Bringing Hyperconnectivity to Hypercars with MQTT and Kafka



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MOBEX



Speakers



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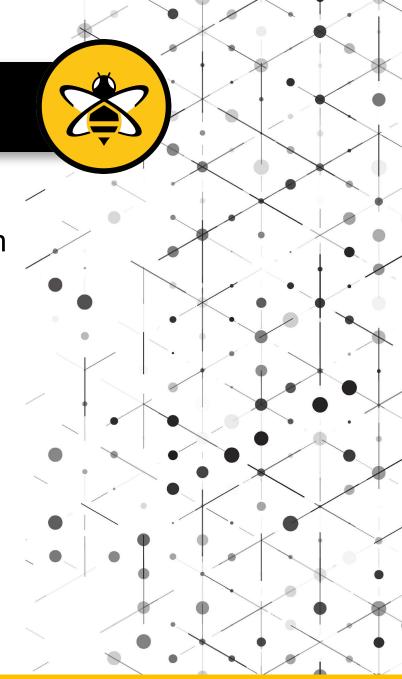


Gaurav Suman Director of Product Marketing, HiveMQ

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Introduction to HiveMQ

- A global company founded in 2012 and headquartered in Landshut, Germany.
- OEMs and Tier 1 suppliers rely on HiveMQ to create reliable connected car services that enhance the driving experience and create new revenue opportunities.
- 130+ customers trust our solution for reliable data exchange to and from end-points to the cloud and the edge.
- Raised **€49.3 million** in seed and series A funding



Our customers are...

- Building new digital products
- Improving customer experience
- Creating efficiencies
- Discovering insights

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Hypercar Connectivity with MQTT and Kafka

Luka Špoljarić, Software Development Team Lead, Backend

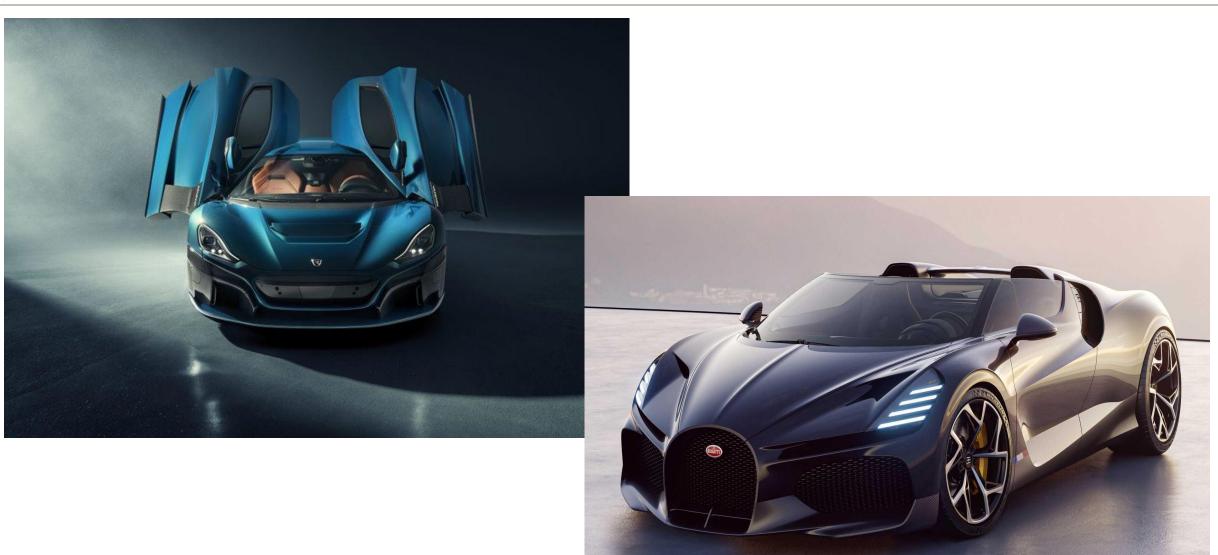
Presentation Goals:

- Expand Rimac Technology presence as a software powerhouse,
- What are we trying to build,
- How are we trying to achieve it using MQTT/Kafka and other technologies.

Rimac Technology



Hypercars

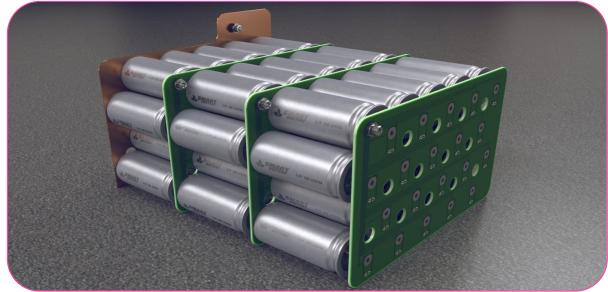




Battery Systems







TECHNOLOGY

Electric Control Units





Software

- Typescript
- NodeJS
- GraphQL
- Scala
- AWS
- MQTT
- Kafka



What are we building ?

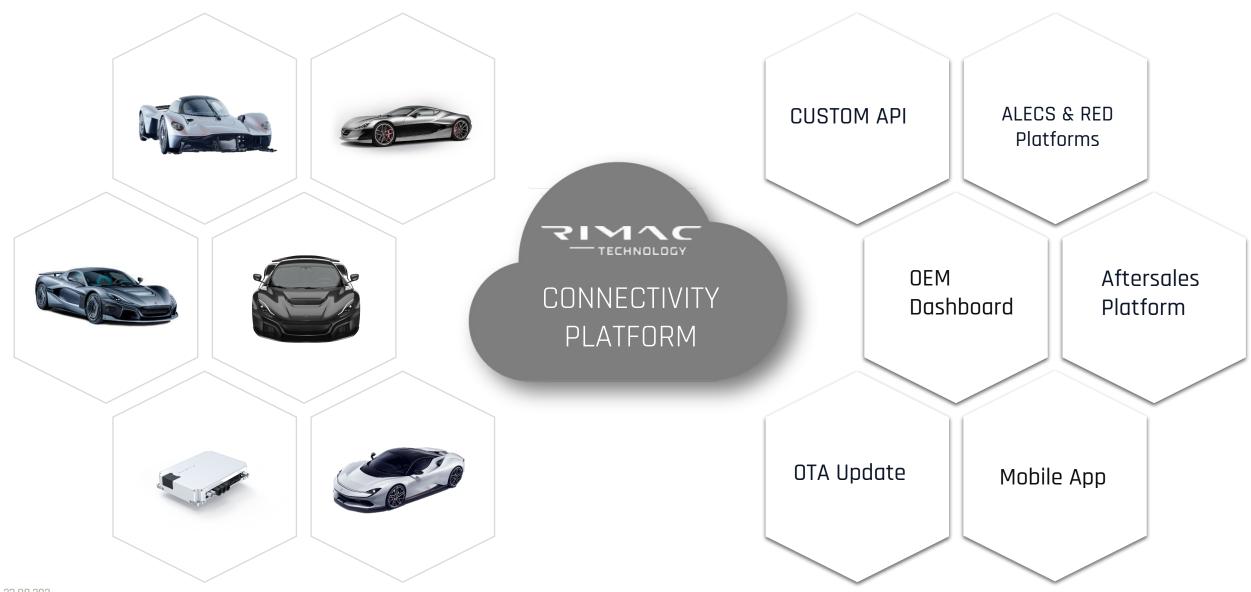




Connectivity Platform

- Two-way communication between vehicle and cloud system,
- API's to retrieve data sent by the vehicle,
- API's manipulate vehicle and its configuration.

Rimac Connectivity Platform



What problems are we solving ?



- Connect the vehicle to a Cloud System,
- Configure telemetry data options,
 - What data should the vehicle send?
 - With what frequency.
- Receive Remote
 Commands sent by the
 Cloud System

- Upload Telemetry data in near live time,
- Fault tolerant to data loss.
- Receive OTA Software Updates sent by the Cloud System

How are we building it ?



MQTT





- Lightweight and efficient
- Bi-directional communication
- Scale up to millions of 'things'
- Reliable message delivery
- Fault tolerant
- Support for Unreliable Networks



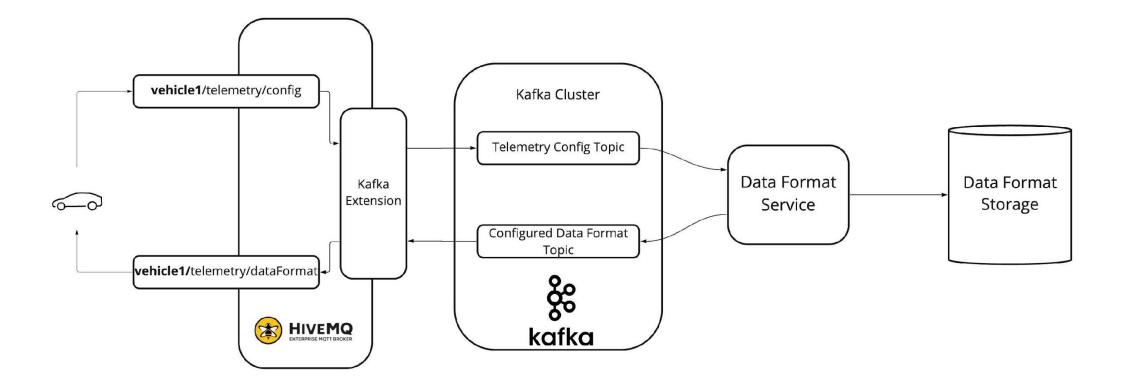


X kafka dWS

- Highly scalable
- High throughput
- Fault tolerant
- Distributed
- High Concurrency

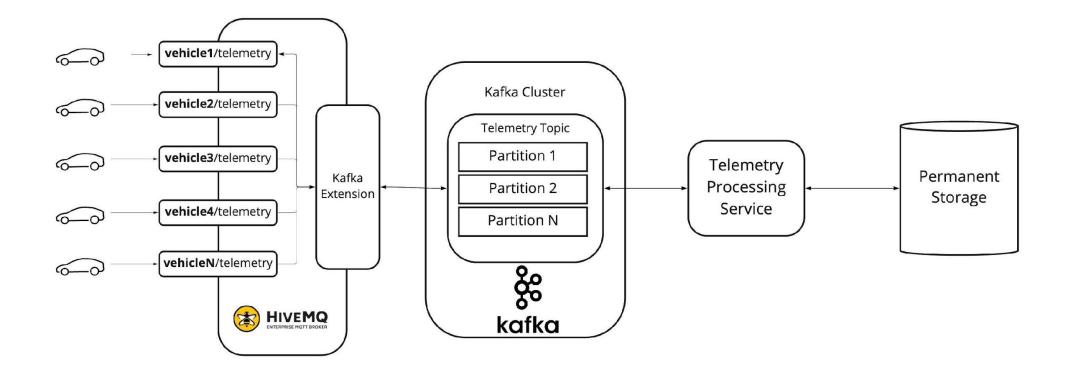


Configure telemetry options



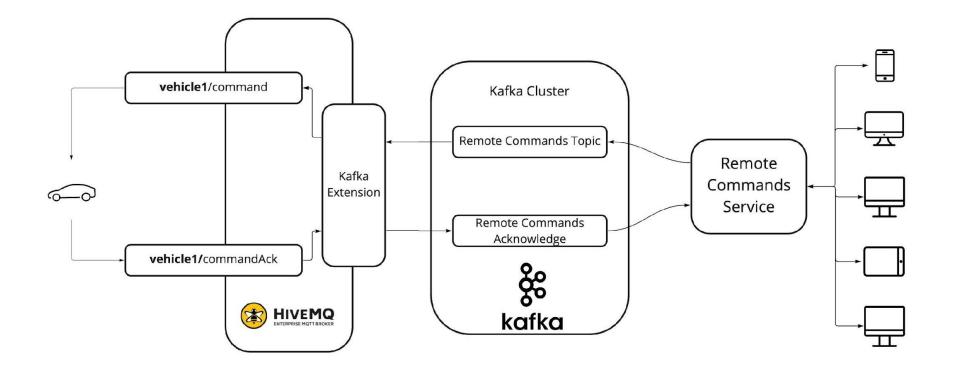


Upload Telemetry Data



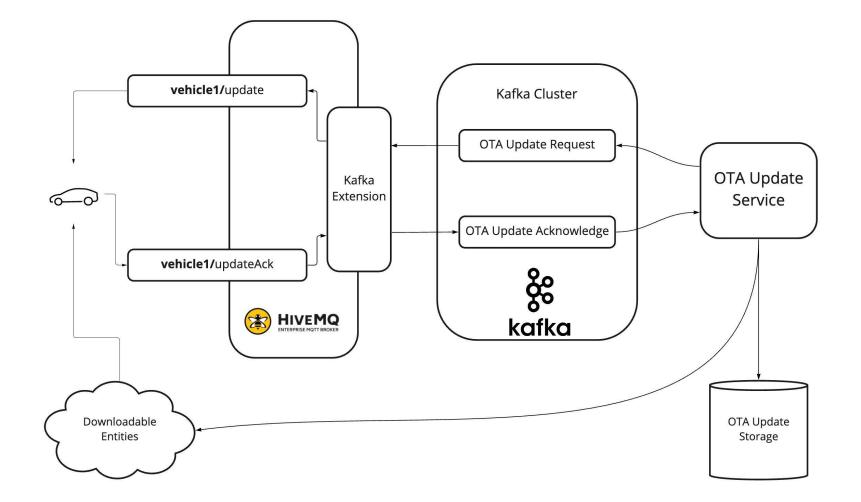


Receive Remote Commands





Receive OTA Software Updates



What can be built using this?

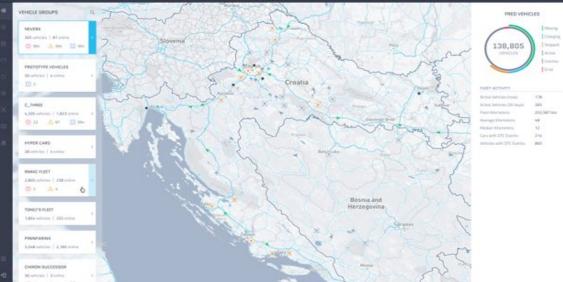
Connectivity Platform Client:

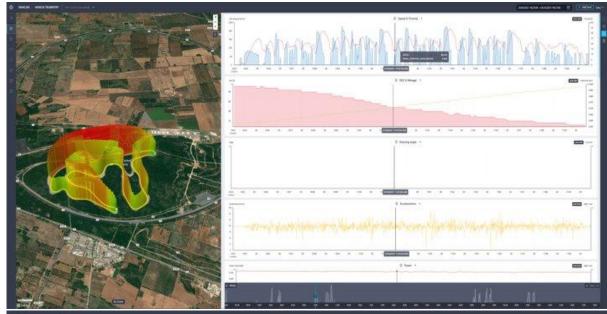
OEM Dashboard

- Fleet Management
- Analyze Telemetry data
- Manage OTA Software Update,
- Live data preview

OEM Dashboard







VEHICLES Concept_One

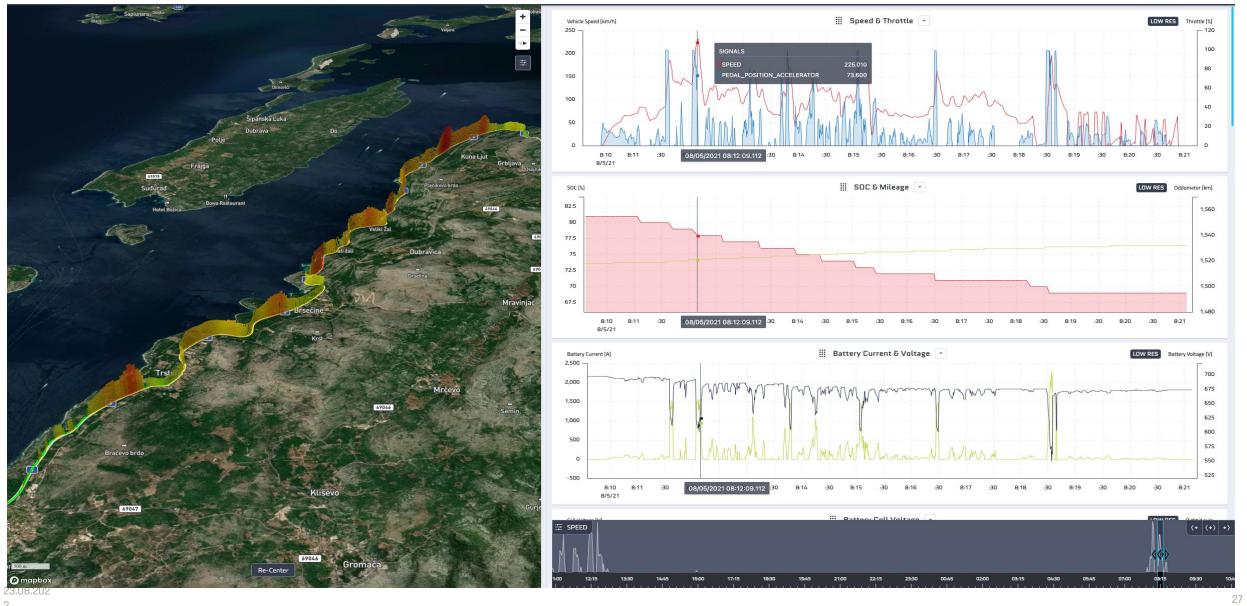


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OEM Dashboard



Connectivity Platform Client:

Nevera Mobile Application

- Preview Driving Sessions
- Preview Vehicle Health
- Execute Remote Commands





Helpful Resources



Enabling the Connected Car with HiveMQ

New to MQTT? Get the MQTT Essentials e-Book

Whitepaper | Enabling the Connected Car with HiveMQ



Get started with HiveMQ today: https://www.hivemq.com/downloads/







RIMAC TECHNOLOGY

THANK YOU

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