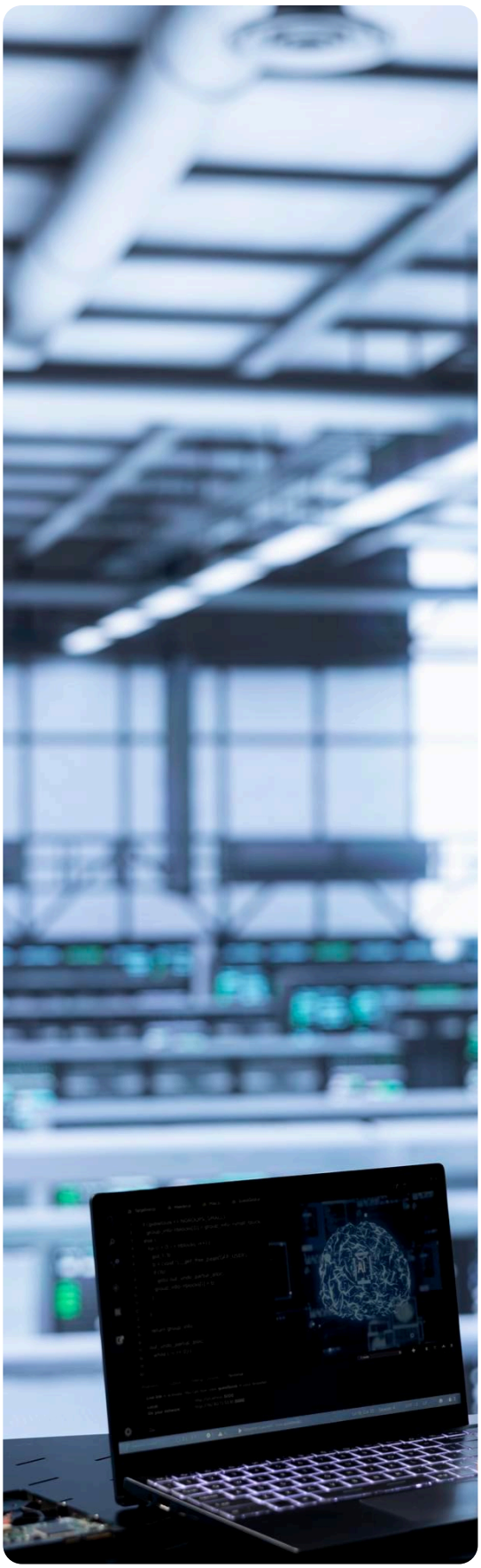
Xgrid.co

IoT: Monolets Achieves Near Real Time Item Tracking

Data Engineering

DevOps

Case Study



Supply Chain systems are inherently complex as they involve multiple stages, from manufacturing to transportation to delivery at the final destination. The ability to track items throughout the Supply Chain is crucial for ensuring timely delivery and, at times, maintaining the viability and quality of goods (e.g. perishables).

MonoLets, based in Silicon Valley, California USA, enables its customers to effectively monitor and track item movement through the supply chain. With real-time item level data, customers can have complete visibility of their supply chain operations, allowing them to make informed decisions and take necessary actions in a timely manner. The combination of mesh network and cloud-based IoT platform provides a comprehensive solution that equips customers with the tools they need to effectively manage their supply chain operations.

Using Xgrid IoT services, MonoLets built this cloud IoT platform in 4 months with 28% reduction in cloud costs, achieving a 63% reduction in item tracking latency.

63% Reduction In Latency For Item Tracking

Latency is crucial for item tracking in **Supply Chain** systems, as it affects the accuracy and timeliness of tracking information. Delays in tracking data lead to **inefficient operations, mismanagement of resources**, and ultimately impact **customer satisfaction.**

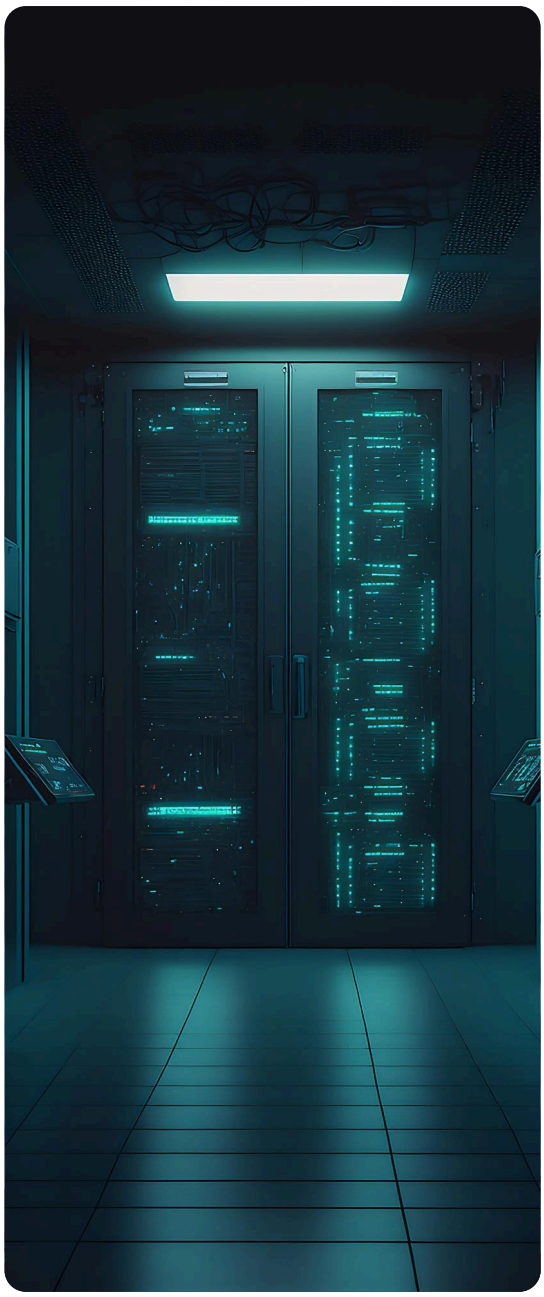
Xgrid partnered with MonoLets to optimize the IoT-based item-level supply chain tracking solution. Xgrid optimized the solution by utilizing GCP services including GKE, Pub/Sub, Dataflow, and a GCP hosted database, ScyllaDB. The custom Golang-based servers were deployed as Kubernetes replicas, interfacing with Pub/Sub queues for efficient data processing. Dataflow pipelines updated the item information in ScyllaDB, optimized for fast retrieval and analytics. The database was designed with primary and secondary indexes and streaming paths, utilizing change data capture features to instantly update relevant systems. These optimizations resulted in a 63% reduction in latency for item tracking, with changes reflected in real-time within a minute or less.

> Our IoT use case required monitoring multiple stages of our customers' Supply Chain, from manufacturing to transportation, to delivery at the final destination. It was critical for us to track items throughout the supply chain while adhering to stringent timeline constraints. Xgrid complemented our cloud team to develop a near real-time, cloud-native IoT system for item tracking throughout the lifecycle of our customers' supply chain.
>
> **Osama Khan**
> CEO Monolets

28% Lower Cloud Costs

Unmanaged cloud costs can lead to unexpected expenses and reduced profitability. Proper planning and optimization of infrastructure, data storage, and processing power is crucial for controlling costs and ensuring a scalable and cost-effective solution.

Xgrid helped MonoLets reduce its cloud costs on Google Cloud Platform (GCP) by carefully evaluating, predicting, and modeling its usage patterns. Through a combination of proper resource allocation, accurate resource tagging and grouping, and scaling down the platform based on load or off-hours, Xgrid reduced MonoLets' anticipated cloud costs by 28%. This cost-effective solution was deployed without any loss in system performance or reliability.



Built The Platform On GCP In 4 Months

MonoLets needed to get to market quickly, but building a cloud-native IoT platform from scratch can be a challenge without the right expertise in cloud infrastructure, platform, and application development. It's essential to have a deep understanding of these areas to ensure successful and efficient development and deployment.

MonoLets partnered with Xgrid to bring their cloud-based IoT solution to market quickly and efficiently. The two companies worked together to create a plan that allowed for rapid prototyping, validation, and productionisation of the solution. In just 4 months, the companies were able to bring the IoT platform to market and started onboarding customers. The partnership allowed MonoLets to quickly and effectively implement their IoT solution and achieve their goals.

The IoT Solutions Spans At Least 4 Industries

Accurate item-level supply chain tracking is important for multiple industries. Real-time visibility into item movements helps companies reduce bottlenecks and improve efficiency. With accurate and timely data, they can make informed decisions and proactively address disruptions in the supply chain.

MonoLets partnered with Xgrid to bring the IoT platform to market and to its customers in the logistics, manufacturing, retail and pharmaceutical industries.

28%

Lower cloud costs

63%

Faster item tracking

4Mo

Development cycle