✦ CONFLUENT

Roosevelt and Delta Dental Build Multi-Cloud Claims Processing Platform with Confluent

Roosevelt

Headquarters
Michigan, United States

Challenge
Build—and later market—a claims processing and benefits administration platform with an advanced business rule engine

Solution
Use Confluent to establish a modern, event-driven architecture that enables real-time streaming and decoupling of key components from the core system

Results

- Industry-leading auto-adjudication rates achieved
- Day-long latencies eliminated
- Architectural missteps avoided
- Continuous improvement enabled

The Roosevelt platform was built by Delta Dental to transform the way major insurers process claims and administer benefits. A key differentiator for Roosevelt is BRIDE, an engine for creating and managing business rules. Business rules authored by business users—not developers—are able to process the vast majority of claims automatically for the more than 20 million members on the Roosevelt platform. This *auto-adjudication* is significantly faster and more efficient than manual processing, and has led to hundreds of millions of dollars in treatment cost savings.

At the heart of Roosevelt is a real-time streaming architecture built on Confluent that powers not only BRIDE, but also eligibility, billing, member portals, and other core functions on the platform. "Data in motion with Confluent underpins the Roosevelt platform," says Muk Agaram, VP, Knowledge and Data Science, at Roosevelt Solutions LLC. "Confluent has helped us modernize the user experience, move from a monolithic architecture to microservices, and drive a digital transformation with real-time data."

Initially developed for use internally at Delta Dental based on more than 50 years of claims experience, the Roosevelt platform and BRIDE are now offered as products. "We are marketing the entire Roosevelt stack, and as part of that, our goal from day one has been to be able to sell BRIDE as a product. That would not have been possible without Confluent," says Will Cicola, Senior Knowledge Engineer at Delta Dental. "Confluent enabled us to decouple BRIDE, extricate it from the legacy monolithic system while still maintaining interoperability, and pursue a long-term product strategy."

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For the second generation of BRIDE, the development team followed a cloud-first, multi-cloud strategy, using Kubernetes for containerization. The first deployment was on Microsoft Azure, with Amazon Web Services and Google Cloud Platform next. "We've seen significant interest from financial services, pharma, and other industries. And that's really where multi-cloud comes in, we want to serve any customer, no matter where they are operating," says Agaram. "Confluent enables us to achieve our goal of being cloud-agnostic; we know as long as Confluent is there we'll be able to follow our strategy," Matt Osentoski, Principal Software Developer at Roosevelt Solutions LLC.

Business Results

- **Industry-leading auto-adjudication rates achieved.**
"We recently worked with a large customer whose auto-adjudication rate was below 80%, which is not unusual. After they converted to Roosevelt, they're processing claims without human intervention at a rate of over 95%," says Agaram. "Confluent is providing the crucial data streaming infrastructure that empowers the platform to deliver industry-leading auto-adjudication rates, which in turn drive huge savings for customers."

- **Day-long latencies eliminated.** "Before we began using Confluent and Apache Kafka, it could take as much as a day before a change made by a user was picked up by all the systems that needed it," says Agaram. "That was a real pain point for our business. Today, we're able to move much more quickly because we're pushing those changes in near real time."

- **Architectural missteps avoided.** "Confluent engineers are great to work with; they've helped us with everything from nitty-gritty technical details to best practices for overall system design," says Cicola. "At times, we were at risk of going down a rabbit hole, and they put us back on the right path."

- **Continuous improvement enabled.** "The architecture we put in place with Confluent has already proven itself to be exceptionally valuable," says Will Cicola. "As just one example, we are currently swapping out a heavy weight application and replacing it with a microservice that will be much more efficient and scalable. With Confluent, this kind of update is simple because we just swap one subscriber for another, and nothing else in the chain needs to know about it."

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Technical Solution

As the number of members on the Roosevelt platform grew into the millions the team began looking for a way to improve search performance, and this led to an early use case for Confluent. The team architected a data streaming solution—a relatively straightforward data pipeline implementation with Elasticsearch—that provided a springboard for addressing more advanced use cases.

One such use case involved handling the flow of data that occurs when a business rule is updated in BRIDE. "Confluent is the backbone of the entire lifecycle around business rule changes, from notifying users of the desktop application, to invalidating caches, populating audit tables, and updating Elasticsearch," says Cicola. "We also use Confluent to deploy the rules themselves and migrate rules between environments."

The team has also implemented a change data capture use case in which database changes to certain policies flow on Kafka topics as metadata that is consumed by BRIDE in near real time. "One of our big upcoming projects is to enhance and centralize our metadata framework, and Confluent will be the backbone for that as well," says Cicola.

Going forward, the team plans to use ksqlDB to develop stream processing applications for fraud, waste, and abuse use cases.

A key part of the Roosevelt and BRIDE vision is to employ advanced scientific techniques to harvest, formalize, and enrich customers' core data and knowledge experience in a systematic and seamless way. Confluent is helping the team drive that vision forward, by delivering products to market that have already enabled Roosevelt Solutions LLC to lead its own industry. "Confluent made it possible for us to refactor our legacy monolith and disentangle BRIDE from it as part of the overall Roosevelt project," says Cicola. "Confluent is a core part of our platform today; it will play an important role in the advanced analytics and knowledge management use cases that we have planned."

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