

# AdvancedRx modernizes claims processing with event-driven architecture on Azure

Explore how OZ Digital collaborated with AdvancedRx to modernize a critical claims processing platform with event-driven architecture on Azure.



## The Challenge

AdvancedRx, a healthcare organization, processes workers' compensation and auto injury claims with the help of legacy, monolithic backend applications. They had been operating on several of these legacy applications for claims processing, physician dispensing, and back-office operations. Over time, these systems had accumulated technical debt, which began impacting operations. Some of the challenges AdvancedRx faced were:

- Severe performance degradation, with processes taking minutes or failing entirely
- Occasional system outages, forcing operations to pause for extended periods
- High reliance on monolithic architecture, limiting scalability and flexibility
- Operational disruption impacting internal teams and downstream customer experience

At times, the backend instability caused the system to completely shut down that left them scrambling to process claims. Worse, it was affecting business continuity.

## Business Need

As the business grew, there was a clear need to modernize the backend claims platform without risking further disruption. The client partnered with us and as you'll soon find out we've proved that modernizing legacy systems doesn't have to be disruptive.

## The Solution

We collaborated with AdvancedRx to transform their legacy, monolithic backend system into a scalable, resilient platform, one that could process claims reliably without disrupting business operations. We designed and implemented a cloud-native, event-driven architecture on Microsoft Azure to modernize backend claims processing without requiring a high-risk, full-system rewrite.

Rather than refactor the existing monolith, we opted to transition to a modern, event-driven architecture.

### Event-Driven Claims Processing Framework

The new architecture breaks down the claims lifecycle into independent, event-based stages:

- **Claim Intake:** File received and ingested
- **Parsing & Validation:** Automated checks performed asynchronously
- **Processing:** Claims prepared and packaged for submission
- **Submission & Downstream Processing:** Events trigger subsequent workflows

### How It Works

Instead of processing claims in a single, linear flow, the system now:

- Captures each step as an event
- Stores events in a queue for downstream systems to process
- Allows individual services to operate independently
- Enables retry and replay mechanisms if a failure occurs

For example, if validation fails, only that stage is impacted, not the entire workflow. If an external payer system is unavailable, claims are queued and processed later. If services go down, processing resumes from the exact point of failure. In this way, business continuity is maintained even when the system or integration fails.

## Technology Stack

The solution built on Microsoft Azure leverages:

- **Azure Event Hubs** for event ingestion and streaming
- **Azure Logic Apps** for orchestration and workflow automation
- **Cloud-native services** for scalable backend processing

The architecture integrates seamlessly with external systems while staying flexible and scalable. As the system moves into production, it allows for high-volume claims processing, better customer experiences, and scalable, cloud-native healthcare operations.

## Business Value

The solution is currently in development but the architecture is designed to deliver:

- **Improved reliability:** Decoupled services allow failures to be isolated and resolved without impacting the entire system
- **No disruption to business operations:** Even when downstream systems are temporarily unavailable, claims continue to come in
- **Faster troubleshooting:** You can pinpoint the exact stage when something breaks making it easier to diagnose and resolve issues
- **Enhanced scalability:** Independent services enable the platform to scale based on workload demand
- **Future-ready architecture:** The event-driven model supports evolving workflows and integration with new systems over time

As the platform continues to evolve, AdvancedRx is well-positioned to process a high volume of claims, scale healthcare operations in the cloud, and be prepared to integrate AI and advanced capabilities in the future.



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