Background

A global payment processor with over 300 million customers worldwide chose GenRocket to address their test data challenges. The Payment Quality Architecture Team was the first to adopt GenRocket within the company, focusing on two use cases in the Payment Services domain.

One of the key use cases involved generating event data to simulate the process of authenticating credit card customers and adjusting their account balances in response to card payments.

This event data, critical for testing the payment processing system's accuracy and reliability, is generated daily by the company's internal teams responsible for managing customer authentication and payment disputes.

The data is stored in an AWS S3 bucket in the form of Parquet files, which contain the event data, and metadata files, which include event counts and total transaction amounts for corresponding parties.

Challenges

The team faced several challenges in managing this event data:

- Generating metadata files that accurately sum up amounts in each corresponding Parquet file
- Ensuring Parquet and metadata files match precisely
- Lacking a dynamic utility for converting JSON data to Parquet format
- Needing a solution that integrates seamlessly with their automated testing processes

Dependent on other teams and bound by strict file naming conventions, the Payment Quality Architecture Team had to choose between developing a custom Java utility for JSON to Parquet conversion or leveraging GenRocket's Test Data Automation capabilities.

GenRocket Solution

After evaluating their options, the team chose GenRocket to address their event data provisioning needs. GenRocket's platform provided key capabilities that solved the team's challenges:

1. **Dynamic File Generation**
    GenRocket's flexible synthetic data generation engine enabled the team to create Parquet and metadata files with the required naming conventions, including current date, time, and seconds. This ensured files matched precisely and could be easily identified and managed.

2. **Automated Data Conversion**
    Leveraging GenRocket's 700+ data generators and 100+ data formatters, the team automated the conversion of JSON event data into Parquet format. This eliminated the manual effort previously required and accelerated their testing processes.

3. **Seamless Test Automation Integration**
    The team integrated GenRocket into their automated testing suite, including their Jenkins CI/CD pipeline. This enabled them to efficiently provision the exact test data needed for daily regression runs, saving significant time and effort.

Benefits and Achievements

By implementing GenRocket, the Payment Quality Architecture Team realized substantial benefits:

*   **Reduced Dependency on External Teams**
    GenRocket empowered the team to independently generate the event data required for testing, eliminating their reliance on the company's internal teams responsible for managing customer authentication and payment disputes. This increased the team's agility and control over the testing process, enabling them to efficiently validate the payment processing system's accuracy and reliability.

*   **Significant Time Savings**
    Automating the JSON to Parquet conversion and file generation processes saved the team approximately one hour per day in their regression testing runs. Over the course of a year, this equates to over 250 hours saved, allowing the team to focus on higher-value tasks.

*   **Streamlined CI/CD Pipeline**
    Integrating GenRocket into their Jenkins CI/CD pipeline empowered the team with on-demand test data provisioning. They can now dynamically generate event data to match any testing scenario, enabling more comprehensive testing and higher quality software releases.

*   **Reusability and Scalability**
    The GenRocket solution provides a reusable and scalable framework for test data generation. The team can efficiently model additional event types and scenarios, provisioning billions of rows of data in minutes. This positions them to handle evolving testing needs and increasing data volumes with ease.

Conclusion

GenRocket's Test Data Automation platform enabled the Payment Quality Architecture Team to overcome their event data provisioning challenges. By dynamically generating Parquet and metadata files, automating data conversion, and integrating with their CI/CD pipeline, the team significantly streamlined their regression testing processes.

The time savings and productivity gains achieved in this use case demonstrate the value GenRocket provides in enabling efficient, high-quality software testing. The extensible nature of the solution ensures the team can effectively handle new event types and data scenarios, positioning them for continued success.

As adoption of GenRocket expands within the organization, the platform's capabilities for automated test data generation, masking, subsetting, and synthetic data generation will continue to drive efficiency and quality improvements across software development and testing functions.

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