



AN INFLUXDATA CASE STUDY

# Uses InfluxDB Cloud to Build an IoT Platform for Generating Business Value

**Reinhard Nowak**

CEO, LineMetrics GMBH



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## Overview

As industries reinvent themselves through IoT and companies race to put IoT applications to work for their business, there is a genuine need for an IoT platform that creates business value without requiring a large budget or IT support. This is what led LineMetrics to develop a plug-and-play asset monitoring IoT platform that connects to any type of sensor to make it easier than ever to gain insights into KPIs like number of parts produced, most common downtime reasons, storage conditions, and energy consumption. LineMetrics uses InfluxDB as the for their IoT platform to capture, store and aggregate sensor data in real time.

The LineMetrics platform provides easy, pay-as-you-go sensor-based optimization for businesses. It enables plug-and-play monitoring “as a service” for all, anywhere in the world, with no IT complexity, no upfront cost, no project management needed. At the heart of their solution, LineMetrics use to gather metrics and events from their customers' sensors, graph the data in their cloud and send information and threshold-based alerts to their mobile app for customers to take appropriate action.

## About LineMetrics

LineMetrics GmbH (Haag, Austria) is the developer of a complete real-time asset monitoring solution delivered through its end-to-end IoT platform. LineMetrics enables users — for a small monthly subscription fee and without the need for IT expertise — to view sensor data in real time. LineMetrics IoT monitoring “as a service” can be used with almost any vertical manufacturing, energy, retail sensor — a true plug-and-play solution that drives data-driven decision-making and enables new efficiency levels and new business models.

The LineMetrics product is used by hundreds of customers in over 8 countries and stands for simplicity and versatility. The company was recently named "Born Global Champion" by the President of the Austrian Federal Economic Chamber, Dr. Christoph Leitl, and State Secretary Dr. Harald Mahrer.



LineMetrics Cloud

LineMetrics Box

LineMetrics Wireless

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*We need to get more information out of the data, to stay one step ahead. That's our core value – to keep it simple and smart. That's why we love InfluxDB. Because it takes away all the pain of low-level complexity. We can build on it and focus on customer use cases.*

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**Reinhard Nowak, CEO**

### | The business problem

As a startup, LineMetrics had to adapt to market requirements fast. They wanted to meet customer demand for connecting assets and accessing sensor data to become more efficient and offer new digital services. Since only what is measured can be improved, customers wanted a way to continuously monitor their assets without a large investment or IT knowhow. LineMetrics set out to develop a monitoring platform that makes it really easy for customers, across industries in various use cases, to acquire any type of sensor data for real-world assets in real time.

### | The technical problem

LineMetrics' search for the optimal architecture to enable real-time asset monitoring for various asset types started in 2012. They wanted to move away from huge IT-department-driven installations to a simplified mobile-enabled IoT solution. As available products lacked the desired flexibility, affordability, and simplicity, they set out to build a completely new IT stack and to turn it into a single industrial IoT solution offered as a lean expendable product.

They recognized early on that they needed a time series database but had thought that such a database would be cumbersome (InfluxDB wasn't ready for use then). As they had to build a viable product for their proof of concept quickly, they first used the MySQL stack. For Version 2 of their solution, they tried Cassandra and evaluated Druid (a distributed database) on top of Cassandra, spending months trying to force these databases into a time series role and finding the arrangement too complex to handle and maintain—without achieving the high availability, reliability or security they needed. Finally, for Version 3 of their hardware, they decided to start over by building on InfluxDB, a time series database equipped to handle time series workloads. InfluxDB enabled them to get real value faster as it was free of external dependencies, yet open and flexible enough for complex deployments, resulting in LineMetrics' launch in 2016.

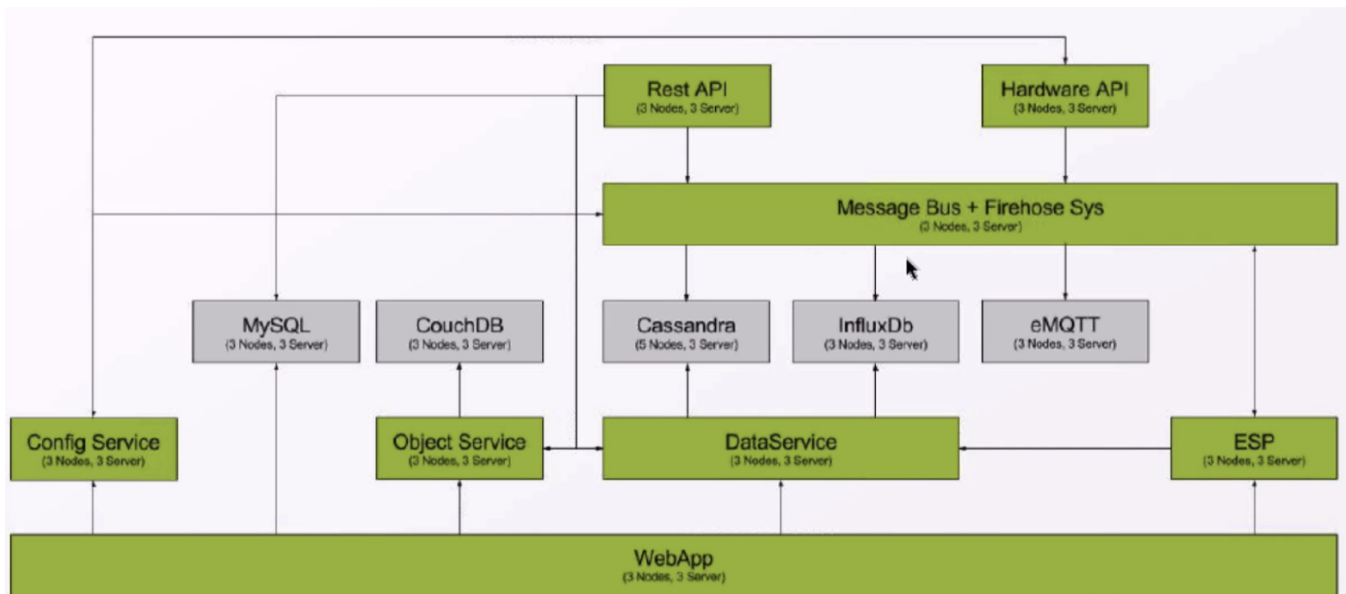
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*InfluxDB could handle every asset monitoring example thrown to our tech guys. It was so easy to use right out of the box — especially for querying time series data and handling its different types.*

## The solution

In LineMetrics' use case, InfluxDB serves as the major storage system which stores all of the data.

### InfluxDB at the Heart of LineMetrics Architecture



LineMetrics' IT stack has the ability to gather sensor data and push it to their cloud using a PC embedded with GSM or LTE connectivity. The cloud allows them to graph the data and push the data (raw and derived) to the mobile app for their users to access. In addition, they can set thresholds so users can receive automated alerts when thresholds are exceeded (energy consumption too high, fault in a system, etc.). To access asset information and troubleshooting guidelines, users can scan the asset's QR code with the LineMetrics mobile app or use the app's live chat support.

LineMetrics IT stack consists of a M2M datalogger hardware including SIM card, open APIs and a cloud-based analytics portal:

- **LineMetrics Cloud**, hosted in LineMetrics data center, provides data visualization, allows data import via an API, and supports manual data acquisition supported via LineMetrics Mobile App to stream a continuous overview of sensor data on-the-go.
- **LineMetrics Box**, the gateway that directly acquires sensor data and streams it to mobile metrics, is embedded with Linux hardware and features 8 universal inputs for analogue and digital signals as well as Modbus RTU (RS-485) guarantee universal use. The GSM / LTE communication occurs via integrated SIM card for seamless and safe data transfer and supports 0-10V sensor data, with customized offerings for large accounts available. LineMetrics Box serves as the base station for LineMetrics Wireless sensors.
- **Line Metrics Wireless**, enabling wireless asset monitoring, allows for the establishment of a radio network. It transmits individual data from sensor to sensor then sends collected measurement values via data logger to the LineMetrics Cloud.

Coupled with LineMetrics Box and LineMetrics Wireless, LineMetrics Cloud forms a global package that matches — due to its highly competitive price and versatile functional scope — nearly every requirement. For the first time ever, sensor data of any kind and even entire production plants can simply and cost-effectively be monitored in real time. To show the right stats for the right asset (such as energy consumption data vs. temperature data), LineMetrics also built a lot of semantics under the hood.

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*InfluxDB was absolutely a game-changer in the way we deal with time series data. Our tech team is still small, but we have gained so much efficiency and can deliver feature requests to customers much faster than before.*

## Results

InfluxDB enabled LineMetrics to provide a sensor-based self-improvement platform to industrial users, delivering “Asset Monitoring As A Service” starting at just 28 euros (\$31) with no programming needed. Wherever they are, users can monitor energy consumption in buildings, machine performance, and any other assets. The LineMetrics easy-setup plug-and-play device can connect to any type of sensor. Users can register and re-configure data flow input easily via drag-and-drop editor, get readings to optimize their server settings, and add intelligence to their processes and operations.

- LineMetrics’ clients in industries from logistics to manufacture to retail demonstrate its solution’s versatility. Warehouse operators can now acquire a comprehensive overview of all operations and thereby create maximum customer value, and manufacturing staff can use production facility asset data to increase productivity and maximize product quality. Similarly, a global ice cream manufacturer can track product quality — using sensor-based analytics — from production to point of sale to avoid the risk of damaged goods and ensure consistent quality.
- To go to mass market, LineMetrics developed a partnership with Europe’s biggest electronics retailer Conrad Electronics, which resulted in a co-branded version of LineMetrics solution (CControl) enabling Conrad Electronics’ B2B industrial target users to track sensors without a large budget and without IT assistance. Currently, 100,000 smart meters are in place in Europe with the expectation for that number to double by 2020.
- LineMetrics is planning to build enhanced features to provide statistical information enabling users to drill down, correlate data, and gain more information. They plan to run Kapacitor — which integrates with InfluxDB as part of the InfluxData TICK Stack — in high-availability mode for queries, KPIs and stream processing to provide maximum value with minimum input from the customers’ end. They are also evaluating the entire TICK Stack for log monitoring and analytics.

With InfluxCloud at the heart of their IoT solution, LineMetrics are disrupting data monitoring and analytics in various industries and fulfilling their vision of “smart asset monitoring made simple.”

## About InfluxData

InfluxData is the creator of InfluxDB, the leading time series platform. We empower developers and organizations, such as Cisco, IBM, Lego, Siemens, and Tesla, to build transformative IoT, analytics and monitoring applications. Our technology is purpose-built to handle the massive volumes of time-stamped data produced by sensors, applications and computer infrastructure. Easy to start and scale, InfluxDB gives developers time to focus on the features and functionalities that give their apps a competitive edge. InfluxData is headquartered in San Francisco, with a workforce distributed throughout the U.S. and across Europe. For more information, visit [influxdata.com](https://influxdata.com) and follow us [@InfluxDB](https://twitter.com/InfluxDB).



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