

Market Data Compliance Application for a Leading Financial Exchange

Client

A North America-based financial technology provider and exchange operator enabling capital markets with advanced data analytics, and trading solutions for driving innovation and efficiency.

Business Need

A solution to ensure stringent compliance adherence of its licensed market data usage. The objective was to:

- Develop an application to **detect unauthorized websites** that showcase market data (real-time or delayed) and verify if they are authorized to do so.
- Classify downstream users of market data as professional or non-professional, based on policy

Solution

Innominds designed and built a scalable, cloud-native compliance platform that automates market data validation, reconciliation, and user classification. The solution includes:

- **Cloud-Native Architecture:** Built on AWS, leveraging **cloud automation via Terraform** for consistent, IaC deployment across environments.
- **Multi-Tenant Enablement:** Designed the platform with **multi-tenancy support**, supporting multiple clients with data isolation, within the stock trading domain.
- **Advanced Scheduling Framework:** Designed and implemented **asynchronous, isolated job schedulers** to efficiently handle long-running tasks, enabling processing of **millions of broker-level data entries** without impacting system performance.
- **Automated DevOps Pipelines:** Integrated **CI/CD pipelines** for continuous delivery and **near-zero downtime deployments**, enhancing system reliability and agility.
- **Smart Reconciliation:** Built **robust file parsing components** to automate reconciliation of high-volume datasets, including support for complex **product hierarchy mappings** across data sources.
- **Containerized & Orchestrated Deployment:** Containerized the entire application and deployed it on **Kubernetes**, enabling automated orchestration, scalable workloads, fault tolerance, and simplified multi-environment management.

Value Delivered

- **Improved Compliance:** Automated, real-time checks reduced manual intervention and compliance risk
- **Cost Efficiency:** 24x7 cloud availability with minimal infrastructure overhead
- **Enhanced Operations:** Significant reduction in data processing times boosted operational productivity with key insights

Tools & Technologies Used

AWS S3 | Terraform | Python | PostgreSQL | React | Node.js | FastAPI



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