A Case Study in Real-time Monitoring, Multitenancy and Reporting

Executive Summary

Callibrity was challenged with the task of helping PLXIS with several technical obstacles to improve developer support and to support multiple clients that would allow IPC to sell PLXIS services and create a new revenue stream for the business. During this project, the solutions proposed by Callibrity enabled PLXIS to solve bugs efficiently, facilitate scaled reporting, and use multitenancy to support multiple clients.

About PLXIS

PLXIS is a subsidiary of IPC that created a retail engagement platform providing payments, pre-paid, loyalty and offers to increase customer spend, allow for faster learning, and optimize digital innovation. About IPC (Parent Company of PLXIS) Independent Purchasing Cooperative (IPC) is an independent franchisee-owned and operated purchasing cooperative. IPC works to negotiate the lowest costs for purchased goods and services, while improving quality, enhancing competitiveness and ensuring the best value to franchisee members and their customers.
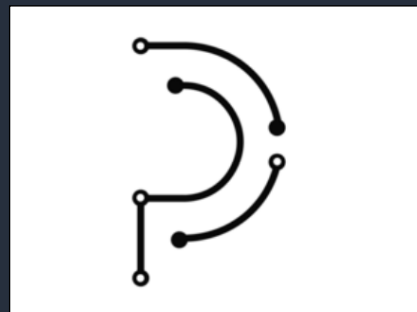
Challenge

First, it is important to note PLXIS was working with enormous amounts of data; this was in the range between 12-20 transactions per second. This led to large databases which resulted in difficulties when doing any queries or reports. The client hoped to sell additional tenants on their platform but selling PLXIS without appropriately timed reporting was a roadblock. It also took longer than desired for the client's support team to identify and solve bugs because of the difficulty identifying and loading problem transactions from a production PCI system. PLXIS was in need of a real-time solution to facilitate bug issue identification, so the support team could significantly reduce the amount of time it took them to handle problems.

Solution

A multi-pronged solution was needed to tackle the challenges that were presented. Callibrity started to help fix the original issue of working with the massive amount of data and slow speed of reporting by implementing a cloud solution on AWS with Data Pipelines and Elastic Map Reduce (EMR.) To address the difficulty of bug fixes, real-time monitoring of transactions was implemented.

About PLXIS

Industry:

Financial Services, Payments Processing

Headquarters:

Miami, FL

Callibrity Client Since:

2014

Callibrity was then asked to consider handling additional tenants, the reporting solution would not only need to improve in speed but also be able to scale for each tenant added to the platform. Since the solution was already in AWS, scalability was built in. This solution would provide appropriately timed reports with key metrics as well as visualizations to help explain the data to each tenant as well as a combined and federated report across tenants for the PLXIS executives. Real-time monitoring was implemented in AWS with the help of Splunk, which helped production support by helping solve bugs faster and more efficiently. Each transaction, when added to S3 from the platform, would also flow into Splunk through an AWS Lambda function. Developers were able to identify specific transactions quickly within Splunk instead of waiting long periods of time to get the data.

Results

These solutions led to several key results. Real-time monitoring allowed the support team to fix bugs faster and more efficiently than before. PLXIS was processing tens of millions of transactions using a file-based system which made it difficult for the support team to identify transactions quickly. Real-time monitoring improved identifying transactions exponentially which enabled developers to identify problems in seconds instead of hours. PLXIS did not have multitenancy to support its business previously. After adding multitenancy, PLXIS was able to support many clients on the cloud while keeping their data separate. Multi-tenant cloud also allowed for the ability to scale quickly. This led to a scalable and more efficient reporting solution. The improved reporting led to data being more easily accessible by company executives and this allowed quick reports to be made from any data source that was provided.

About Callibrity

Callibrity is a developer owned and managed custom software development firm that is dedicated to providing clients with quality software, improved coding practices, and modernized tech stacks. We provide subject matter expertise and solve complex problems with simple solutions for our clients ranging from midsize to Fortune 100 companies.