



Scaling to Support Skyrocketing Growth, with a Six-Fold Reduction in Per-User Costs



Beeper, acquired by Automattic in 2024, provides “all your chats in one app,” making it easy for consumers to use a single app to send and receive messages on 14 different chat networks.

The company has grown significantly since its founding in 2020, with a user base that’s currently expanding at a rate of up to 0.75% per hour. A team of 40 Beeper associates enhances and supports this novel offering, continually adding new apps for Android, iPhone, ChromeOS, macOS, Windows, and Linux.

“ SuperOrbital has been instrumental in getting us to this point ... The results have been worth many multiples of the fees we’ve paid.

—Brad Murray, co-founder and CTO

CHALLENGES

- Lack of scalability to meet skyrocketing consumer demand
- A need to throttle new user registrations to avoid downtime
- High per-user costs driven by significant memory requirements
- Technical limitations posed by the unique usage of Kubernetes

As this young organization evolved and interest in its unique service began to explode, the Beeper engineering team faced several formidable challenges. The infrastructure wasn’t scalable enough to keep up with demand, forcing Beeper to limit new user registrations, and per-user costs were high due to significant memory requirements.

In search of expert guidance on how to address these issues, Beeper contracted with SuperOrbital in 2021 to leverage their deep Kubernetes expertise and community involvement. Through monthly meetings with the client’s Engineering team, SuperOrbital drilled down into the company’s technical challenges and recommended effective, practical solutions.

“We were looking to do something fairly complicated and needed a partner to level-up our organization and teach us the right way to do things,” said Brad Murray, co-founder and CTO. **“Through SuperOrbital’s expert advice, we’ve learned to look at problems in a different way and arrive at much better solutions.”**

SOLVING THE SCALE DILEMMA

Beeper needed confidence that it could scale to meet demand as word of this unique platform spread. “But we didn’t have the infrastructure to support our growth,” explained Toni Spets, a DevOps team member. Bringing in all of a new user’s chats across every chat network they use and populating them within Beeper yielded significant data traffic. Even after throttling new user registrations, the infrastructure lacked the stability and reliability to keep up.

“Just the traffic from setting up ten users concurrently was causing downtime and performance issues,” Murray explained.

SuperOrbital and Beeper collaborated on implementing Litestream, a solution that would enable the company to run SQLite within the Kubernetes environment with much better performance, with the ability to handle concurrent activity at scale. Beeper launched Litestream for new users in October 2022, then rolled it out in June 2023 for 250,000 active user connections.

“Before, we struggled to add hundreds of users a day; now we could add tens of thousands,” Spets said. Beeper eliminated the waitlist, announced that the solution was generally available, and easily handled 75,000 new users in a three-day span with no performance impact. It’s a prime example of the value of SuperOrbital’s third-party perspective and innovative thinking.

“We have a capable engineering team, but we might not have considered things outside the box, partly because we use Kubernetes differently than most companies,” Spets said. **“Our discussions with SuperOrbital opened up entirely new ideas.”**



BRAD MURRAY
co-founder and CTO

“ We were astonished by how much we saved on memory just by having that outside influence to try something we didn’t think would make a big impact.

— Toni Spets, DevOps team member

VALUE CREATED

- Achieved the scalability to register tens of thousands of new users per day
- Reduced memory use by 3.2 terabytes
- Cut per-user costs by six-fold
- Avoided the need to scale up the monitoring stack

For instance, Kubernetes’ inherent limitations on workload handling could have prevented Beeper from deploying Litestream to improve scalability. SuperOrbital removed that obstacle by advising Beeper on how to build a tool that facilitates running workloads in a way that supports Litestream within the Kubernetes environment.

“Now **we can scale with confidence, knowing we have the architecture we need,**” Murray said.

DRIVING DOWN MEMORY COSTS

Solving the scalability issue gave rise to a new challenge: As Beeper’s user base skyrocketed, so did its need for memory, which in turn drove up its per-user costs.

Beeper had reached a point of running over 250,000 litestream containers, one for each active user connection and each requiring its own set of memory. SuperOrbital proposed consolidating those Litestreams onto a single process per node to dramatically cut memory use. The Beeper team was skeptical that it would work but willing to give it a try—then shocked by the results. **Total memory requirements dropped by a stunning 3.2 terabytes, and total costs per user declined by 25%.**

“We were astonished by how much we saved on memory just by having that outside influence to try something we didn’t think would make a big impact,” Spets said.

A BETTER WAY TO HANDLE DATA

SuperOrbital also helped Beeper better handle a large volume of telemetry data without losing essential information.

“We were trying to figure out how to scale up our monitoring stack to handle all the data we were generating,” Murray explained, but the Engineering team’s proposed solutions were complex. SuperOrbital challenged Beeper to consider whether they were solving the right problem; perhaps the company was generating too much data unnecessarily. As an alternative, SuperOrbital recommended analyzing the data and cardinality generated and determining which were actually providing value to the Engineering team.

“**By refocusing our efforts on data analysis and load generation, we reduced the amount of data we generate by 90%,**” Murray said. “SuperOrbital made the problem smaller, so the solution became simpler.”



TONI SPETS
DevOps team member

“ Within a year of working with SuperOrbital we realized a six-fold reduction in user costs... —Brad Murray, co-founder and CTO

SOLUTIONS

- Ongoing engagement of monthly consulting sessions
- Strategic guidance and recommendations
- Creative solutions to complex challenges



NICK MILLS-BARRETT
lead, Engineering platform team

GETTING FURTHER, FASTER

“Just having a third party to bounce ideas off back and forth has been priceless,” noted Nick Mills-Barrett, who leads the platform team within Engineering. **“It’s been incredibly helpful to have that external, unbiased view. Without SuperOrbital, it would have taken much longer to get where we did.”**

This long-term relationship continues to pay dividends for Beeper in many ways: improving system performance, adopting better outage recovery techniques, enhancing backup and failover strategies, improving operational processes, and identifying critical new-hire skills.

“SuperOrbital offers a wide array of advice, and that’s been super helpful as we’ve grown our team and our organization,” Murray said. “Everyone looks to SuperOrbital as our expert partner.”

SuperOrbital’s impact on the Beeper business has been measurable. “Opening our product to general availability without any technical concerns creates a huge audience for us,” Murray said. **“Within a year of working with SuperOrbital we realized a six-fold reduction in user costs, and those cost optimizations enabled us to offer a free plan.”**

“Thanks to the guidance, advice, and support of SuperOrbital, **we were able to scale up to acquire many more users and reduce our costs, which made us attractive to be acquired,**” Murray said. The Beeper team is now excited to make the platform more widely available to the global chat market, continually fine-tuning the infrastructure to support more consumers.

“As we continue to solve new challenges, we don’t see why everyone in the world shouldn’t be using Beeper as their primary chat app,” Murray said. **“SuperOrbital has been instrumental in getting us to this point and supporting us through the arc of our maturity. The results have been worth many multiples of the fees we’ve paid.”**



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