WEBINAR

State of IoT and Data Movement in 2023

Hosted By HIVEMQ

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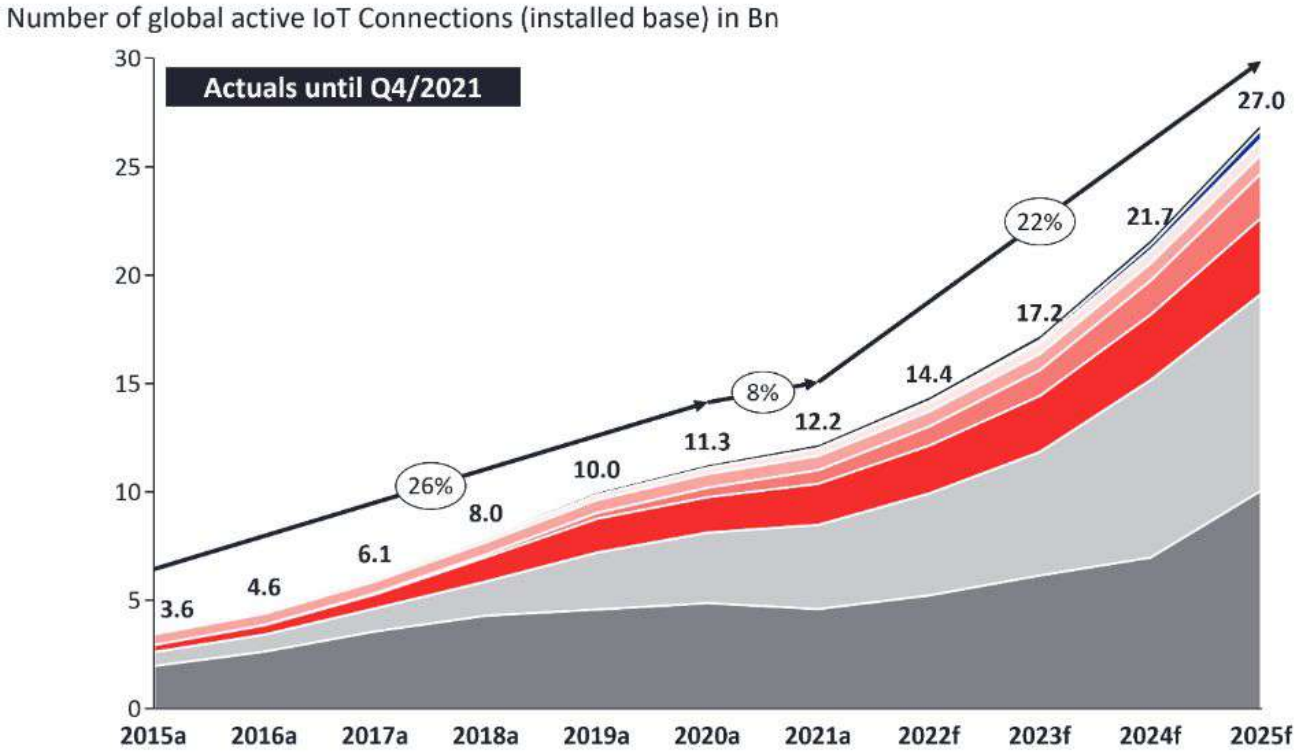
- CTO & co-founder of HiveMQ
- Member of the OASIS MQTT Technical Committee, the standardization committee for MQTT 3.1.1, MQTT 5, and MQTT-SN. Also member of the Sparkplug Working Group
- Co-author of the book 'The Technical Foundations of IoT'
- Thought leader and Conference Speaker in the IoT and IIoT Space
- University Lecturer

The Data Landscape is Changing



Source: IoT Analytics Research 2022

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SAP, IBM, Ericsson, Google:
One Common Theme in 2022

SAP IoT is scheduled to be retired as of January 31st, 2023. It will be available until the end of the current subscription term. It will not be available for renewal terms that begin after the retirement date.

Aeris to acquire IoT business from Ericsson

Software withdrawal and support discontinuance for all versions of IBM IoT MessageSight and IBM Watson IoT Platform - Message Gateway

Google Cloud IoT Core is being retired on August 16, 2023. Contact your Google Cloud account team for more information.

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Screenshot source: respective vendor websites

IoT Solving the Most Pressing Problems

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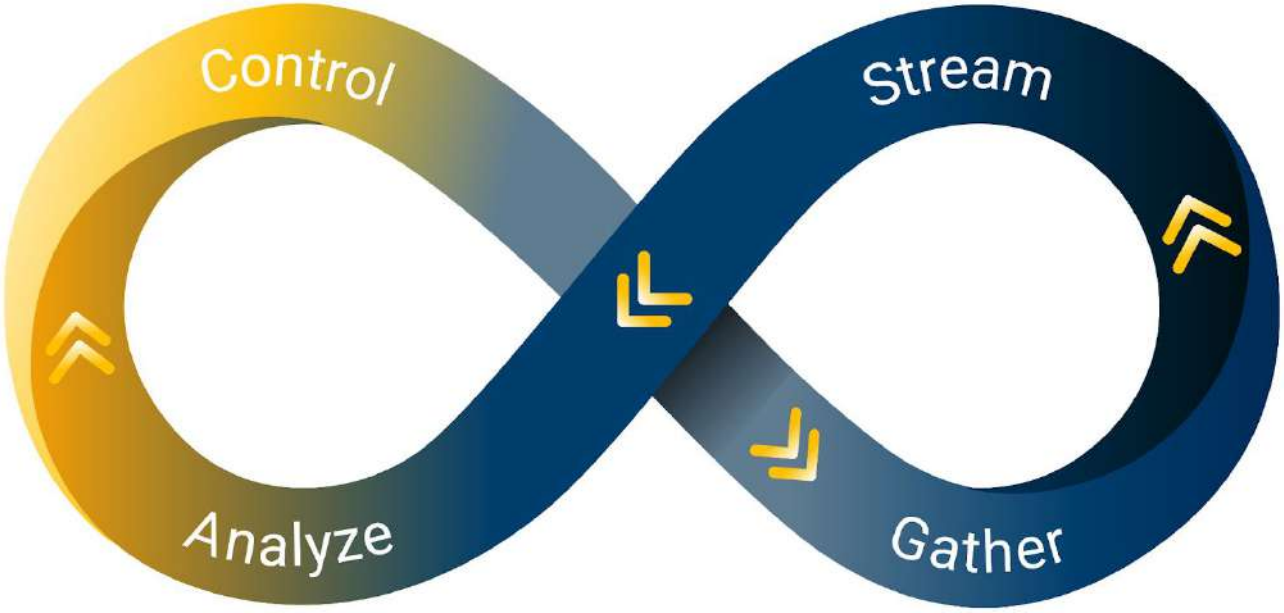
How a Data-Driven Business Operates



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The Trends Line up for a Data-Driven Business

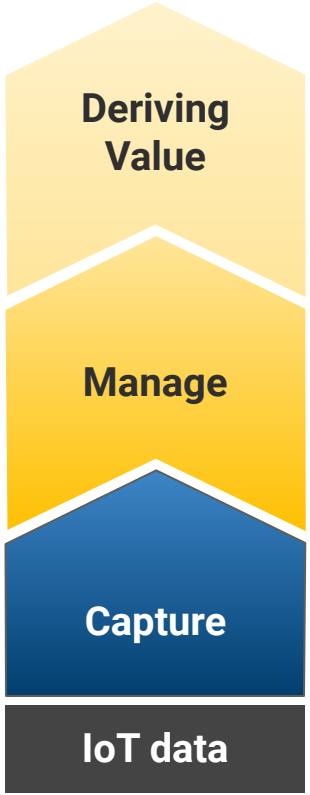
Trends

Observability and Analytics for efficiency and business models

Fully managed and governed solutions

Maturing of Multi-Cloud strategies

Adoption of integration-friendly IIoT standards and protocols



Opportunities

Find new revenue streams and efficiencies in your business

Focus your resources on your strengths

Hedge your risk and leverage cost-difference

Easy and standardized workflows to gather data from the fiel

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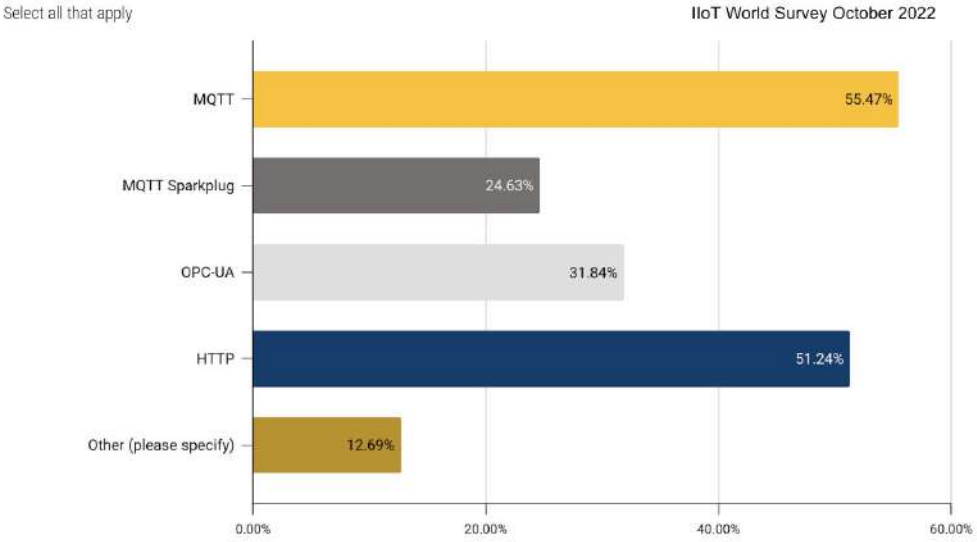
Expect this in 2023

- Adoption of integration-friendly IIoT standards and protocols
- Maturing of Multi-Cloud strategies
- Continuing focus on edge technologies
- Observability and Analytics get the spotlight
- Fully managed solutions

Adoption of Integration-friendly IIoT Standards and Protocols

Which of the following data movement tools do you consider essential to fulfill your IIoT strategy?



50% of survey respondents say MQTT is strategic to fulfill their IIoT strategy

Why MQTT leads

- Is lightweight and efficient
- Supports bi-directional messaging device to cloud
- Can scale to millions of connected devices
- Works well over unreliable networks
- Enables **Sparkplug**
- Enables **Unified Namespace**

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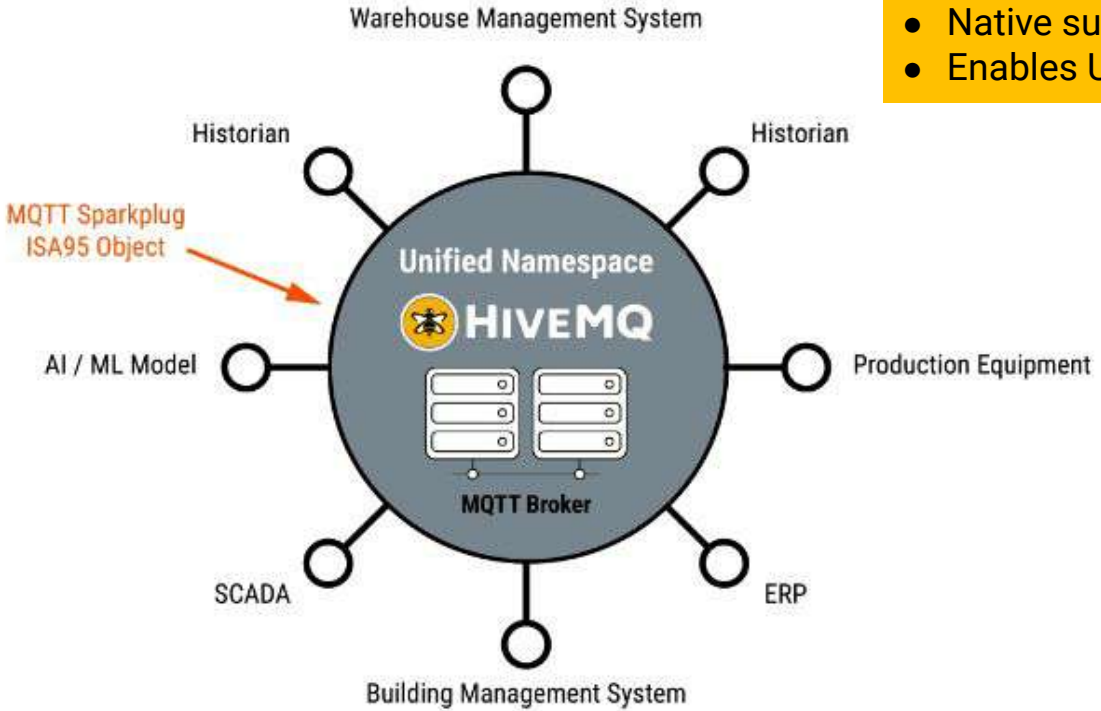
How HiveMQ Helps



- Native support for Sparkplug
- Enables Unified Namespace

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Automotive Manufacturing

Daimler Vehicle Diagnostics System (VDS)

- VDS is critical part of manufacturing process and can not go down
- If VDS goes down for >10 min, assembly line may stop
- Requires reliable messaging platform for factory to cloud connectivity

Mercedes-Benz

HiveMQ Solution

- Each instance of VDS includes multiple test devices on factory floor, connected with a HiveMQ broker located in factory
- Ensures a test device continues to behave properly if network connection is dropped and reconnected
- Fast, efficient and easy way to share information between factory floor and enterprise IT systems

Result

- Rolled out to 24 factories around the world
- 10,000 testing devices connected
- Generating 470 million messages/month

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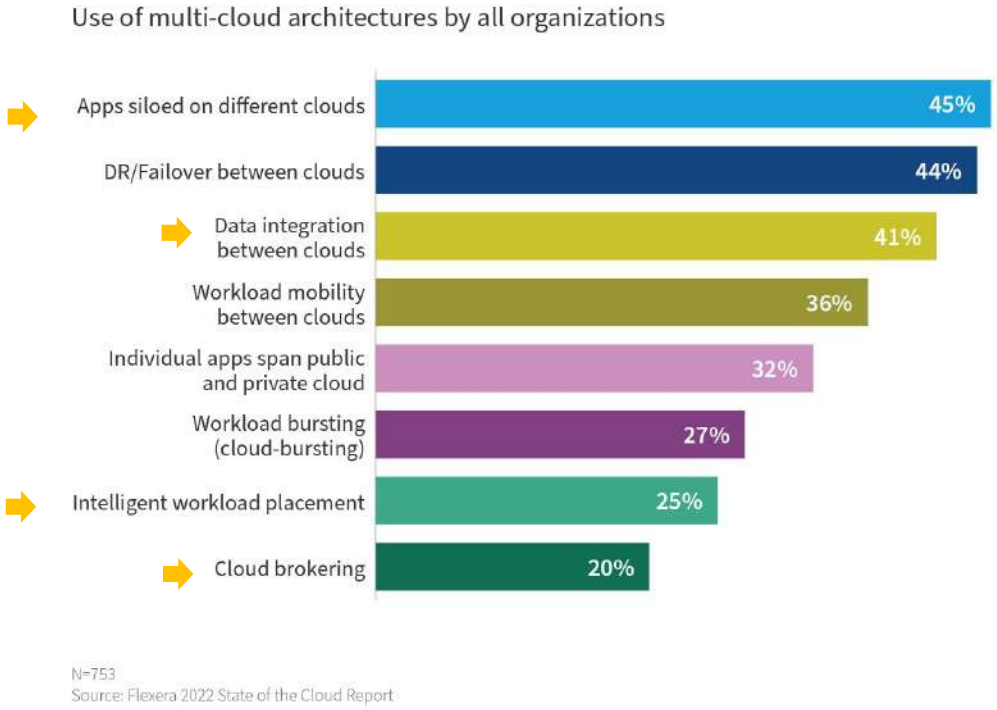
Maturing of Multi-Cloud Strategies

- Flexible provider selection
- Cost management through provider specialization
- Avoid vendor lock-in
- Access to new technologies
- Reduced single-provider dependence.



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Technology Leadership

OASIS OPEN

MQTT

- MQTT Technical Committee
- MQTT-SN Technical Committee

Sparkplug

- Sparkplug Workgroup Steering Committee
- Sparkplug Specification Committee

iot eclipse.org

- Eclipse IoT Working Group

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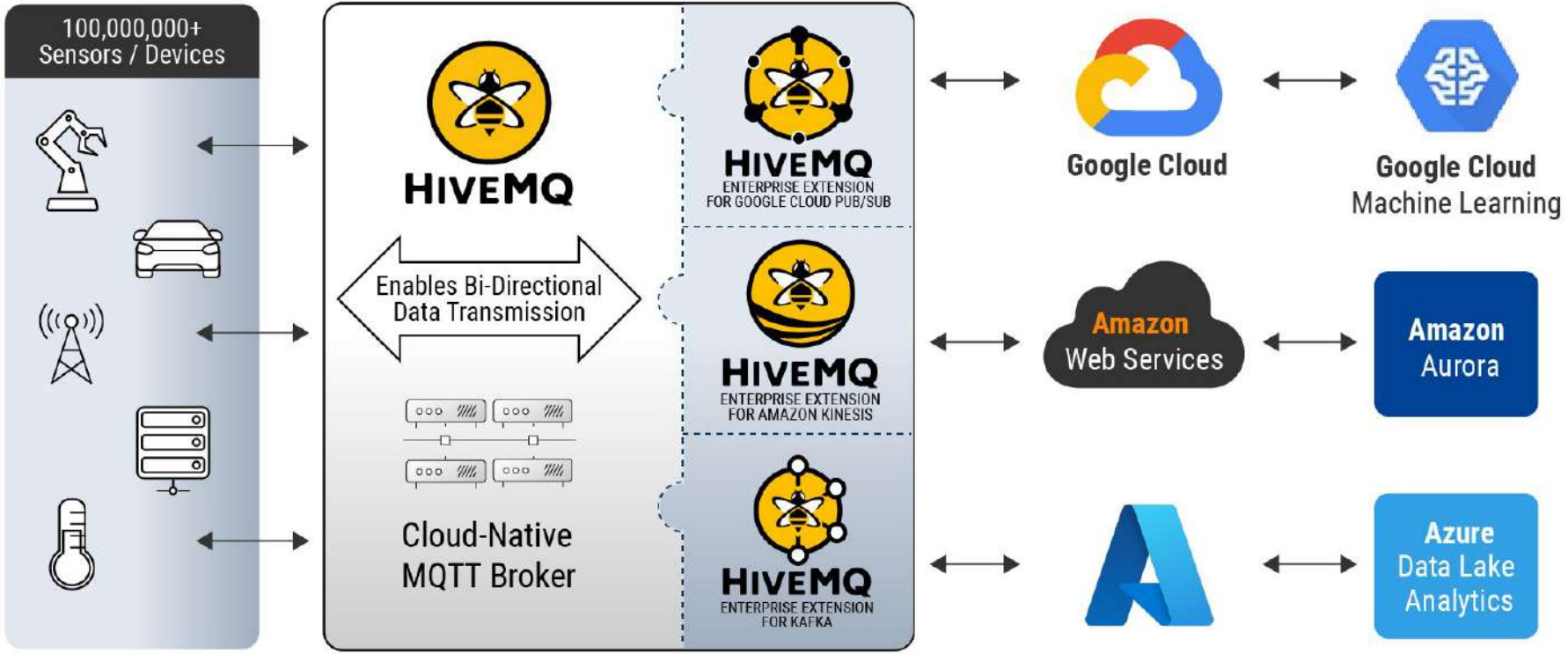
HiveMQ Enables a Multi-cloud Strategy



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Source of Data is Changing

> ***"Around 10% of enterprise-generated data is created and processed outside a traditional centralized data center or cloud."***

... By 2025, Gartner predicts this figure will reach 75%

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Edge is one of the key trends in 2023 for most industries

Trends

- Multi-tiered-architectures
- Bandwidth and data movement
- Deployment ease and scale
- Lock-in risk

Opportunities

- MQTT-SN
- Sparkplug adoption
- Open Standards
- Deployment ease and scale

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Observability and Analytics Will Take Centre Stage

Business insights and optimization

- Real-time monitoring and analysis of device and system behavior
- Multi-site comparison and benchmarking in Manufacturing

Courtesy: Rimac Technology

Overall efficiency

- Faster troubleshooting
- Find patterns to break, replicate

Courtesy: Rimac Technology

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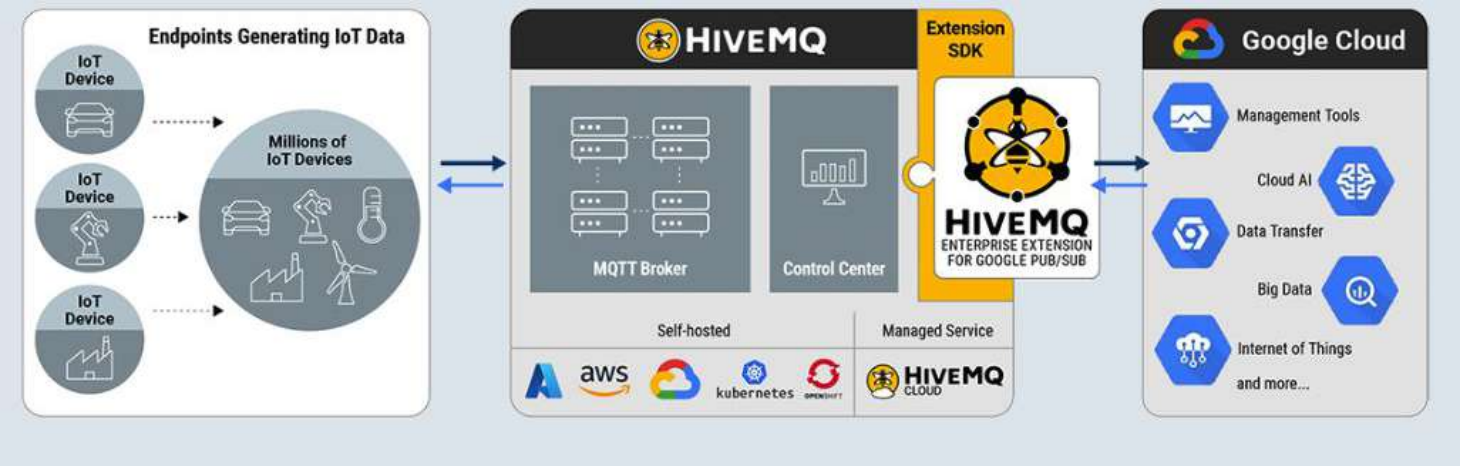
How HiveMQ Can Help



What happened + Where it happened

- Distributed Tracing
- 1500+ metrics

Analyze in real-time

- Spot patterns
- Bring best-of-breed solutions to your workflow

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Robust and Scalable Data Delivery

Rimac Technology serves as a tier-1 supplier of cutting-edge turnkey solutions to an extensive list of the world's most prestigious car manufacturers.

Challenge

- Build a highly robust, reliable, and responsive system that can handle data at a massive scale
- Scale to 10s of millions of connected vehicles
- Reliable integration with Apache Kafka - the backbone of Rimac's data transfer mechanism

Result

- Reliable two-way communication between vehicles and the cloud
- Integrate back-end systems with vehicles with 5,000+ sensors at 100/s (times per second)
  - With the goal of 1,000/s (times per second)
- Easy integration with backend systems via the HiveMQ Kafka Extension

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Why Fully Managed Solutions are Trending

- Saves and spares time and resources
- Expertise and support comes from specialists
- Reduced risk of errors and downtime
- Scalable to changing needs
- Customizable to specific requirements

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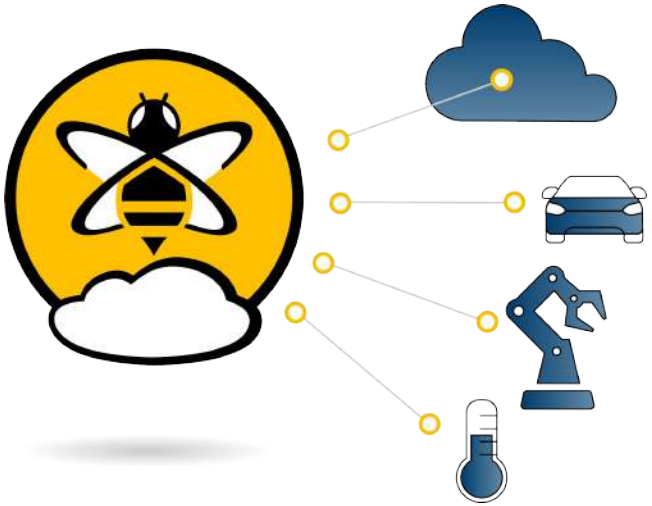

- Fully managed HiveMQ messaging and connectivity platform
- Highly available & scalable, option of running on dedicated infrastructure
- Ops-less enterprise MQTT broker that let you keep complete control over data and data flow
- Observability and deep insights into your IoT Deployment
- Integrates easily with cloud provider services, third party and custom services
- Customizable exactly to your needs
- Enterprise Grade Security

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How HiveMQ Can Help in 2023

- Scale: (Upcoming) Native and deep support for MQTT-SN
- Save: Sparkplug-aware broker helps minimize data/bandwidth needs
- Portability: MQTT 3.1.1. And 5.1 (open standards based)
- Simple: Broad variety of client libraries to shorten the learning/deployment process

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Recap

Trends

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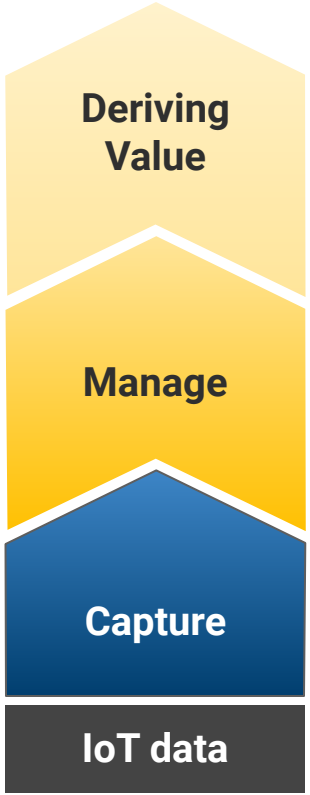

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2023 The best year to start your IoT journey

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Next Steps

New to MQTT?

[Get the MQTT Essentials e-Book]

Get started with HiveMQ today:

[hivemq.com/downloads/]

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THANK YOU

Feel free to reach out to us if you have any questions or if you'd like to discuss your use case.

CONTACT US

Speaker Contact Details

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