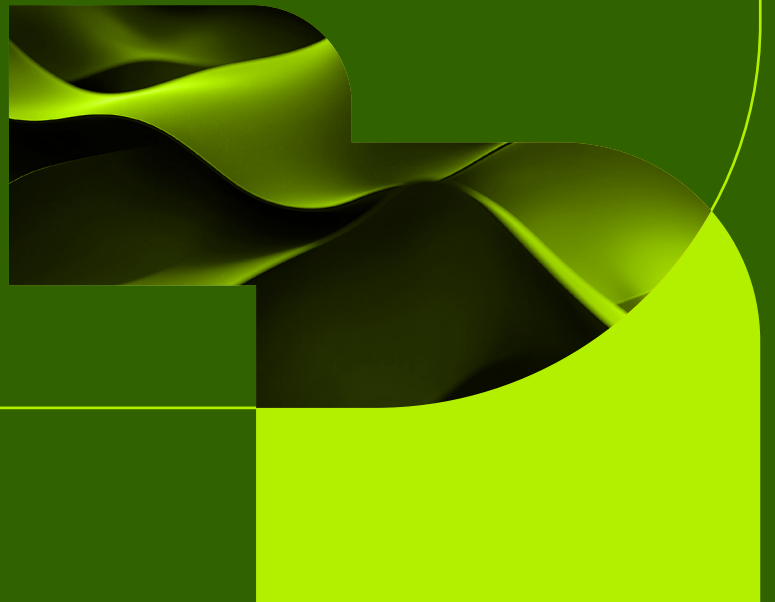


pubnub

Case Study

PUBNUB BREAKS THROUGH INFRASTRUCTURE BARRIERS *With Instaclustr managed platform*



Industry

Information and Internet
Technology

Products used

Instaclustr Managed
Apache Cassandra

PubNub is a leader in real-time communication infrastructure, trusted by developers to power applications across over a billion devices each month. Their platform delivers seamless, scalable, and reliable connectivity for industries demanding instant data exchange, enabling solutions from live chats to IoT applications.



Challenges

- Difficulty managing self-hosted Apache Cassandra
- Critical database incident causing operational disruption and infrastructure vulnerabilities



Results

- Seamless management of 255TB of data with proactive monitoring and 40 active alerts
- Significant resource savings, eliminating the need to hire four additional database engineers
- Operational burden shifted from PubNub's team, allowing focus on strategic projects and innovation

PubNub's explosive growth brought tremendous opportunities. At the helm of these efforts, Vincent, Senior Director of Engineering, and his team were tasked with ensuring the platform's real-time capabilities could keep pace. "Our team processes trillions of API calls each month, and our customers rely on us for a network that can handle massive scale and complexity," said Vincent.

However, as PubNub expanded, their self-hosted storage layer built on Apache Cassandra became increasingly difficult to manage. Scaling this complex system, managing intricate data models, and optimizing clusters proved challenging. These issues came to a head during a critical database incident that revealed vulnerabilities in their infrastructure.

A strategic shift

Rather than viewing the crisis as a setback, PubNub's engineering team saw it as a pivotal moment to evolve. They recognized the need for specialized support to stabilize their infrastructure and future-proof their operations. This led them to partner with Instaclustr, leveraging their managed platform and deep expertise in open source data technologies.

PubNub was able to regain control and confidence in their infrastructure with Instaclustr fully managing their open source database. Instaclustr's team worked closely with PubNub to optimize their Cassandra clusters, ensuring that database performance, scalability, and reliability were maintained without the day-to-day operational burden falling on PubNub's engineers.

Empowering PubNub's engineering excellence

Instaclustr not only provided operational management, but also strategic guidance. PubNub re-evaluated their data modeling approach, making queries more efficient and reducing processing overhead. "With the data model changes, we're much more resilient to scale issues. Previously, if a single customer grew too large, we'd hit performance issues. Now, with improved partitioning and bucketing, we can handle these growth challenges much better," said Vincent.

PubNub reduced the risks of misconfigurations and improved system stability by adopting best practices and automation strategies recommended by Instaclustr. This proactive management minimized downtime and enabled the engineering team to focus on strategic projects. Freed from the operational burden of database maintenance—including patching, upgrading, and troubleshooting—PubNub's developers shifted their energy toward building new features and enhancing customer experiences.

"Instaclustr didn't just manage Cassandra—they helped us make smarter decisions that ripple across our entire business," said Vincent.

Resilience, efficiency, and growth

The partnership with Instaclustr yielded significant outcomes, driven by PubNub's commitment to continuous improvement and Instaclustr's dedication to proactive support. Instaclustr manages 255TB of data with confidence, supported by proactive monitoring and over 40 active alerts that catch potential issues before they escalate.

Their partnership is further reinforced by Instaclustr's commitment to continuous collaboration. When faced with complex challenges, PubNub can rely on Instaclustr as a proactive partner to work alongside them to develop effective solutions. This seamless partnership enables PubNub to overcome obstacles with agility, focusing on delivering real-time communication services while trusting Instaclustr's expertise to ensure robust infrastructure management.

This collaborative approach has also delivered measurable operational efficiencies. PubNub optimized resource allocation and avoided the need to hire additional database engineers by offloading the complexities of database management to Instaclustr, saving both time and resources. "Without Instaclustr's support, we would have had to hire at least four engineers to manage our database needs—an investment that would have strained both our budget and team capacity," said Vincent.

A future fueled by innovation

PubNub's journey from crisis to confidence wasn't just about solving technical challenges—it was about evolving how their team operated, innovated, and grew. Today, they continue to push boundaries in real-time communication, supported by an infrastructure designed for resilience and scalability.

With Instaclustr managing their open source database as a strategic partner, PubNub is well-positioned to lead the future of real-time connectivity, focusing on what they do best: delivering exceptional experiences to their global user base.

“Managing data at our scale isn’t just about tools—it’s about having trusted expertise to keep us moving forward.”

Vincent, Senior Director of Engineering, PubNub

NetApp® Instaclustr specializes in open source technologies for enterprises. Our managed platform streamlines data infrastructure management, backed by experts who ensure ongoing performance, scalability, and optimization. This enables companies to focus on building cutting edge applications at lower costs.