

WEBINAR

The Business Case for MQTT

Why MQTT Can Accelerate Your IoT Digital Transformation

Hosted By  **HIVEMQ**





The Business Case for MQTT

Why MQTT Can Accelerate Your IoT Digital
Transformation

Speaker



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Ian is a senior marketing and product management executive with over 25 years experience in the software industry. He has been involved in the MQTT and IoT industry for over 8 years. Previous to HiveMQ, Ian created the Eclipse IoT open source community that features MQTT open source projects.



Business Drivers for IoT Digital Transformation





Manufacturing

Improve Production Output

- Build more with same capacity

Lower production cost

- ML/AI to optimize production processes

Minimize revenue lost / Increase revenue per unit

- Less plant downtime due to predictive maintenance
- Better quality

Global Plant Awareness

- Better capacity planning, supply chain optimization

Attract next generation talent



Remote Asset Management

Update Existing Remote Command and Control

- More efficient and reliable
- Move away from older technologies

Real-time awareness of asset operation

- Regulations
- Predictive maintenance

Risk reduction through OTA Update

- Fix security issues



Transportation

Increase efficiency and reduce carbon footprint

- More efficient route planning

Reduction in theft and lost cargo

Improve customer service

- Real-time awareness of vehicle

Mobility as a Service

- Improve multi-modal integration



Connected Product



Increase Revenue / New revenue stream

Improved Customer Experience

Real-time Update of Connect Product

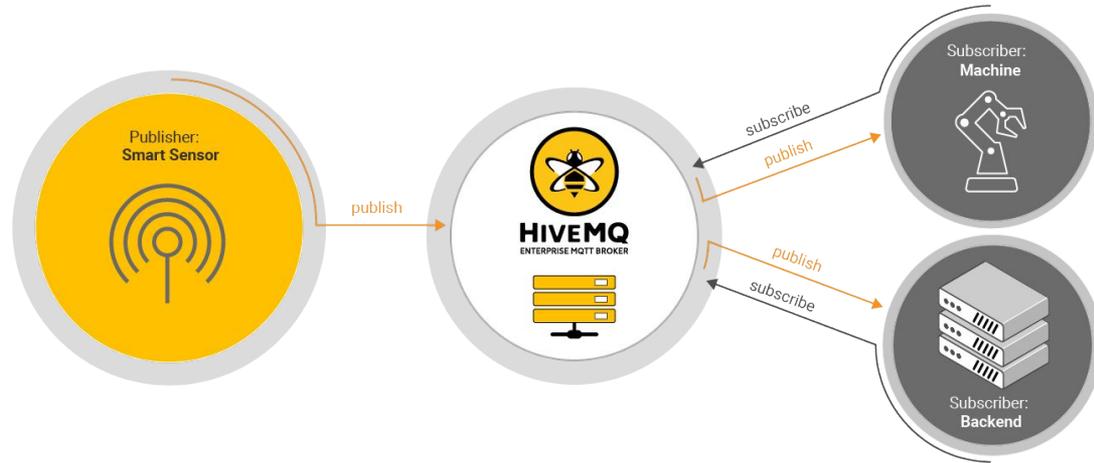
- Data delivery at scale



Business Case for MQTT



Introducing MQTT



- De facto IoT messaging protocol
- Open standard
- Publish/subscribe
- Promotes a decoupled architecture
- Originally developed for Oil and Gas pipeline monitoring

Benefits of MQTT



Lightweight and Efficient



Scalable



Bi-directional



Support of Unreliable Networks



Reliable



Security Enable

Business Benefits



Reduce Network Costs



Decrease setup time and cost



Improve Customer Experience



Decrease infrastructure resource utilization



Reduce Cost of Lost Data



Reduce Network Costs



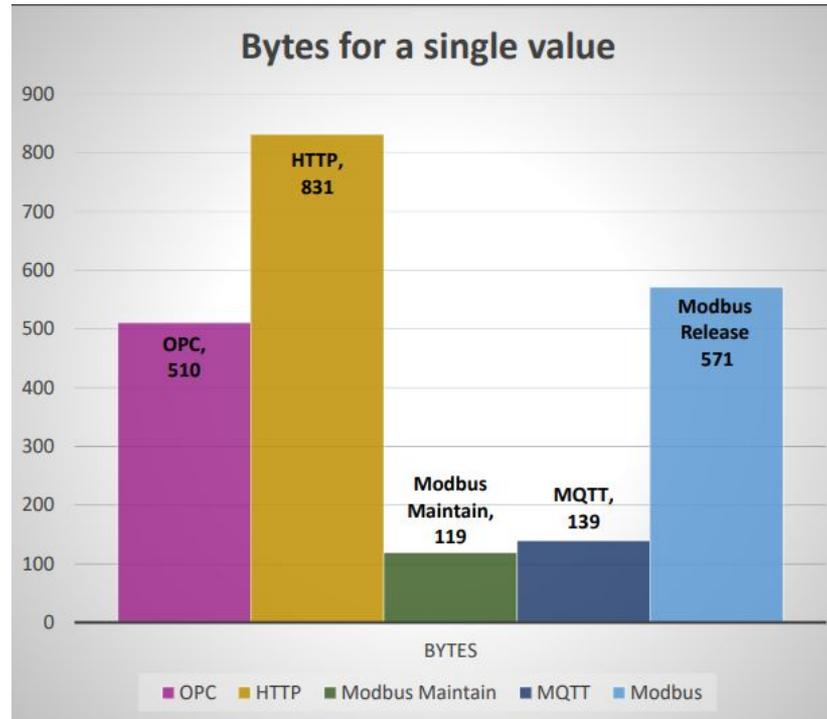
MQTT Message Size is Smaller

| | MQTT Bytes | HTTP Bytes |
|----------------------------|----------------|------------|
| Establish connection | 5572 | 2261 |
| Disconnect | 376 (optional) | 0 |
| For each message published | 388 | 3285 |
| Sum for 1 message | 6336 | 5546 |
| Sum for 10 messages | 9829 | 55,460 |
| Sum for 100 messages | 44,748 | 554,600 |

HTTP up to 10x larger

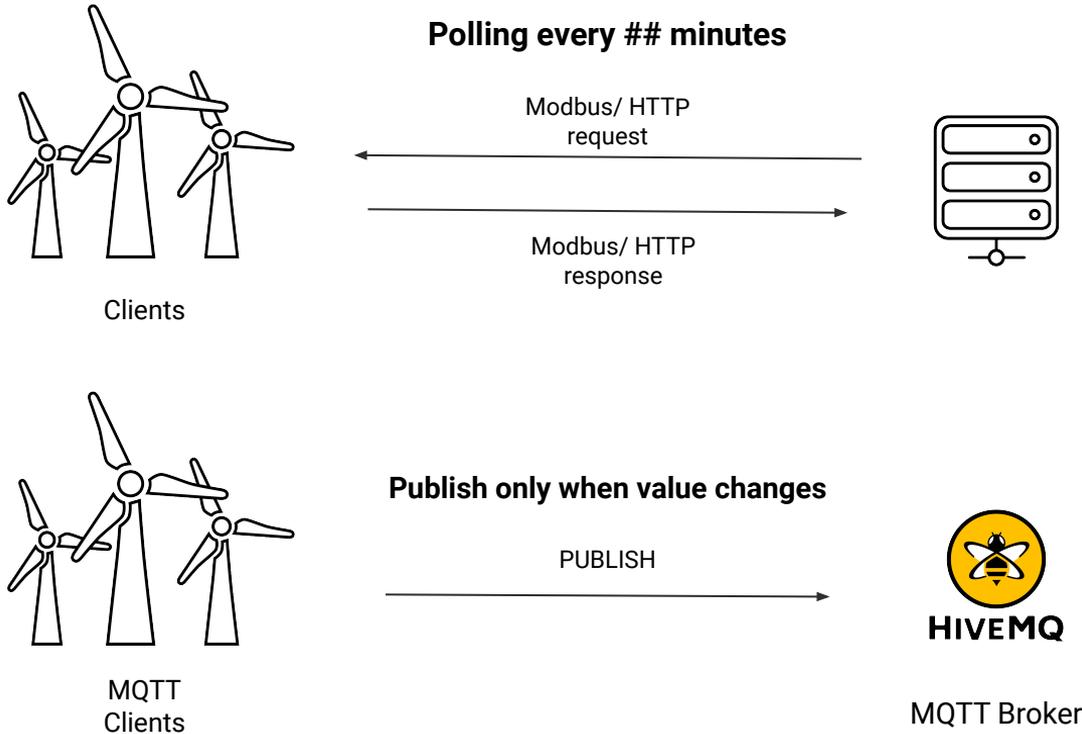
<https://www.hivemq.com/blog/mqtt-vs-http-protocols-in-iiot/>

MQTT Message Size is Smaller



<https://www.cirrus-link.com/wp-content/uploads/2019/05/Johnathan-Hottell-IIoT-Protocol-Benchmarks.pdf>

MQTT Pub / Sub more efficient than Poll / Response



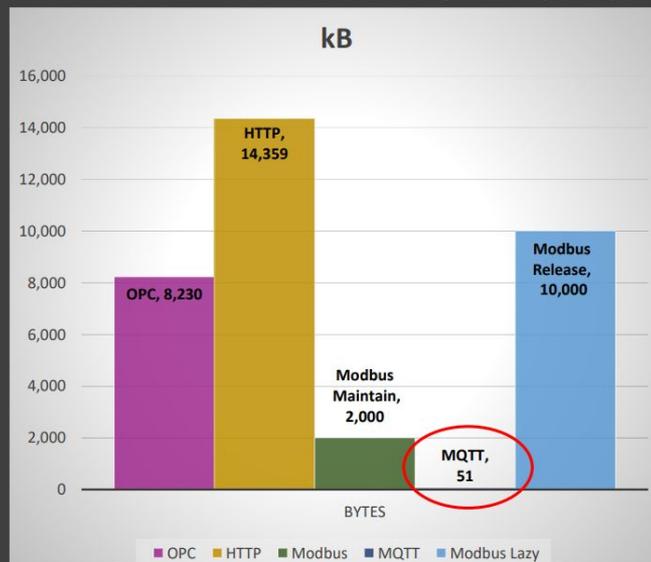
**Up to 90% Reduction
in Bandwidth**

Difference in data consumption

TCO of a days worth of 5 second data

Assuming keep-alive can be set to 5 minutes, data changes twice per day

MQTT data consumption is significantly lower than the others in this case because the data is only sent when the value changes.



Improve Customer Experience



BMW Case Study

Mobile app using SMS took up to 30 secs to unlock door. SMS is unreliable.

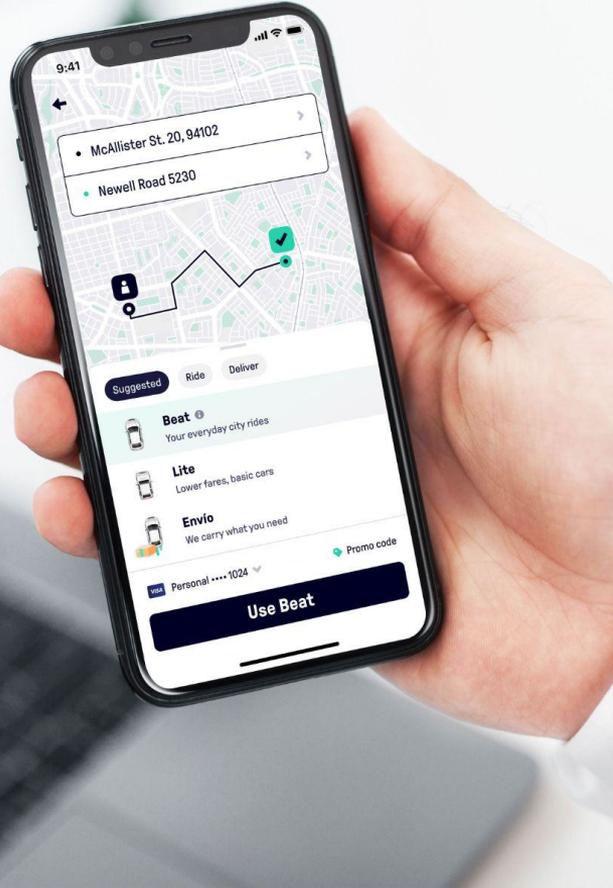
HiveMQ solution

- Always-on connectivity for all devices
- HiveMQ runs on expandable Kubernetes cluster
- MQTT is designed for network low latency and Push communication
- HiveMQ implements all quality of service levels to guarantee delivery
- MQTT saves
 - 34% network bandwidth per message
 - Up to 80% if more than 100 messages

Sub-second response to unlock car



Beat Use Case



Beat requires a high-efficient solution for its ride-hailing app to keep up with growth

- Increase in support tickets due to lost messages
- Network latency and network reliability issues

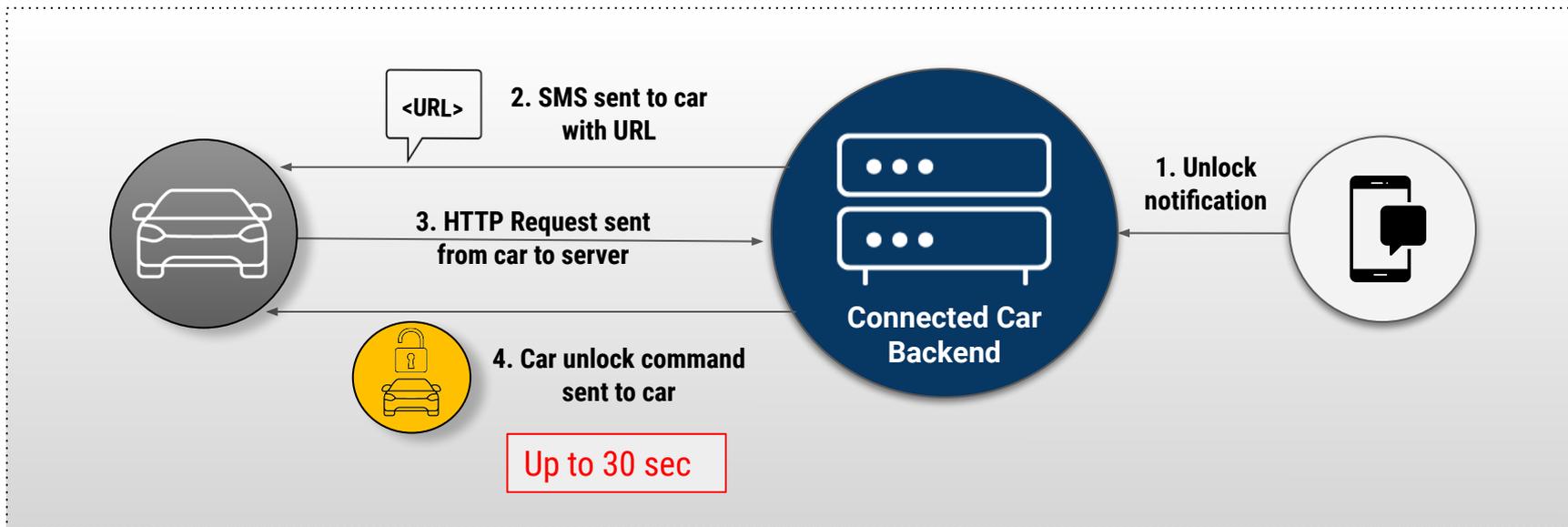
BEAT
Where next?

HiveMQ Solution

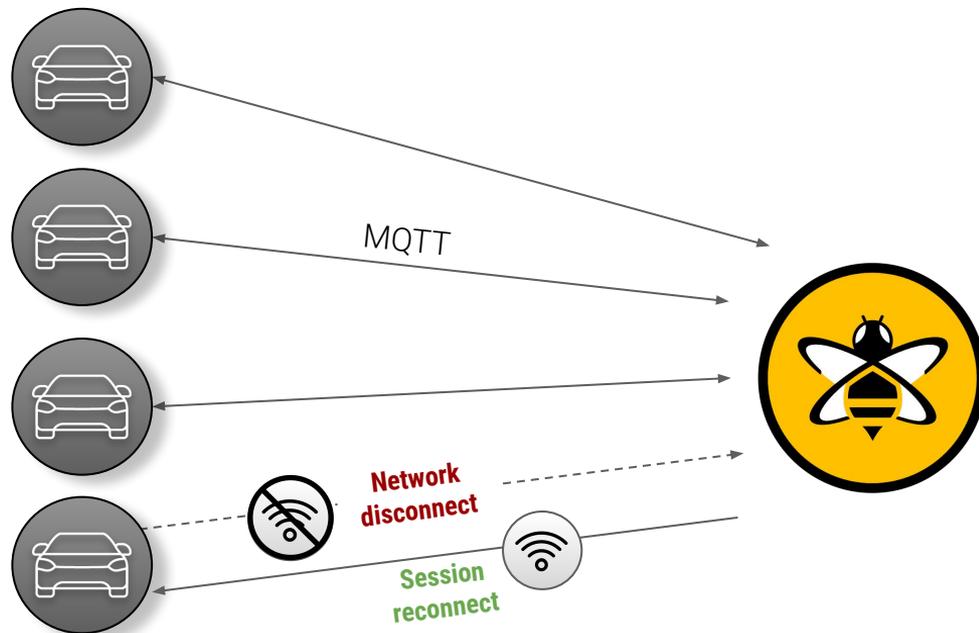
- Easy to maintain and scale
- Real-time search for available drivers
- More efficiency and reliability than the home-grown system or other solutions in the market

Reduced support tickets from drivers by 66%

Dropped Connection with HTTP



Persistent MQTT Connection



Liberty Global Case Study



Customer can control set-up box with phone in the same way as with the remote

- Building a scalable platform that can meet the new demands of customers worldwide
- Seamless customer experience across devices, networks and location-independent



LIBERTY GLOBAL

HiveMQ Solution

- Scalable platform that supports millions of concurrent client connections
- Function over unreliable networks
- Built-in security for secure communications

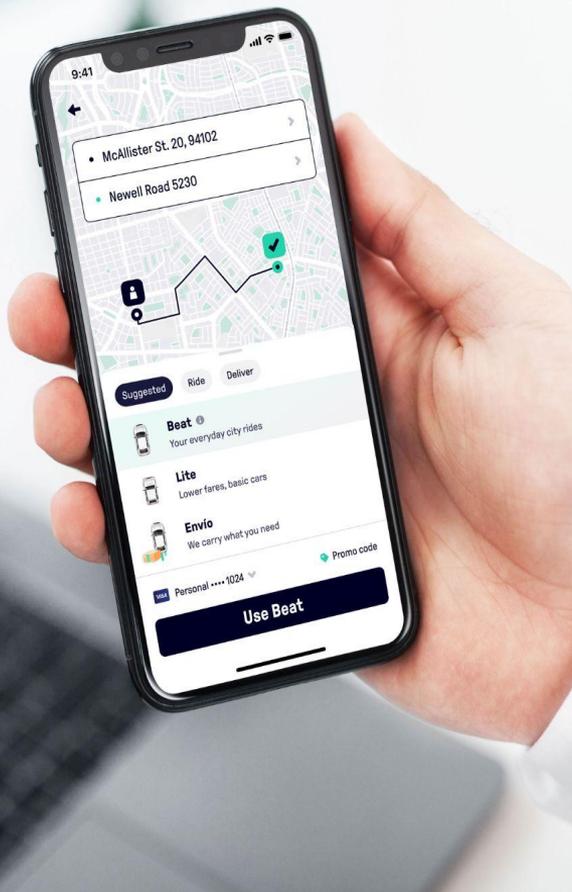
Customer satisfaction scores very high

Reduce Cost of Lost Data

What is the cost of lost data?

- ❖ Regulatory compliance
- ❖ Customer experience
- ❖ Lost revenue
- ❖ Less accurate data
- ❖ Missed key events

Beat Case Study



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BEAT
Where next?

HiveMQ Solution

- Easy to maintain and scale
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- More efficiency and reliability than the home-grown system or other solutions in the market

Messages lost reduced by up to 51%

MQTT Quality of Service Levels

QoS 0 - At most once



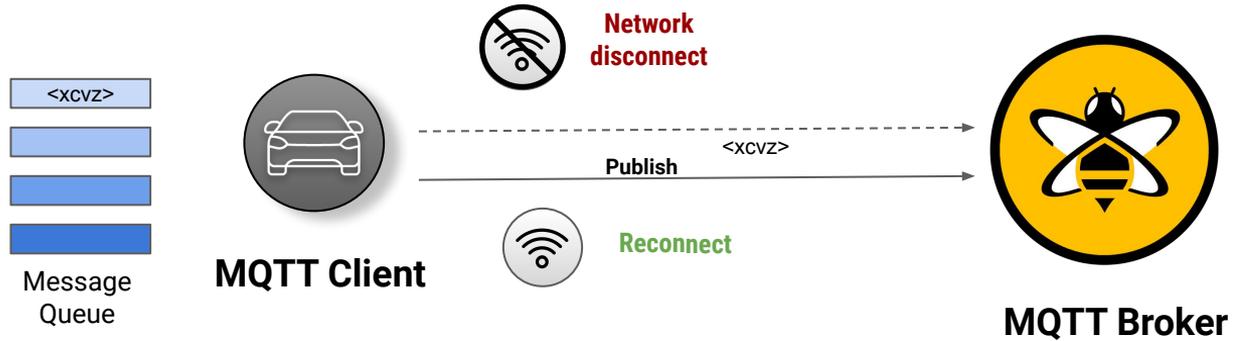
QoS 1 - At least once



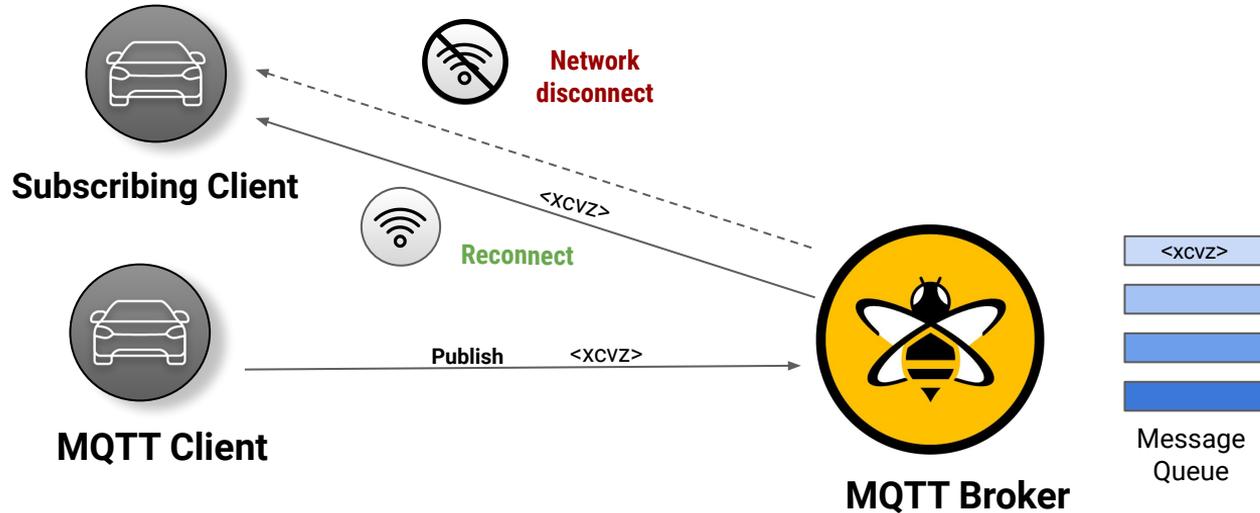
QoS 2 - Exactly once



MQTT Message Queuing

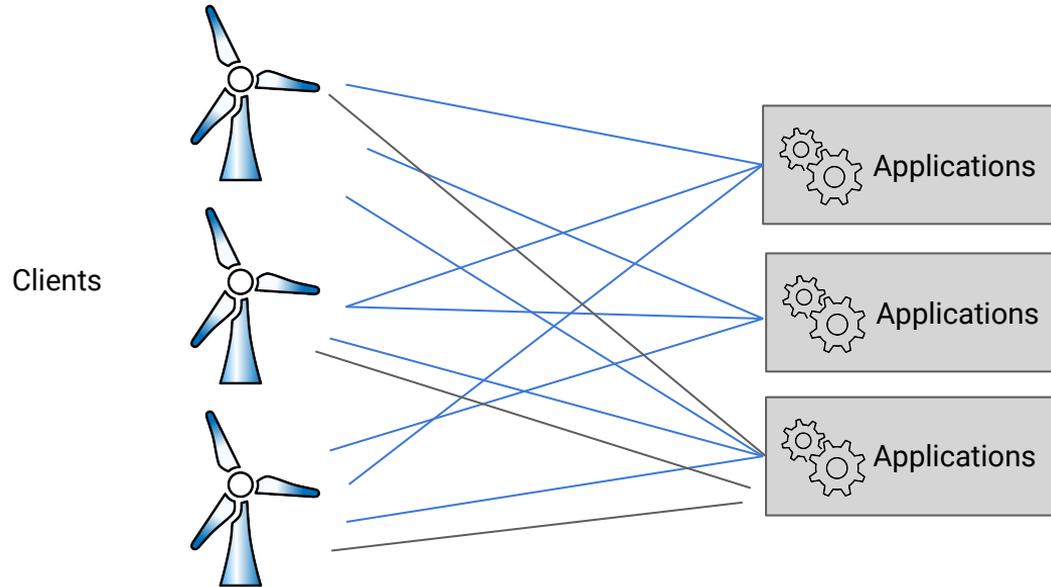


MQTT Message Queuing

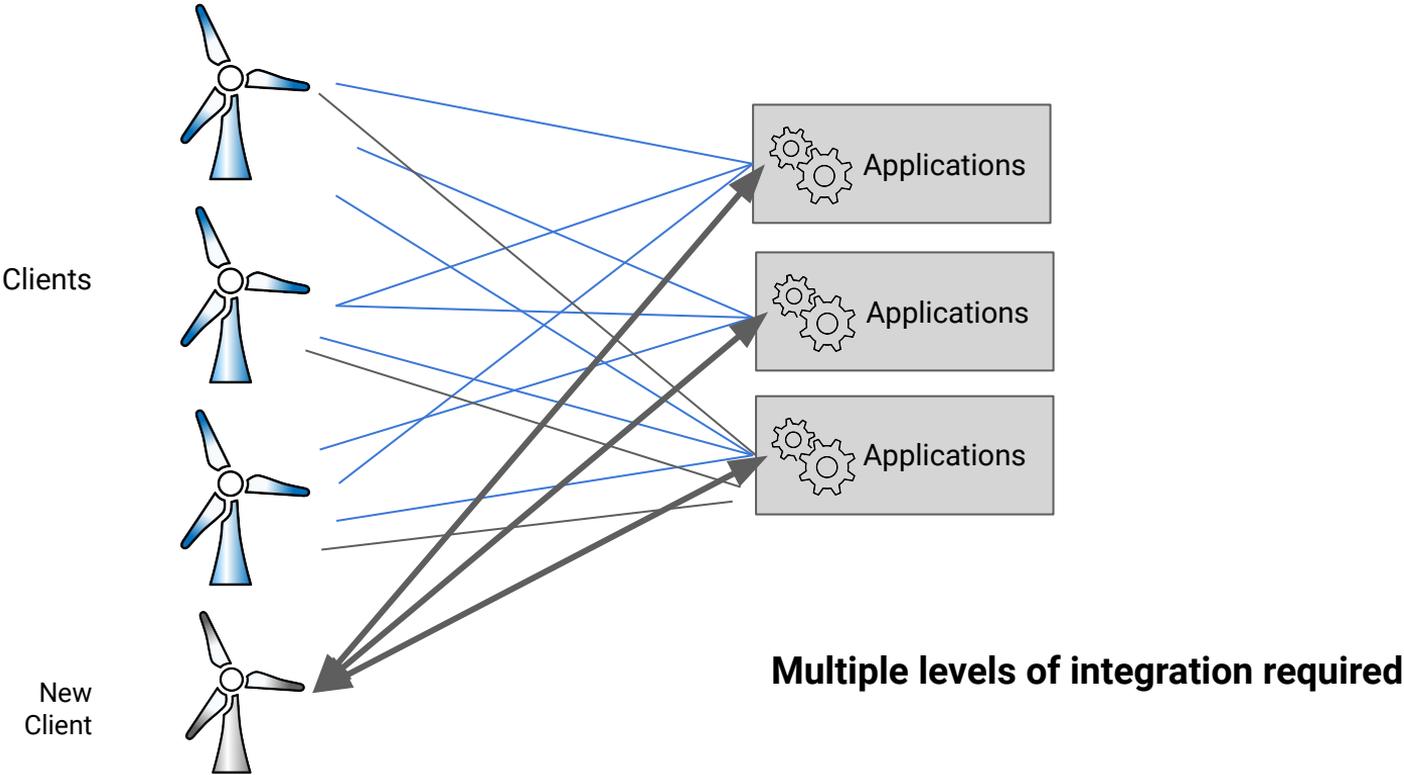


Decrease setup time and cost

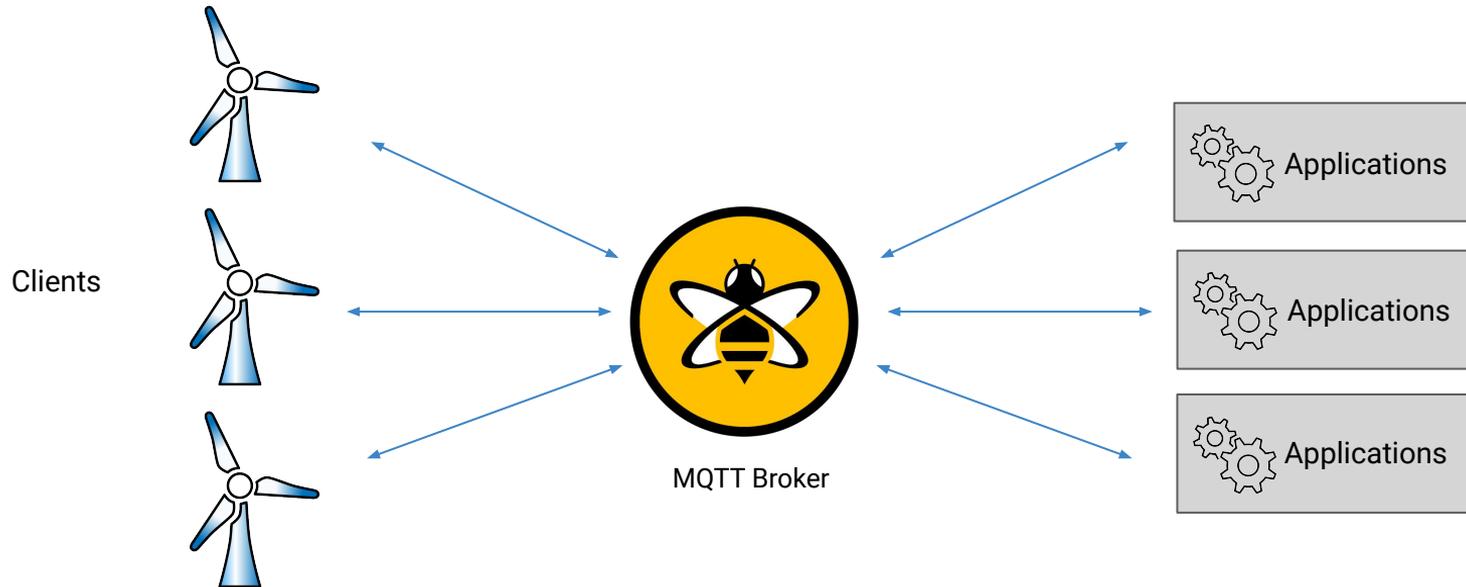
Traditional Spaghetti Architecture



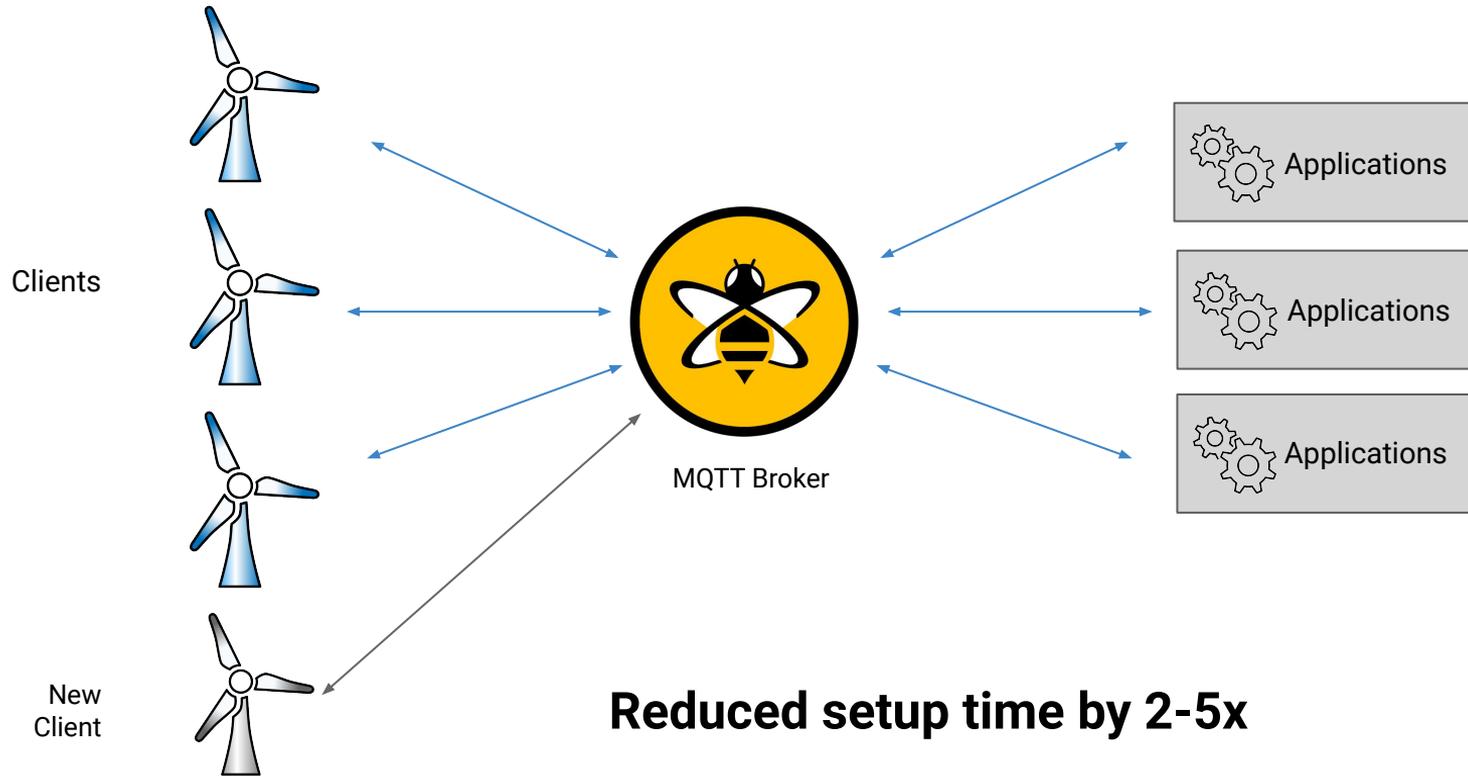
Traditional Spaghetti Architecture



MQTT Decoupled Architecture Reduces Setup Costs



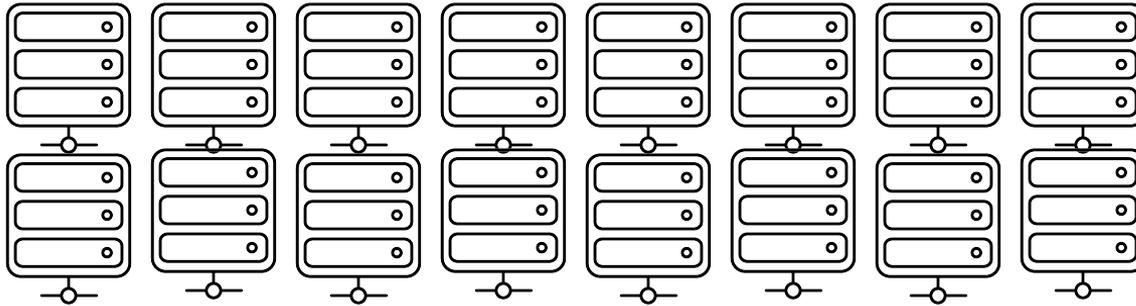
MQTT Decoupled Architecture Reduces Setup Costs



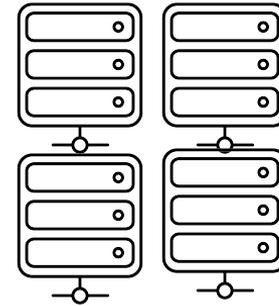
Reduced setup time by 2-5x

Decrease Infrastructure Resource Utilization

Case Study: Large Multinational



256 CPUs Required for
200K Connections



64 CPUs Required for
200K Connections

Summary

- MQTT has become the de facto IoT standard
- MQTT will drive business benefit for your IoT project
- Easy to get started with MQTT and HiveMQ



Resources



New to MQTT? [Get the MQTT Essentials e-Book](#)



New to MQTT Sparkplug? [Get the MQTT Sparkplug Essentials e-Book](#)



Want to know other HiveMQ Customer Stories? [Visit here.](#)



ANY QUESTIONS?



THANK YOU

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