TESOURO SCALES INNOVATION IN PAYMENT SPACE *With open source*
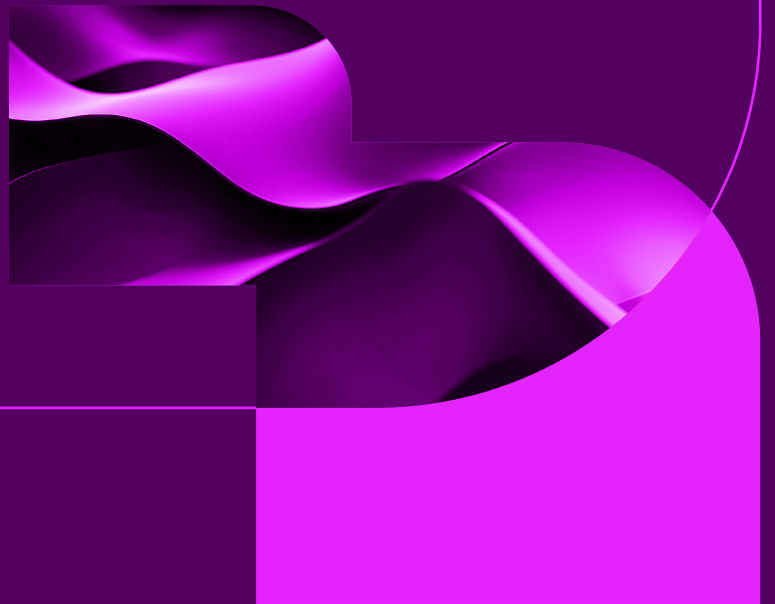
Tesouro, a dynamic and rapidly growing startup in the financial payments industry, specializes in secure and scalable transaction solutions. With over three years in operation, Tesouro is on a mission to provide simplicity, security, and speed in the payment space.

Challenges

- Managing scalability efficiently in a high stakes startup environment

- Small DevOps team requiring manual infrastructure maintenance

- Ensuring high availability and security with open source technologies

Results

- 75% reduction in storage

- Zero downtime during migration

- 240+ hours saved annually in management time

High stakes for a startup

The financial payments industry operates at the forefront of real-time transactions, relying heavily on open source technologies that demand unwavering security, reliability, and scalability. For a fast-growing startup like Tesouro, these challenges are amplified, making cost-efficient scalability and high performance mission-critical in an intensely competitive market. "Our ability to elastically scale the system determines our legitimacy in the space and our ability to keep operating," said Ben Moody, DevOps Lead at Tesouro.

For Tesouro, managing infrastructure with a lean two-person DevOps team presented a major hurdle. The team had to keep operations agile while avoiding the costly trap of maintenance-heavy workflows. "From the beginning, we've been 100% cloud-based, prioritizing velocity and scalability," said Moody. "As a startup, we can't afford to get stuck in maintenance mode. We need systems that allow us to quickly prototype and implement new features."

Additionally, Tesouro's production transaction database proved to be the backbone of its payment processing ecosystem. Any downtime was simply out of the question. "Our production transaction database is the core of our system and demands 100% uptime. It's mission-critical; everything falls apart if it's not running," said Moody. In an industry where downtime is not an option and compliance with regulations like PCI and SOC 2 is mandatory, Tesouro needed a partner with proven capabilities to deliver 24/7 reliability, automated scaling, and expert support without adding strain to the internal team.

Lean team finds a trusted open source partner

Tesouro partnered with NetApp Instaclustr, a partner renowned for simplifying and streamlining open source data infrastructure. Relying on Instaclustr's fully managed offerings for Apache Cassandra, Apache Kafka, and PostgreSQL, Tesouro found a solution that seamlessly aligned with its cloud-based workflow.

"Instaclustr is involved in nearly every step of our infrastructure. Their first touch point with us was managing our production transaction database—a Cassandra database. We later migrated two other components to Instaclustr—Postgres and Kafka that helped streamline our back-end processing and data pipeline," said Moody. "With everything in AWS, we knew we'd need experts to manage something so crucial, so we partnered with Instaclustr."

Instaclustr stepped in as more than just a service provider. With its expert team conducting 24/7 proactive monitoring, challenges were swiftly identified and resolved before they could impact operations.

"One of our microservices was consistently failing and timing out with our Postgres database. Instaclustr quickly pinpointed the issue—a misconfigured connection pool cycling through connections too rapidly. Within 24 hours, their recommendations helped us resolve a problem we'd been struggling with for a while."

Beyond technical fixes, Instaclustr served as a strategic partner, guiding Tesouro's team to adopt smarter infrastructure strategies that ensured zero downtime during migration and ongoing operations. "This partnership has saved us from running ourselves off into a ditch," said Moody. "They caught things we needed to address and offered actionable advice that gave us confidence during critical moments."

Driving costs down, innovating faster

Leveraging Instaclustr, Tesouro streamlined its infrastructure, significantly reduced costs, minimized maintenance efforts, and accelerated innovation. A standout improvement was data retention, where Instaclustr's expertise enabled Tesouro to implement an optimized storage strategy. "We were in a position where we were saving everything, but it was time to move away from this strategy," said Moody. "Together with your team, we devised a strategy for automatically partitioning our top databases, and automating archival along the way. This helped us trim our storage by 75%, saving us a ton on storage costs."

Beyond cost savings, optimizing storage also delivered a major performance boost. "The queries that we're running against those databases are much faster because of the partitioning, and that was something that the Instaclustr team advised us a great deal on," said Moody. By adopting smarter data management, Tesouro not only reduced costs, but also improved speed and scalability without compromising performance.

The Instaclustr managed platform also allowed Tesouro to bypass the higher costs of AWS's premium support services, providing a highly economical yet robust alternative. The cost savings, in tandem with their operational efficiencies, has freed Tesouro's DevOps team over 20 hours per month, allowing them to focus on driving innovation and customer-centric improvements instead of juggling infrastructure management. "Not dealing with database administration directly has been a game-changer. Tasks like database updates, debugging issues, or truncating tables are handled by Instaclustr now, and we can use the time we got back to deliver new features, innovate, and move toward our long-term goals," said Moody.

Scaling for what lies ahead

Looking ahead, Tesouro is set to scale its operations and achieve its ambitious growth targets, which remain anchored by its trusted partnership with Instaclustr.

By providing unmatched reliability, security, and expertise, Instaclustr ensures that Tesouro's infrastructure can scale effortlessly as the company continues to innovate in the competitive financial payments market.

"Instaclustr has been a great partner. Their team has guided us through everything from scaling to compliance while ensuring our systems remain reliable and efficient. We trust them to anticipate challenges, provide solutions, and help us focus on what we do best–building and innovating."

Ben Moody, DevOps Lead at Tesouro