What to Consider When Moving IoT Data Into Cloud Platforms

A webinar with  Hosted by 

About Me

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Introduction to HiveMQ

- **A global company** founded in 2012, headquartered in Germany
- HiveMQ helps **move data to and from connected devices** in an **efficient**, **fast** and **reliable** manner
- **130+ customers** with production IoT applications

“The three leading global hyperscalers (AWS, Microsoft, and Google Cloud) hold more than 80% market share for global public cloud services specifically for IoT workloads.“

- research from IoT Analytics

5 criteria to keep in mind for your IoT-data-ingestion strategy for the Cloud

Is this you?

“My IoT data continues to grow and I am moving it to the cloud for two reasons: a) it’s becoming expensive to keep it on-premises b) the cloud offers amazing value in analyzing my data and overall business performance.

That said, I don’t want to be at a cloud provider’s mercy when we acquire new technology at our business. I want to be able use the right cloud for the right use case.

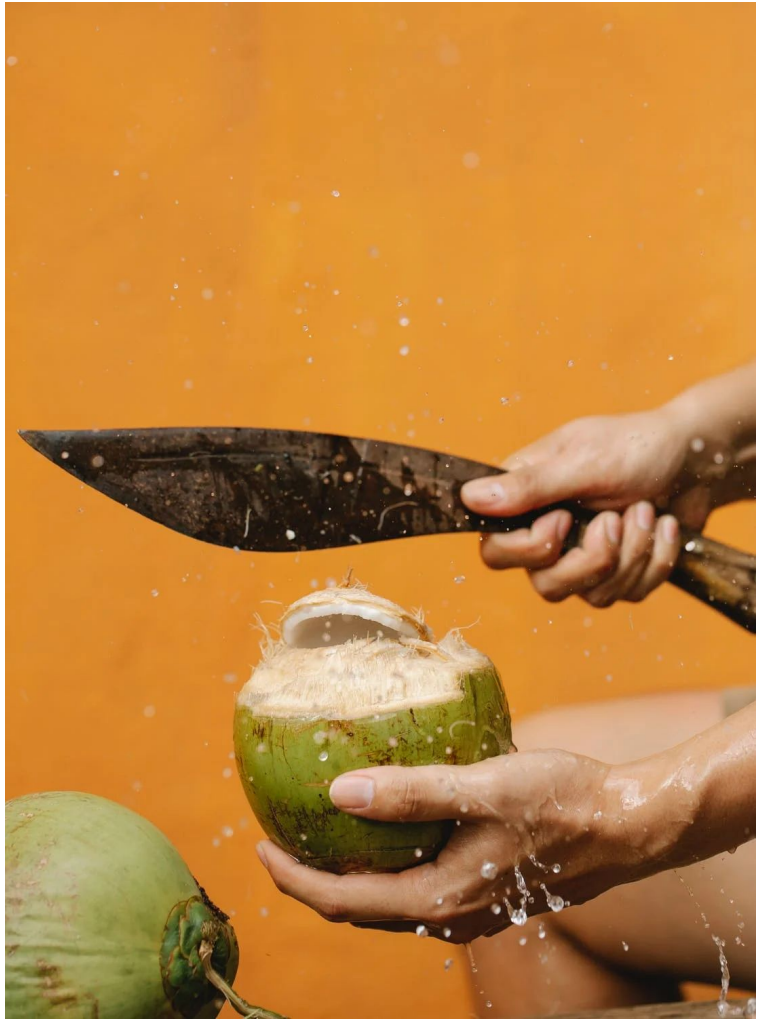
We have faced cloud outages in the recent past and we know that, while they might be a big name in the industry they can fail. I want to keep control of my business, or at least know what went wrong so I can take steps to fix it on my end.

I am responsible for building solutions that are reliable, and efficient. I will settle for nothing less from my providers.”

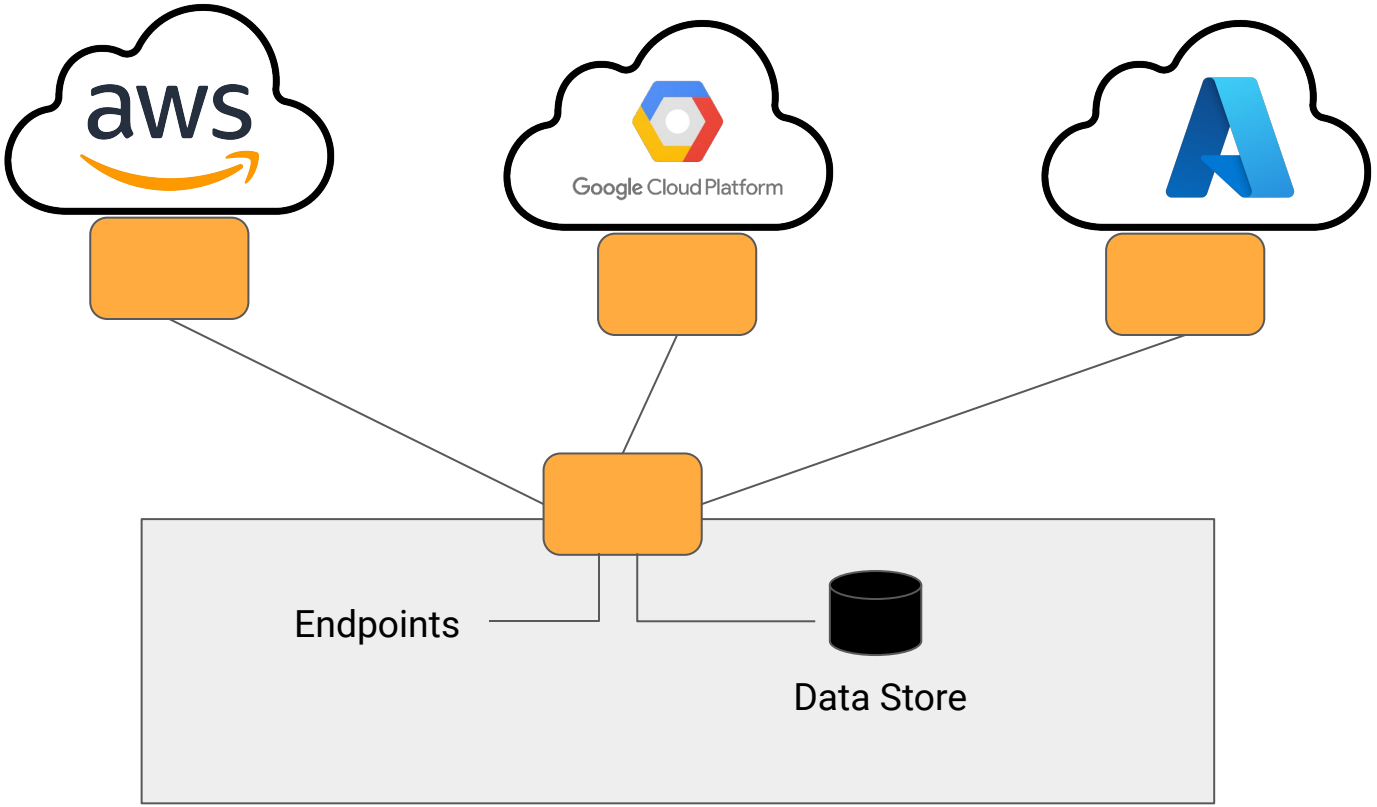
Flexibility
Efficiency
Avoiding vendor lock-in
Observability
Reliability

Flexibility

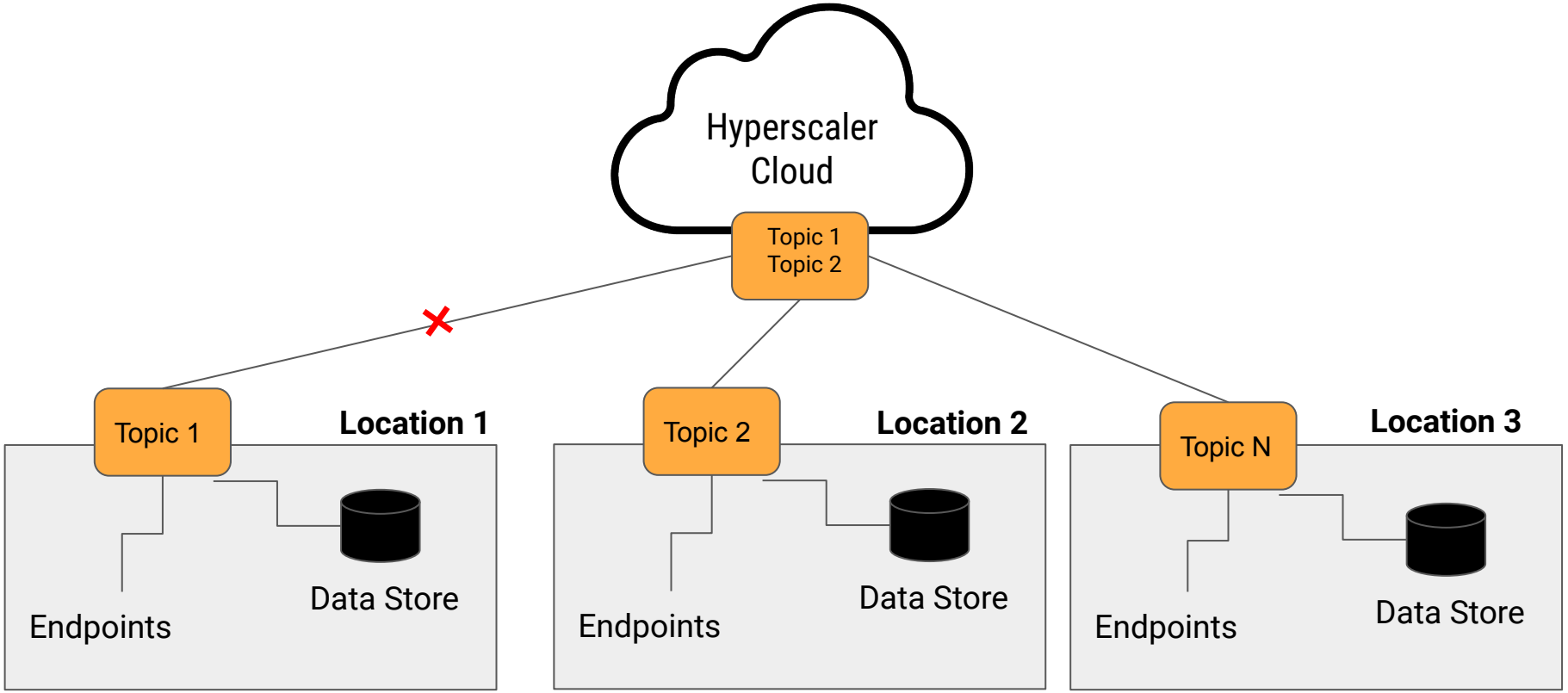
Choose exactly what you need



Choose the platform that’s right for you



Extend Cloud Services To Your Premises



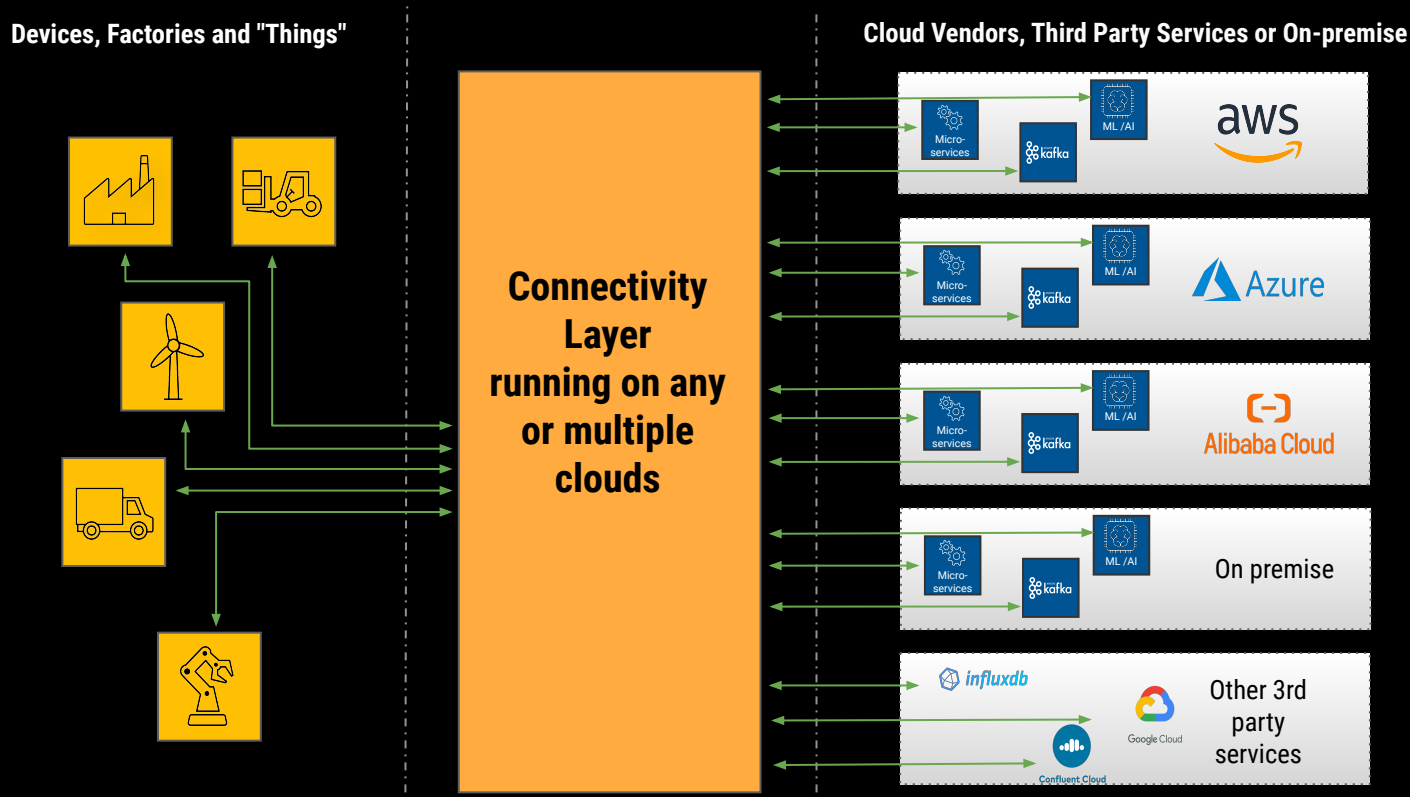
Efficiency

Gather on the edge, infer in the cloud

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%



Vendor lock-in

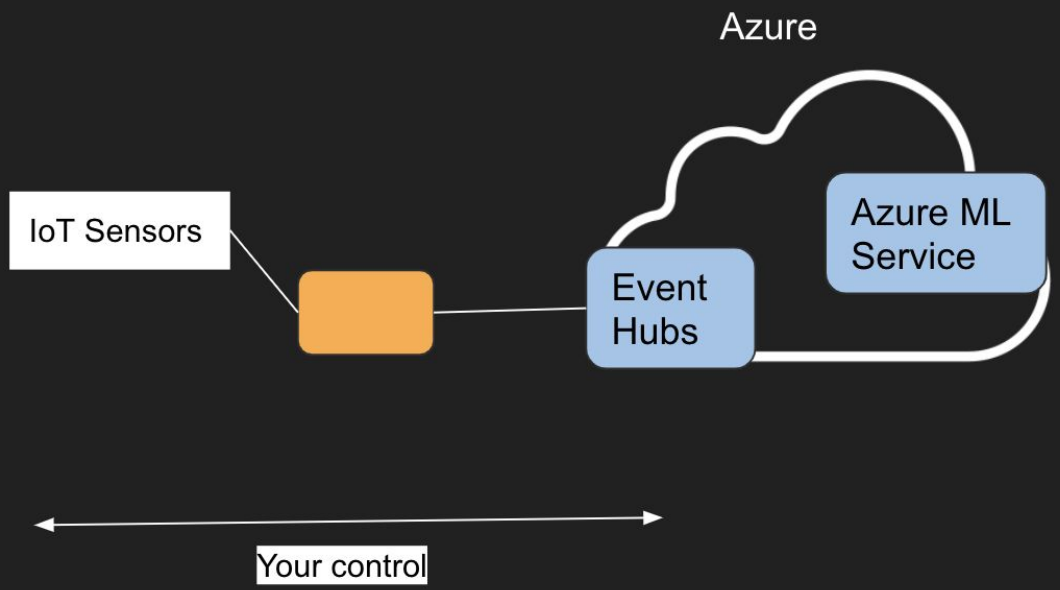
Know the risks of walled gardens

Watch out for these signs

- Proprietary clients on edge devices
- Reporting works only with “certified” clients
- MQTT standard not fully-supported
  - No shared subscription support
  - Poor QoS mapping

Enjoy the benefits of Cloud without the lock-in

- Choose standards based technology
- Granular management of your IoT estate
  - Query individual endpoints
  - View active sessions



Observability

Know what's wrong, or at least where

IoT is unique

- Unreliable networks
- Generates too much data
- Many vendors and platforms

- What happens inside the Cloud is a black box
- Can’t query and control individual clients
- APM tools are of limited help

What to look for

- Detailed logs
- Traceability
- Support for standards like Open Telemetry
- Centralized logging
- Detailed Metrics
- Query and Visibility into
  - Individual endpoints
  - Active sessions

Reliability

.. at IoT Scale

“The Cloud never goes down”

… is a fallacy

What happens when

- There is an outage in the cloud
- There are a high number of connection requests
- The network is down

What you need from your provider

- Crucial business processes should still continue on your locations
- Ability to connect a large number of devices after a cloud or network disruption
- Ability to troubleshoot and spot where the issues are

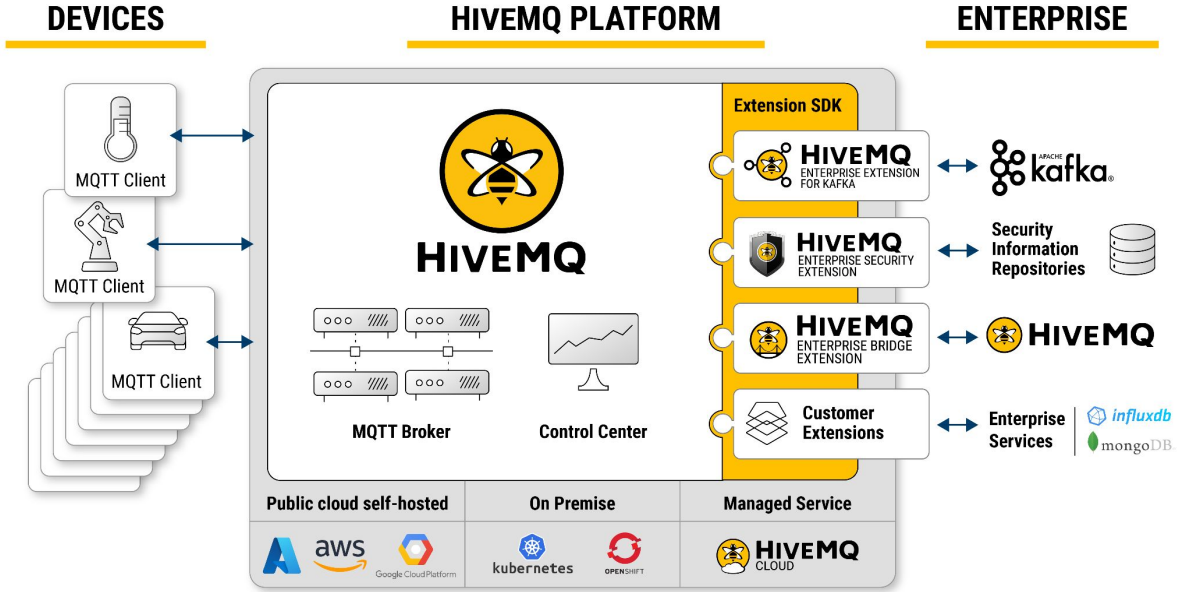
Recap

What your cloud IoT data-ingestion strategy should include?

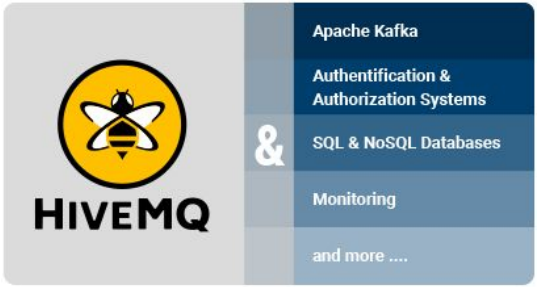
1. Broad support of edge devices and no proprietary clients
2. A governed and bi-directional mechanism to route IoT data between endpoints and the purpose-relevant clouds.
3. Streamline data to ensure you are only sending necessary data to the cloud
4. Red lines for cloud vendors which - if crossed - could lock you in
5. In-depth understanding of the logs, metrics and controls available to you for managing your architecture
6. A plan to deal with Cloud outages and interruptions

HiveMQ is here to help

- No proprietary clients
- Choose your Cloud/s
- Smart filters to efficiently move data to the cloud
- Traceability and 1500+ Metrics for deep Observability
- Clustering of broker for high uptime and scales to millions of endpoints
- Variety of Extensions



HiveMQ Integration of IoT Data



Enterprise SDK

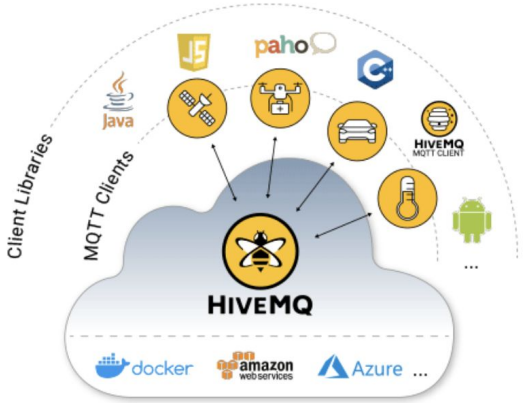
- An open API that allows developers to create custom extensions that suit their specific infrastructures.
- Extensions are deployed within the broker so are scalable and reliable
- Extensions written in Java

- HiveMQ Marketplace for pre-built extensions

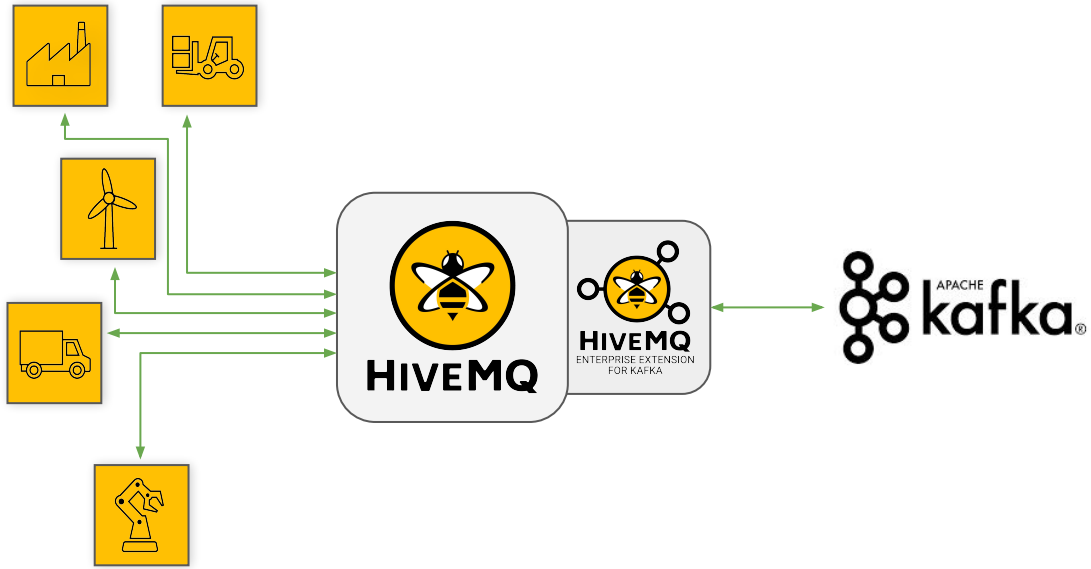
- HiveMQ offers commercial extensions for:
  - Kafka
  - Enterprise Security
  - MQTT Broker Bridge

HiveMQ Freedom to Run Anywhere

- HiveMQ doesn't lock you into one deployment platform
- We have a multi-cloud strategy that allows our MQTT broker to be deployed on private, hybrid and public clouds like AWS and Microsoft Azure
- With HiveMQ Cloud we also provide a fully-managed MQTT Cloud Platform that requires no installation or management



HiveMQ Enterprise Extension for Kafka



- **Native implementation** of Kafka protocol
- **End to-end** persistent messaging guarantees
- **Bi-directional** communication
- High Scalability and resilience
- Support of **Local Schema Registry** (Avro, JSON)
- Support of **Confluent Schema Registry** (Avro)
- Stream to multiple Kafka instances

OASIS OPEN MQTT

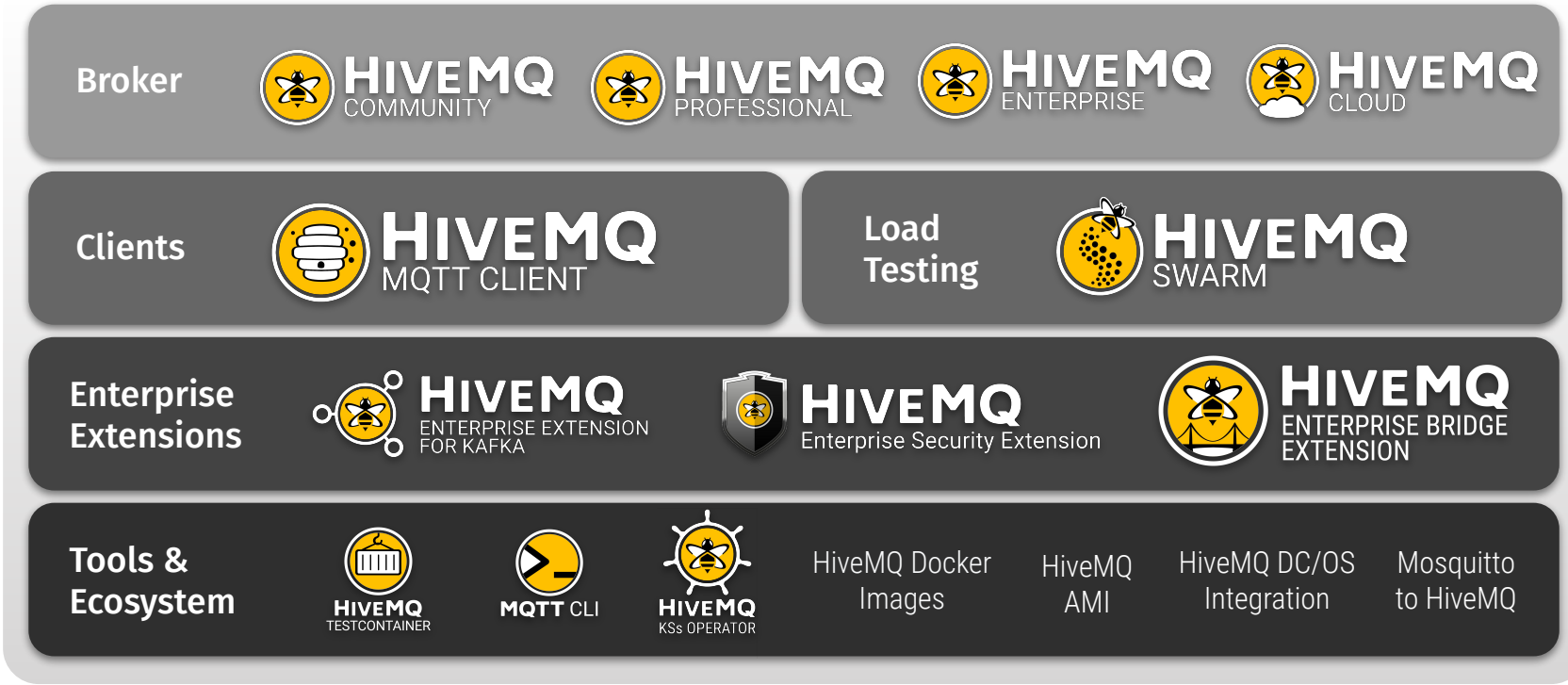
- MQTT Technical Committee
- MQTT-SN Technical Committee

Sparkplug

- Sparkplug Workgroup Steering Committee
- Sparkplug Specification Committee

iot eclipse.org

- Eclipse IoT Working Group



Resources

Get Started with MQTT

Evaluate HiveMQ

Try HiveMQ Cloud

HiveMQ Blog:
Send OPC UA Data to Azure With HiveMQ and MQTT

HiveMQ Blog:
What is the best way to ingest IoT data to Microsoft Azure?

THANK YOU

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