



Customer Case Study – Automotive Intelligence Industry

Spireon accelerates vehicle intelligence with managed AWS services.

To power up and scale an industry leading vehicle intelligence solution, Spireon leveraged the power of a serverless IoT platform.

Our customer

Spireon is a leading connected vehicle intelligence company. Its platform provides powerful insights to help automotive businesses run smarter – and people drive safer.

The obstacles they faced

The company's customers wanted more data volume on their vehicles. This meant Spireon's system had to scale fast to meet the increased demand for data analysis and processing.

How we helped

Professional Services – cloud infrastructure, serverless, IoT; Managed Public Cloud – Amazon Web Services (AWS), AWS Lambda, Amazon DynamoDB, Amazon SageMaker.

What we achieved together

We worked together closely to create a serverless IoT platform. This provided a range of benefits, helping Spireon provide real-time visibility and deeper insights to customers.





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Rick Gruenhagen
Spireon CTO

Safer driving through connectivity

Spireon is a leading connected vehicle intelligence company. Its platform provides powerful insights that help automotive businesses run smarter and people drive safer.

The company serves commercial and consumer segments, and supports nearly four million subscribers. Over a billion events are processed every month, including monitoring cargo status, doors, tire pressure, temperature and lift gates for the company’s Smart Trailer Solution.

This rate is projected to increase dramatically in the future. Rackspace Technology — experienced in the design and implementation of scalable end-to-end-data solutions — worked with Spireon to develop a modern solution based on Amazon Web Services (AWS).

Starting from scratch

The need for change was driven by Spireon’s customers. They wanted more data volume on their vehicles, including the ability to track — in real-time — location and load. Reliable communication between vehicles and the platform was of paramount importance.

“It’s really important to know that when an event happens on the vehicle — such as if the doors are opened or there’s an unauthorized movement — that data is going to be received by our platform and alerts are sent in real-time to our customers,” explained Rick Gruenhagen, Spireon CTO.

He added that integration with the company’s existing AWS hosted platform was similarly important, because that would enable Spireon to transform collected data into actionable insights for customers.

The move to serverless

An increase in demand for real-time data analysis and faster data processing pointed toward a serverless solution, but Spireon lacked relevant in-house expertise.

This is where Rackspace Technology entered the picture. As a Premier AWS Partner Network (APN) Consulting Partner with multiple AWS Competencies, including IoT, DevOps, and Data & Analytics, Rackspace Technology was well-placed to help Spireon meet its goals.

The two organizations worked closely to create a serverless IoT platform on AWS, the implementation of which took four months.

Moving Spireon from microservices to serverless drastically reduced the company's development time — by more than half, along with offering a host of additional benefits.

Faster data processing

Spireon's Smart Trailer sensors were previously reliant on ultrasonic technology. The new IntelliScan Cargo Sensor — a gateway device with laser infrared light sensor and optical sensors — needed a platform with faster data processing and real-time alerts.

Having connected through Amazon EC2, the sensor connection was moved to AWS Lambda with images stored in Amazon DynamoDB. Spireon also uses Amazon SageMaker to classify images from all the vehicles installed to train up an AI model that improves over time to accurately detect what is in a trailer, among other use cases.

Simplified device management

The new platform supports the provisioning and management of millions of devices where unique device certificates are provisioned and loaded on to the device through AWS IoT Device Management and Device Gateway.

Event ingestions flow through AWS IoT Core through Message Broker and Rules Engine, which routes to Amazon Kinesis Data Streams. These events are then processed by AWS Lambda for enrichment and persistence.



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Rick Gruenhagen
Spireon CTO

Reliable remote configuration

The platform allows for the remote configuration and control of devices. “We travel across borders and in the event carrier networks are offline, AWS IoT provides something called the shadow state which is really useful,” said Gruenhagen. “If we send tasks to devices that are offline, the shadow state will maintain those commands in a queue. When the devices come back online, they can execute those commands.”

The device shadow provides a reliable mechanism to manage device configuration and state information, while the message broker allows ad-hoc commands to be sent to the device.

OTA firmware updates

The platform provides sophisticated over-the-air (OTA) firmware updates through AWS IoT Core Jobs Services with the delivery of firmware update instructions and binaries to all devices. The use of AWS IoT Things Graphs allows for the targeting of devices by device type, customer, firmware versions and other parameters.

A smarter future

Spireon now has tens of thousands of trailers installed — and many hundreds of thousands of images — and is thrilled with how the project went.

“Rackspace Technology helped my team become experts in building a serverless architecture, and to be better at what we do in the IoT space through our integration with the AWS IoT platform and the incorporation of AI into our products,” said Gruenhagen. “We’re now able to provide real-time visibility to our customers and deeper insights.”

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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