Uplink Transforms Alert Systems with Seamless Integration of Real-Time Data

Thank you for downloading this HiveMQ case study. Carahsoft is the master government aggregator for HiveMQ IoT solutions available via OMNIA, IPHEC, and other contract vehicles.

To learn how to take the next step toward acquiring HiveMQ's solutions, please check out the following resources and information:

For additional resources:
carah.io/hivemq-resources

For upcoming events:
carah.io/hivemq-events

For additional HiveMQ solutions:
carah.io/hivemq-solutions

For additional IoT solutions:
carah.io/IoT-Solutions

To set up a meeting:
HiveMQ@carahsoft.com
571-591-6210

To purchase, check out the contract vehicles available for procurement:
carah.io/hivemq-contracts

Uplink Transforms Alert Systems with Seamless Integration of Real-Time Data

At a glance

What do they do?

- Provide cellular solutions for security applications and alarms
- Specialize in real-time monitoring and response across diverse settings

Challenges

- Growing demands of smart city infrastructure
- Reliable messaging to support new products

Solution

- Adopted HiveMQ for its high scalability and customization capabilities
- Integrated enterprise-grade MQTT platform to handle millions of connections and enhance real-time data flow

Results

- Support 24,000 connections and 410 million outgoing messages per hour
- Ensure continuous operation and rapid response for security systems
- Zero downtime since 2020

Expert-level Remote Monitoring for Security Apps and Alarms

Uplink provides cellular solutions for security applications and alarm systems, specializing in the transmission of event notifications across diverse settings. From safeguarding farm irrigation systems and Federal Aviation Administration equipment to managing environmental controls for computer servers and issuing tsunami alerts, Uplink's technology plays a critical role in real-time monitoring and response in smart cities and other environments.

For instance, Uplink systems monitor environmental conditions crucial for farm operations, such as temperature regulation in chicken houses to optimize egg production. A common application includes activating fans when temperatures exceed set thresholds, ensuring animal welfare and operational efficiency.

Uplink's cellular communicators help to enhance security system reliability. These devices use cellular networks to ensure continuous signal transmission between alarm systems and monitoring centers. By facilitating immediate and reliable communication of critical alerts, such as unauthorized entries or fire incidents, Uplink's cellular communicators guarantee that essential data is promptly relayed, ensuring swift response and enhancing overall safety.

Uplink's digital transformation journey began in early 2020, focusing on adopting MQTT for its next-generation products. The primary goal was to leverage a reliable, cost-effective, and easy-to-install connectivity solution to ensure the availability of data from new devices and products.

Uplink®

Finding a Reliable MQTT Platform to Meet Rising Demands

With the increasing demand for residential and commercial alarm systems in the midst of smart city growth, especially post-COVID, Uplink has expanded its applications and needed to scale connectivity to support the growing business. "Our devices are now used in 85% of alarm systems," said Wes Watts, general manager at Uplink.

Uplink's decision to work with HiveMQ was driven by their need for an enterprise MQTT platform. HiveMQ's platform was evaluated and selected due to its ability to handle millions of concurrent connections and devices. "We needed a solution that could handle our design requirements for the new module. HiveMQ's flexibility and customization is exactly what we needed," said Watts.

> ❝
> # HiveMQ allows us to maintain 24,000 connections constantly
>
> Kristiyan Kiritsov, IT Lead at Uplink
> ❞

Kristiyan Kiritsov, IT Lead at Uplink, elaborated on their technical setup: "We host our HiveMQ cluster on-premises with two virtual machines using Hyper-V. We have custom integrations for Kafka and Couchbase, with the streaming data consumed by our proprietary application for data storage."

"Without a robust message broker, if some of our backend applications go down, we would lose information. HiveMQ allows us to maintain 24,000 connections constantly," said Kiritsov.

Uplink has also implemented Prometheus and Grafana for monitoring, creating custom dashboards to track heap usage and the number of connections. "The observability provided by HiveMQ, through Prometheus, makes it easier to digest and understand the data," Kiritsov said.

With just a team of four working to keep connectivity systems up and available, HiveMQ's platform has helped bring new members up to speed quickly. Kiritsov said, "I am a new member of the team and it was very easy for me to jump in and start using the platform."

Maximizing Reliability and Scalability with HiveMQ

With HiveMQ, Uplink has been able to successfully support:

24,000 connections from various devices

410 million outgoing messages per hour

High availability with zero downtime related to the MQTT platform since its implementation in 2020

The reliability of HiveMQ has been evident from the beginning, with no major issues reported. "From when we acquired the software to now, there have been no major issues. I'm impressed with how it handles the nodes themselves, and they are doing just fine," said Kiritsov.

HiveMQ has significantly enhanced Uplink's ability to provide reliable and cost-effective solutions for security applications. The robust and scalable infrastructure ensures continuous monitoring and event notifications, crucial for applications ranging from farm irrigation to tsunami warnings. With the successful integration of HiveMQ, Uplink continues to deliver on its promise of reliability and simplicity in connectivity solutions.