QUALITEST™

Global Payment Platform Upscales Capacity, Speed and Accuracy with Full System Re-Architecture in the Cloud

Transitioning from JMS to a high-persistence cloud streaming solution, our team enhanced scalability and eliminated data loss between micro-services. The revamped platform handles increased traffic seamlessly, eradicates in-transit data loss, and achieves a notable 20% reduction in processing time.

Challenges

Increase scalability and reliability for a platform composed of hundreds of micro-services.

Prevent in-transit data loss between services.

Solutions

Transitioned from a JMS system to a high-persistence streaming solution.

Instrumented CI/CD pipelines for the new infrastructure with seamless data bridge integration from old to new systems.

Results

The platform can withstand a few orders of magnitude more traffic. Eliminated in-transit data loss between services.

20% faster processing time due to removed.

Client overview

Our Client is global financial services company that provides online money transfer, digital payment services and working capital for its millions of customers in over 190 countries. The Client's core services were affected by scalability issues, incurring significant business costs. Together with the Client's engineering teams, Qualitest thoroughly analysed the root problem through extensive performance and system tests.

Legacy architecture was hampering scalability

We found that the legacy messaging system (RabbitMQ) had become a bottleneck stifling scalability and reliability. On parallel streams of work, Qualitest partnered with the Client to deliver new features and maintenance to:

1.   Maintain existing payment products: PON, Core Services (Withdrawals, VAT, etc.).

2.   Create an infrastructure for scheduling and executing recurring payment products.

3.   Improve user journeys in the Client's MyAccount application by offering new capabilities over the existing payment solutions: Schedule PON, Schedule Withdrawal, Recurring PON, Recurring Withdrawal, etc.

4.   Prevent in-transit data loss between services and increase scalability and reliability for a platform composed of hundreds of microservices.

5.   Ensure multi-region disaster recovery with third-party and custom-build solutions.

6.   Ensure that the chosen solutions met the stringent compliance and regulatory requirements.

7.   Build tools and libraries for the chosen solutions for development teams.

8.   Ensure the data-bridging solution between the old and new platforms for data syncing and consistency.

Root-and-branch platform overhaul bridges the gap to scalability

Working within a pre-defined quality method of operation and project gates, Qualitest transitioned the platform from a messaging queue system to a high-performance, high-resilience persistent cloud streaming solution.

Our project replaced the Client's RabbitMQ on-prem solution with a cloud-managed AWS Kafka solution. Within the new infrastructure, we specified and instrumented CI/CD pipelines and created custom monitoring tools. We also implemented orchestration and migration tools for a seamless integration with the existing services.

Coordinating the whole effort involved tens of teams and hundreds of engineers covering tools including C#, .NET, Kafka, RabbitMQ, AWS, Redis, Dynatrace and Coralogix.

Key benefits

- **Overall reliability -** Client's core services greatly improved with 60% reduced support from DevOps teams.

- **Optimized scalability -** the platform can withstand an order of magnitude more traffic and support more clients without additional infrastructure costs.

- **Enhanced efficiency -** 20% reduced processing time of payments and removal of bottlenecks.