intuitive interface.

Sensor devices were capturing the data and transferring it across wireless sensor network correctly. The IoT gateways worked correctly, performing aggregation of the data and sending it in batches and streams to the remote device management platform. The remote device management platform was in turn taking that information and putting it into the machine stream over the AMQP and sending it to the Ersúles Cloud Platform, which was then intended to ingest the data.

As it turned out, the more data came in, the slower the system was running. The insights presented on the user interfaces were inaccurate and caused a significant delay in the system performance. E.g., processing of the data was so slow, that the action of switching the light sensors off could happen up to 30 minutes after requesting it in the application.

Benefit

THE PROJECT

SoftwareMill entered the project in a recovery stage and within 3-weeks' time was able to do enough work on the AWS-based platform, so the end-user was getting the correct information and the pressure from the business was taken off.

Software engineers worked for 8 months to actually correct and develop the platform into the product that it was originally intended to be. They improved latency of the lightning to real time and reduced maintenance costs. Developers took the existing microservices-based system, added new Scala based modules, communicating over gRPC and Apache Kafka between them and the old part of NodeJS based system. The most vital features were corrected one by one, making the system more performant and fully test covered.

SoftwareMill developers delivered the UI and backend infrastructure. Most of the work was done utilizing Scala. The full rewrite of old not performing system was not possible due to the cost of such a solution and the fact that the building needed to be constantly operable.

Parts of the system were left in NodeJS, having there added new features, fixed bugs and improved UX. The project is still running and now focuses on implementation of new requirements and improving the Ersúles Cloud Platform.

RESULTS

Client received fault tolerant, secure and stable cloud-based software: a high-volume, real-time data transaction system. Additionally, the team managed to reduce the costs of maintaining the infrastructure.

Ersúles Cloud Platform is an essential part of Ersúles SaaS intelligent building solution that enables smarter and faster commercial decision making.

"They delivered rich technical quality at an affordable rate, SoftwareMill is a valuable ongoing partner. Their informal team structure empowers them to provide attentive customer service without sacrificing timeliness. Customers can expect an enjoyable engagement with an agency committed to success."

ELLIOTT MURPHY-KERRY, COO @ERSULES



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We believe that focus on quality, self-improvement and a true engineering approach can result in systems that do their job, bring value to clients, help them scale and grow.