

[Case study]

Aiven Kafka used to deliver low latency for Comcast Xfinity Home

Comcast Xfinity Home case study

Comcast Corporation (Nasdaq: CMCSA) is a global media and technology company with two primary businesses, Comcast Cable and NBCUniversal.

Overview

Well known for its residential video, high-speed internet, and phone services, Comcast Cable also provides wireless security and automation services under Xfinity Home.

In fact, Xfinity Home is one of the fastest growing home security providers in America, offering peace of mind with 24/7 professional monitoring and smarter home security features such as video monitoring and management of third-party IoT devices from a phone, tablet or the Xfinity Home touchscreen.

Ultimately, the aim of Xfinity Home is to create a digital home for its customers, giving them a single experience that connects and manages their home security and automation needs by integrating some of the best products and devices.

Their Business Opportunities Manager, Andrew Gerhold, explains,

“We combine our Xfinity Home and XFi experiences into our Digital Home Ecosystem to secure our customers’ homes and enable IoT concept across all stacks of our devices to deliver a truly smart home! Specifically, our engineers are working to enable our customers to easily control their connected devices, making full use of our Xfinity platforms.”

“...our engineers are working to enable our customers to easily control their connected devices, making full use of our Xfinity platforms.”

Andrew Gerhold
Business Opportunities Manager



The challenge

Building the Digital Home Ecosystem requires a team that specializes in building high-performance, reliable back-end systems and server-side APIs, creating the interconnectivity fabric of the platform and enabling the provisioning of a revolutionary class of services to millions of internet users.

With tens of millions of customers comes hundreds of millions of networked devices—and an enormous amount of data. This data is not only used to deliver personalized content, but to ensure a resilient product and improve customer care.

“...IoT devices perform must be matched by an equally performant solution.”

Andrew Gerhold
Business Opportunities Manager

If the amount of data weren't enough of a challenge, Comcast's diverse customer base provides an additional one. Not only are they spread across many regions, they use dozens of different devices that are connected to hundreds of access networks at different times.

This presents latency that is averaged over millions of customers all under constantly changing conditions. As Gerhold explains,

“Consequently, the complexity and volatility inherent in the real-world conditions under which end users expect IOT devices to perform must be matched by an equally performant solution.”

The solution

While latency is a key metric, scalability is also essential. After prototyping and testing a few inhouse and external solutions, they decided to move forward with Kafka because it has better throughput, built-in

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Andrew Gerhold
Business Opportunities Manager

partitioning, replication, and fault-tolerance which makes it a good solution for large scale message processing applications.

In the team's experience, messaging uses are often comparatively low-throughput, but may require low end-to-end latency and often depend on the strong durability guarantees Kafka provides.

In spite of Kafka's benefits, it is difficult to manage and the resources required to do so can be better used towards bottom-line projects. This is why they vetted providers according to very specific requirements. Gerhold explains,

“The cluster must maintain high availability and must be performant 98% of the time under 50ms end-to-end. After a thorough vetting process, they chose Aiven Kafka and Aiven's metrics integration.”

The outcome

Ultimately, Aiven Kafka was able to deliver their latency and scalability requirements, while outperforming the other competitors. Their VP of Engineering, Adam Hertz puts it simply,

“At Comcast, we needed a robust managed Kafka solution for some of our most critical workflows. Based on our evaluation, Aiven clearly offers superior cost, support and performance.”

Comcast's choice of Aiven is a testament to its focus on providing easy-to-use, secure, and performant solutions for production workloads, which require such features to be provided dependably.