



# Cowboy Migrates to AWS and Gains Scalability with Ease Using CloudNation

Ebike manufacturing company Cowboy needed to keep riders connected to provide a great customer experience but faced an uphill ride when its system couldn't scale.

## Overview

[Cowboy](#), an ebike manufacturer headquartered in Brussels, Belgium, was outgrowing its infrastructure, which could have affected the rider experience if left unresolved. It had already reached the largest option its cloud provider offered but was starting to encounter latency issues related to data retrieval. Although the company was not yet experiencing downtime or affecting availability to customers, it was clear that its systems would eventually be overwhelmed if it didn't make a change. Working with [AWS Partner CloudNation](#), it migrated to Amazon Web Services (AWS) to remove performance bottlenecks and optimize its use of resources and its costs.

## Cowboy Needed a New Path to Maintain Growth

Cowboy provides highly connected electric bicycles (ebikes) for urban riders. Founded in 2017, the company now has customers in more than 2,500 towns and cities across Europe, completing more than 1.5 million rides per month. Cowboy's bikes use smart features and cellular connectivity to provide advanced functions to users. As an anti-theft feature, the bike can alert the owner if it is being moved, jostled, or struck. The bike also incorporates a find-my-bike feature that allows users to locate a stolen bicycle. When a user logs in to the phone-based Cowboy app before a ride, the app also tells them about the bike's charge status.

Cowboy also uses connectivity to improve the safety of riders with automatic crash detection. When sensors detect a crash, the app sends a text message to the rider to check their status. If there is no response, Cowboy alerts the rider's pre-programmed emergency contact. "I think we've solved a lot of worries—those safety fears, that users might have about buying and riding a bike—with these features," says Zachary Diebold, lead software architect at Cowboy. "In addition to those safety features, our ebikes offer other capabilities that are attractive to younger riders and that produces a lot of data."

Cowboy's largest volume of data came from route tracking—including recorded routes, average speed, and ebike speed at any point. The system generated 25 pieces of data per second for every user. However, the volume of data being generated was growing too large for the company's infrastructure to manage. "We had maxed out at the top tier of our cloud provider," says Diebold. "We were going to hit our limit, so we needed a scalable solution."

## COWBOY\*

### About the customer

Founded in 2017, [Cowboy](#) is headquartered in Brussels, Belgium. The company focuses on providing highly connected electric bicycles (ebikes) for urban riders. Cowboy has customers in more than 2,500 towns and cities across Europe and the US, completing more than 1.5 million rides per month. The company has achieved B Corp accreditation, joining a global community of responsible companies that meet the highest social and environmental standards.

### AWS Services Used

- [Amazon RDS for Aurora](#)
- [Amazon S3](#)
- [Elastic Load Balancing \(ELB\)](#)
- [Amazon GuardDuty](#)

### Benefits

- Lower latency data retrieval
- Faster go to market with new features
- Improved scalability
- Cost optimization
- Better insights and control over data

Cowboy had launched its infrastructure in the cloud using a provider that offered managed services in various tiers. The tiers didn't provide the root access to servers that Cowboy wanted and provided limited access to logs. "It was a plug-and-play solution," says Diebold. "But everything was fixed, with each tier offering certain configurations. We didn't need a lot of RAM, we didn't need powerful servers, but we had to pay for the highest tier because we needed the database storage. We had a vision that was bigger than our provider and it was becoming very limiting."



## Migrating to AWS using CloudNation Delivers Scalability and Flexibility

The company approached AWS to learn how it could gain the capabilities it needed. After discussing Cowboy's current situation and ambitions for the future, an AWS representative put the ebike manufacturer in contact with AWS Partner CloudNation.

"AWS contacted us and explained the situation and, after hearing about the tight timeline, we were ready to help," says Bart Boonen, co-owner and chief technical officer at CloudNation. "Swift action was crucial. They needed something done quickly or their environment was going to affect their business. We promptly assigned two members of our team to collaborate with their team and immediately got to work."

Working with CloudNation, Diebold's team was clear about its needs. The team wanted a database that could scale and could be replicated in a data warehouse application so that it could run analysis on it without affecting performance. Cowboy also wanted deep insights into its data so it could be analyzed to drive better business decisions.

The database was migrated to [Amazon Aurora](#), a relational database management system (RDBMS) built for the cloud with full MySQL and PostgreSQL compatibility. Cowboy's solution also uses [Amazon Simple Storage Service](#) (Amazon S3), an object storage service offering industry-leading scalability, data availability, security, and performance. [Elastic Load Balancing](#) distributes network traffic to improve application scalability. The system is secured using [Amazon GuardDuty](#), which combines machine learning (ML) and integrated threat intelligence from AWS and leading third parties to help protect AWS accounts, workloads, and data.

Diebold's team didn't just gain the environment it needed, it learned how to develop what it needed. "They build infrastructure as code," says Diebold. "They were using that to start up machines on a testing space on a staging server and we would then use that to start up on production. We could see exactly what was built and then we were able to run that on the production account. We gained a lot of AWS knowledge from working with CloudNation."

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**Zachary Diebold**

Lead Software Architect,  
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## Cowboy Powered by Data-driven Decisions

Cowboy is using its new access to data to make better business decisions. It's now tracking about 30 pieces of data per second as riders use their ebikes. It can track when users needed battery assist—where the electric motor turns on to help move the bike—or when battery assist was insufficient for a rider's needs. It even uses data about where Cowboy ebikes have been stolen and where riders have had accidents to create alerts to riders—letting them know about dangerous areas.

“Seeing how people use their Cowboy in the real world helps us make good decisions about providing updates to the bikes,” says Diebold. “But it's not just technical decisions. We can track when and where riders are using their bikes and know which areas might be good to add a dealer or a service shop. We can anticipate and respond to rider needs as they develop.”

Cowboy is using this increased access to its data to help riders build a better sense of community as well. Riders can share performance data and participate in leaderboards. The company has also recently released live ride tracking, meaning riders can share details of their ride and performance live.

The flexibility that comes from building on AWS has allowed Cowboy to optimize its infrastructure to suit its needs. “We didn't have any control with our previous system,” says Diebold. “We picked a tier and that was it. Now we're able to look at our needs and optimize everything. If we have more server capacity than we need, we can scale it down. If data grows, we can accommodate it. We've gained freedom in how we run our system and a much deeper understanding of the business.”

## About the AWS Partner

CloudNation is a Netherlands-based consultancy that specializes in guiding organizations towards achieving their cloud goals. Its services cover all phases, from envisioning the possibilities to implementing and continuously evolving solutions to meet real-world needs. Its team of cloud-native engineers and consultants bring a blend of dedication, technical expertise, and experience to help businesses achieve their IT transformation goals.

