



From Batch Bottlenecks to Real-Time Ecosystems

Architecting a **High-Volume API Platform** for European Pharma

Customer Case Study
Pharma industry



<p>97% Faster Response</p> <p>Latency dropped from 6s to 200ms</p>	<p>235% Integration Growth</p> <p>From 180 to 600 integrations on production</p>	<p>30% Faster Delivery</p> <p>From 7 days to 5 days per integration</p>	<p>50M+ Interactions</p> <p>Seamlessly handling massive volumes</p>
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Pharmaceutical Supply Chain Excellence

An established European pharmaceutical company needed to accelerate a shift to an **"API First"** approach across a complex landscape of external partners, logistics providers, and government interfaces. As their ecosystem grew, the need to exchange data quickly, securely, and reliably became paramount to their global healthcare operations.



The Operational Bottleneck: Legacy Batch Constraints

- **Sluggish Responsiveness:** Relying on overnight EDI processing created severe delays, making real-time visibility impossible.
- **Operational Heavy-Lifting:** The platform was difficult to evolve, with new partner onboarding requiring slow, one-off builds.
- **Scalability Ceiling:** The existing infrastructure could not support the forecasted jump from millions to hundreds of millions of interactions.

PROBLEM STATEMENT

How can we modernize a legacy batch-processing infrastructure into a real-time, high-volume API ecosystem capable of scaling to over 50 million interactions ?

The Albocensa Solution: The API First Blueprint

Albocensa designed and implemented a Modern API Integration Platform centered on WSO2 technology. We modernized the client's existing capability, moving them away from historical dependence on overnight EDI processing and introducing a real-time, event-driven architecture. This framework ensured that **APIs were delivered consistently across multiple partners and countries**, rather than relying on fragmented, one-off builds.

We didn't just replace a server; we engineered a unified system of record that **digitized the entire lifecycle of pharmaceutical data exchange**.



The Solution Framework

Our approach established a structured model for implementing and releasing API integrations at scale.

<p>Real-Time API Gateway</p> <p>A centralized, secure entry point for all internal and external data exchange.</p> <p>Data Scope Partner interactions, country-specific interfaces, and real-time healthcare telemetry.</p> <p>Primary Use Routing and managing API traffic efficiently across the enterprise.</p> <p>Key Benefit Reduced system response times by 97%, dropping latency from 6 seconds to 200ms.</p>	<p>Standardized Onboarding Pipeline</p> <p>A repeatable implementation framework for bringing new partners into the ecosystem.</p> <p>Data Scope API development standards, integration templates, and developer toolkits.</p> <p>Primary Use Accelerating the creation and deployment of new partner connections.</p> <p>Key Benefit Increased delivery speed by 30%, cutting integration time from 7 days to 5 days.</p>
<p>Enterprise Governance & Security Layer</p> <p>A robust cybersecurity framework designed specifically for high-stakes pharma networks.</p> <p>Data Scope Authentication tokens, access policies, and threat protection protocols.</p> <p>Primary Use Actively protecting client networks while enabling broad external consumption.</p> <p>Key Benefit Ensured that rapid scaling from 180 to 600 integrations did not compromise regulatory compliance or data security.</p>	<p>High-Volume Execution Engine</p> <p>A modernized backend architecture designed to handle massive interaction spikes.</p> <p>Data Scope Caching data, asynchronous message queues, and execution logs.</p> <p>Primary Use Processing large-scale data exchanges without system degradation.</p> <p>Key Benefit Successfully scaled the platform from 2 million to over 50 million interactions with zero performance loss.</p>

Value-Driven Outcomes

<p>Exponential Scale:</p> <p>The transition from batch to real-time processing allowed the platform to seamlessly scale from 2 million to 50 million interactions, with architecture prepared for 500 million.</p>	<p>Massive Adoption:</p> <p>The standardized delivery model enabled a 235% increase in live integrations, jumping from 180 to 600 in production.</p>	<p>Deployment Flexibility:</p> <p>The solution introduced 6 versatile deployment options, encompassing both On-Premise and Cloud zones, to meet strict country-specific data residency laws.</p>
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Technical Ecosystem

To support a high-volume "API First" architecture, we selected a robust stack focused on extreme reliability, scalability, and automated governance. Each component was chosen to ensure rapid partner onboarding without manual bottlenecks.

[See our full potential >](#)



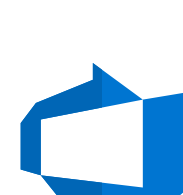
WSO2 API Manager
Acts as the central gateway and lifecycle manager. It provides the governance required to securely expose data to external pharma partners.



WSO2 Micro Integrator
Replaces legacy ESB patterns with decentralized integration. It handles the complex routing and transformation needed for real-time healthcare data exchange.



Python & Java
Used to build customized backend logic and complex data transformations. This dual-language approach allowed for high-performance execution of specialized integration requirements.



Azure DevOps
The automation backbone for the release pipeline. It ensures that all 600+ integrations are deployed securely and consistently across multiple environments.



Redis & AMQ
Employed for high-speed caching and asynchronous messaging. These tools absorb massive traffic spikes, ensuring the system remains stable under heavy operational loads.



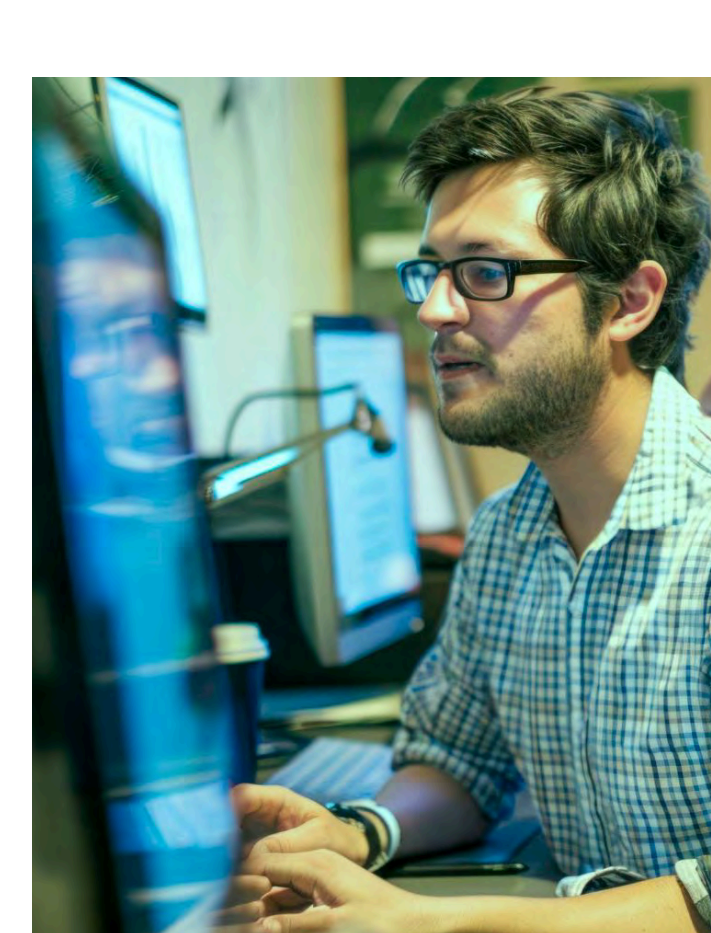
Linux CentOS
The secure, enterprise-grade operating system underpinning the entire platform. It provides the necessary stability for 24/7 pharmaceutical logistics operations.



Team

Delivery was executed by a dedicated, product-style squad consisting of eight API developers and two technical leads. This structure enabled parallel delivery across hundreds of complex integrations while maintaining strict architectural consistency and quality controls.

Technical Leads and API Developers collaborated to balance the pharma ecosystem from 180 to 600 integrations by balancing rigorous governance with rapid execution. While the leads enforced enterprise security and architectural standards, the developers leveraged these frameworks to implement new connections efficiently.



Client Benefits

By modernizing the enterprise integration framework and transitioning from legacy batch processing to a real-time API ecosystem, Albocensa delivered a high-performance environment that perfectly aligned with the client's strategic goals for digital healthcare transformation. This modernized foundation not only resolved immediate operational bottlenecks but also empowered the organization to expand its global supply chain network with unprecedented speed, security, and operational reliability.

<p>Financial & Operational Excellence</p> <ul style="list-style-type: none"> • Accelerated Time-to-Market: By standardizing the integration approach, the team reduced the time to deliver new partner connections by 30%, directly lowering operational overhead. • Predictable Scalability: The new structured release approach ensures that as interaction volumes multiply, IT costs remain stable and predictable. 	<p>Quality & Visibility</p> <ul style="list-style-type: none"> • Real-Time Responsiveness: The 97% reduction in latency (down to 200ms) eliminated the "batch window" waiting game, giving country organizations immediate access to critical data. • Enhanced Security Posture: Embedded cybersecurity controls actively protect the network, ensuring that opening APIs to external partners does not introduce vulnerabilities.
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