

Racing Organization Dominates NASCAR Series by Using Telemetry to Collect Data in Near Real-Time

Driving a telemetric data solution to provide a competitive edge in the racing industry

AWS

DATA ARCHITECTURE

DEVOPS

IoT

INTRODUCTION

We all know that being fast is key to winning races. What may be lesser known is that data is key to being fast. Typically, NASCAR releases telemetry data gathered from racecars within the series around 24 hours after each run. This data includes cars' speed, RPM, brake position, temperature, and, while teams could easily access the data, they couldn't get to it quickly. A racing organization headquartered in Charlotte, North Carolina, wanted to collect this data in near real-time. With the ability to instantly gather this data, they could improve various aspects of racing performance faster and more efficiently.

To gain a competitive edge in the racing industry, the client wanted to collect telemetric data in near real-time.

CHALLENGE

Our client wanted their race data access to be as fast as their cars. With the right solution, data could be available to racing teams in mere minutes instead of 24 hours after the race. That's kind of a big deal.

With the availability of data in near real-time, the racing organization could:

- Gather information on car configuration and driving tactics instantly
- Coordinate techniques and mechanical changes during practice runs
- Gain extra time needed to implement a strategy for racing performance



APPROACH

Level's mission was to team up with the client's internal engineers to ingest this telemetric data faster than the competition. This involved collecting the data directly from onboard sensor devices via an existing AWS (Amazon Web Services) Kinesis Stream managed by Toyota Racing Development (TRD).

With the help of these modern tools, the client wanted to:

- Collaborate with Level on how modern technology could improve data efficiency
- Implement this modern technology to gather real-time telemetric data
- Gain access to TRD's real-time data streaming service to find data solutions
- Execute IaC (Infrastructure as Code) as a DevOps best practice to better iterate ideas and scale effectively



Instead of accessing data from batched S3 uploads, the racing team received data in near real time through a customized data pipeline, giving them a substantial analytical advantage over competitors.

Christoph Khouri, Senior Director, Level

RESULTS

As a result of having near real-time racing data, this racing team won almost every race in the series for the next several months. If you're not first, you're last! By refreshing data every few seconds, this racing organization was able to define precisely what real-time, high impact questions to ask come race time. This was ground-breaking for the racing industry as a whole, and it allowed this team to dominate the NASCAR series.

Needless to say, they won a lot of races after this and now can:



Go fast—not just in a race car but with real-time data



Take full advantage of their data when it is fresh and most valuable



Open the door to almost unlimited analytical possibilities



Maintain a competitive edge in the racing industry

Visit us to learn more about Data Strategy.

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