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ONICA
a rackspace technology company

Customer Case Study – Industrial Safety

Blackline Safety optimized efficiency and output by investing in the cloud

In the midst of a pandemic, Blackline Safety was able to balance critical software innovation and platform improvements while supporting their expanding customer base.

Our customer

Blackline Safety is a global connected safety leader, providing wearable safety technology, personal and area gas monitoring, cloud-connected software and data analytics.

The obstacles they faced

Blackline Safety needed a high-volume data streaming and processing infrastructure to support an expanding customer base and growing solutions portfolio while also supporting the requirements for a contact tracing reporting solution designed to keep workers safe amid the COVID-19 pandemic.

How we helped

Amazon Web Services (AWS), Amazon S3, Amazon Redshift, AWS Lambda, Amazon Kinesis, Amazon EMR and Delta Lake.

What we achieved together

Onica, a Rackspace Technology company, successfully helped Blackline migrate from its conventional data ingestion and database storage to a contemporary AWS infrastructure that will support its future growth and innovation.

blacklinesafety

Transforming industrial safety

Blackline Safety is a global connected safety leader, providing wearable safety technology, personal and area gas monitoring, cloud-connected software and data analytics. Since the launch of its first G7 cloud-connected safety wearables in 2016, Blackline Safety has experienced rapid growth — expanding into new markets and growing its employee count from 80 to more than 260. As its user base expands, Blackline delivers services to an increased number of customers who seek to leverage data across all aspects of their organizations. This growth has driven the creation of the Blackline Vision data science team as well as a suite of services that help businesses get the most from their digital transformations.

Balancing growth with innovation

With an ever-expanding customer base and portfolio of solutions, Blackline Safety now manages more data than ever before, all of which needs to be processed in real-time to provide customers with insightful analytics about their business. As a result of this rapid growth, Blackline recognized that limitations of their current architecture may arise if not addressed. They needed assistance with Amazon Web Services (AWS) platform expansion to efficiently process data from a growing number of products in the field combined with a planned increase of data reported from each connected wearable.

Compounding Blackline's challenge of managing a growing stream of data from connected wearables, 2020's COVID-19 pandemic introduced new urgency for the project. Early in the year, Blackline collected client interest regarding its need for industrial contact tracing support.

While Google and Apple announced their collaboration efforts to support a comprehensive smartphone platform, these consumer devices were not certified intrinsically safe and could not be taken into refineries, power plants and many other industrial facilities. To keep employees safe and healthy in an office or out in the plant, Blackline leveraged its intrinsically safe employee wearables, along with cloud-hosted software and data analytics to provide automated reporting and visualizations to support contact tracing investigations in the industrial workplace.

“Onica is a valued partner of Blackline Safety — they have helped us navigate various challenges and prepare us for the future”

John Moura – Director, Software Development and Operations, Blackline Safety

“At Blackline's stage of accelerating growth, it was becoming difficult to balance critical software innovation with the need to grow our team and simultaneously manage improvements to our platform,” said John Moura, Director, Software Development and Operations. “We knew that investing in our cloud infrastructure would support our next phase of growth, but it was critical to select the right partner with deep experience and a proven track record. We found that partner with Onica.”

Blackline realized it needed a partner with big data expertise that could help re-architect some elements of its current platform. Further, Blackline required additional resources in order to build out a data lake architecture that could support new industrial contact tracing reporting — a proprietary solution that required rapid

development for a quick deployment to help keep workers around the world safe and healthy amid the global COVID-19 pandemic.

A key challenge of the project was discovering how to support the planned increase in the data flowing in from Blackline-connected wearables in the field. To better support clients' growing needs, including industrial contact tracing, the data rate from each wearable was required to shift from once every five minutes (when not in alarm), to once every ten seconds — a 30x interval increase.

Leveraging the cloud to optimize efficiency and output

Blackline engaged with Onica, a Rackspace Technology company and a leading AWS Partner Network (APN) Premier Consulting Partner excelling in leveraging cloud capabilities to optimize business efficiency and output. Supporting Blackline's existing AWS infrastructure, the Onica team worked with Blackline to implement a solution using Amazon Kinesis and Amazon EMR to collect high-volume data streamed from G7 devices in the field via integrated cellular and satellite connectivity.

The result is a workflow designed to ingest the higher-data-rate raw messages and then enrich them to deliver high-value data in Amazon Redshift for reporting. The new solution also integrates Delta Lake, providing scalable handling and cohesive streaming of data.

With this new infrastructure, data is ingested and routed using a number of tools to preserve its integrity. It's then enriched, transmitted and assembled depending on its application, which can include contact tracing reporting, mapping of gas leaks, viewing equipment usage, visualizing alert



types and assessing equipment testing and calibration compliance.

During the project, Onica also helped set up AWS load balancers and resolved some constraints with AWS partners through online technical troubleshooting sessions.

Moving Blackline to the future

To unlock the potential for more advanced data analytics with the benefit of greater granularity, and to address the growing demands of its clients, Blackline's previous architecture needed to evolve. Onica helped Blackline migrate from its conventional data ingestion and database storage to a contemporary AWS infrastructure that will support future growth and innovation.

The Onica and Blackline collaboration had the immediate impact of enabling the deployment of higher data rate reporting from connected wearables, helping Blackline clients to make more informed decisions about their businesses.

"With the world's response to COVID-19, the need for industrial contact tracing technology to support return to work initiatives has never been greater," said Lohrasp Seify, Business Lead for Blackline Vision. "With the help of Onica, Blackline will be able to increase the quality of insights that we deliver to clients through data science and a growing suite of analytics tools."

An additional achievement of the partnership was support for the launch of the Blackline Vision Team's highly visual and interactive industrial contact tracing infrastructure to help industrial companies respond to the COVID-19 pandemic. This included reports that display maps and other visuals that highlight close interactions between

employees over designated spans of time, using data collected by their G7 wearable devices. The teams successfully ensured that information is strictly maintained for each client organization, only providing access to designated users through strict user access controls.

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John Moura – Director, Software Development and Operations, Blackline Safety

"Onica is a valued partner of Blackline Safety — they have helped us navigate various challenges and prepare us for the future," said Mr. Moura. "With Onica onboard, we knew we had the support of infrastructure experts who understood our challenges and could help us build a solution to meet our immediate and future needs, supporting our rapid growth."

About Rackspace Technology

Rackspace Technology is the multicloud solutions expert. We combine our expertise with the world's leading technologies — across applications, data and security — to deliver end-to-end solutions. We have a proven record of advising customers based on their business challenges, designing solutions that scale, building and managing those solutions, and optimizing returns into the future.

As a global, multicloud technology services pioneer, we deliver innovative capabilities of the cloud to help customers build new revenue streams, increase efficiency and create incredible experiences. Named a best place to work, year after year according to Fortune, Forbes, and Glassdoor, we attract and develop world-class talent to deliver the best expertise to our customers. Everything we do is wrapped in our obsession with our customers' success — our Fanatical Experience™ — so they can work faster, smarter and stay ahead of what's next.

Learn more at www.rackspace.com or call **1-800-961-2888**.

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