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# Homepoint Sets Data in Motion to Streamline Loan Processing with Confluent



## Headquarters

Ann Arbor, Michigan

## Industry

Mortgages and Home Loans

## Challenge

Streamline and automate previously manual mortgage processes that were based on the analysis of static loan data

## Solution

Use Confluent to set data in motion and enable faster analysis of loan data as it changes over time

## Results

- Costs decreased by \$800,000 monthly; efficiency increased by 20%
- Near-real-time insights enabled
- Pace of deployments increased by up to 40%
- Proactive support received

Last year, Homepoint closed a company-record \$62 billion of mortgage volume, and through the first quarter of this year the company is on pace to almost double that figure. This rapid growth has been *fueled* by the company's focus on customers, as well as its commitment to continuously finding ways to simplify the mortgage process and make it easier to own a home. And the growth has been *enabled* by a cloud-native, microservices-based IT architecture founded upon Microsoft Azure and Confluent.

Plans for the next-generation architecture started early last year, when it became clear that the company's current API-based architecture was showing signs of being unable to keep pace with the business and its goals. "The customized, off-the-shelf solutions we use for loan origination and servicing are mature, but we were limited by their APIs. We were at the mercy of how fast they developed features and it was obvious that we could not continue with just point-to-point integrations using these solutions," says Chris Varro, Senior Managing Director - Systems Development at Homepoint. "We saw that we could build an event framework on top of those off-the-shelf systems to accelerate our own development and solve some of the business problems we were facing. A prime example was our loan redisclosure process, which was at the time slow, costly, and required significant manual effort to complete."

By incorporating Confluent and data streaming into its new IT architecture, Homepoint is reaffirming a cloud-first strategy that the company adopted when it launched in 2015 with core operations running in Azure. "Confluent enables us to see our data in motion, which was simply impossible with our existing systems," says Varro. "Now instead of being limited to seeing data at just one point in time, we can see how it has changed over time, which is critically important for us operationally. Much like the weather radar that shows how your situation has changed by the minute, seeing our data in motion with Confluent has enabled us to tackle long-standing business challenges, lower costs, and deliver improved customer experiences."

Having simplified and improved the loan redisclosure process with Confluent, the Homepoint team is now focused on doing the same for loan closures, underwriting, and servicing. They are also exploring the use of `ksqlDB` to accelerate the development of stream processing apps that join data from multiple topics. "We saw a great return on investment with Confluent on redisclosures, and we expect that to only increase over the next year and beyond," says Varro.

## Technical Solution

The Homepoint team recognized early on that it would be close to impossible to complete the extensive transformation they had undertaken without hitting some obstacle along the way. So, they worked closely with Confluent from the start to avoid as many of those obstacles as possible and quickly address any that they did encounter. "We relied on Confluent engineers as our subject matter experts to help make sure that we were making the right decisions and to train us up as we went," says Varro. "Our strategy was to put our team of sharp software engineers, who had no experience with Apache Kafka®, together with the sharp engineers from Confluent Professional Services, so that we could build off the experience and strengths of everyone involved."

After completing a short proof-of-concept project, the team immediately began work on the loan redisclosure use case. The high priority placed on this use case stemmed from the costs associated with the manual process that was in place. The objective of this process was to identify loans that met regulatory mandated criteria for informing the recipient of important changes to the loan (for example, a change in the mortgage insurance premium) that can occur between the time of the application and the loan's closing.

Previously, Homepoint loan specialists pored over static snapshots of loan data, looking for relevant changes, in a labor-intensive approach that was known as "stare and compare." Like all lenders, Homepoint was responsible for paying any cost increases that its specialists missed and thus were not redisclosed, amounting to millions of dollars in excess expenses annually.

To reduce both the financial risk of undisclosed changes and the manual effort required by the process, Homepoint set the loan data in motion. They used [Debezium PostgreSQL CDC Source Connector](#) to monitor changes in the PostgreSQL database (which serves as the storage layer for its off-the-shelf loan software) and continuously stream the changes to a Kafka topic. The team developed a microservice to consume from this topic, filter and interpret the messages, and then publish to a set of domain-specific topics (including one for just loan fees, for example) for downstream services. Data from these downstream services is then presented in a coherent, concise format that shows the loan specialists any loan changes that may require redisclosure.

The team used [Schema Registry](#) to ensure continuous compatibility as their schemas evolve. "We don't have any control over the PostgreSQL database our loan software uses," says Varro. "So we need to maintain multiple versions of our schema, which Schema Registry makes easy."

Homepoint is now well-positioned to streamline and automate more of its loan processes with an event-driven architecture based on Confluent and deployed on Azure. "The cloud-native stack lowers our cost footprint and our management overhead quite a bit, and we've been very successful with Microsoft Azure in that area, with respect to subscription, firewall, network management, and other services," says Varro. "With Confluent's fully managed cloud service and Kubernetes for deploying our microservices, we're moving beyond just VMs in the cloud to greater cloud maturity, and we're seeing that pay off."

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CHRIS VARRO, SENIOR MANAGING DIRECTOR - SYSTEMS DEVELOPMENT



## Business Results

### **Costs decreased by \$800,000 monthly; efficiency increased by 20%**

"On the redisclosure project alone, we estimated that our next-generation architecture—enabled by Confluent and running on Azure—would enable us to save \$500,000 per month while achieving a 10% efficiency improvement, because our systems tell the agents exactly what they need to look at, instead of having them 'stare and compare' for hours," says Varro. "When we implemented it, we found that we had underestimated: We're saving \$800,000 monthly with a 20% improvement in efficiency."

### **Near-real-time insights enabled**

"In the past, we only had snapshots of our data, every four hours or so, once it was loaded into Snowflake," says Varro. "With Confluent, we have much more visibility into loan data and how it's changing over time. As a result, we can answer much more sophisticated questions about our clients and the data they continuously feed us."

### **Pace of deployments increased by up to 40%**

"The core architecture that we have now, with dozens of microservices running in Kubernetes on Azure and integrated via Confluent, has many advantages over our old VM-oriented deployment model with one or two large code bases," says Varro. "It's easier to scale, and we can turn around features and changes 30% to 40% faster."

### **Proactive support received**

"The Confluent team has always been there for us, not only providing support when we needed help but also pointing out adjustments that we could make or suggesting alternatives to the way we were doing things," says Varro. "We don't find that with a lot of vendors we work with, and when we do it's a big multiplier for us."

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