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Navigating the Turbulence:
Addressing Performance Challenges with Policy Admin Systems for Commercial Insurance Carriers' Underwriting Transformation

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Introduction

The insurance industry is undergoing a rapid transformation, and the traditional methods of underwriting are being relooked. Historically, much of the rating and underwriting processes were managed manually, with underwriters relying on spreadsheets and proprietary systems to assess risks. These risks were then documented in mainframe systems governed by opaque rules. Today, however, the landscape is shifting toward more integrated systems, with homegrown applications transitioning to SaaS package solutions such as Guidewire, Duck Creek, Majesco, Origami and several other vendor platforms.

This shift is particularly significant in the commercial insurance sector, especially within the middle, large, and specialty markets, where the policies underwritten are often highly complex. These policies come with unique underwriting rules that were traditionally built into Excel spreadsheets and custom applications. As these rules are migrated to newer technologies, a critical challenge has emerged: response times and system performance.

As we evaluate these new technologies against the old manual processes, system performance issues have become increasingly apparent. Underwriters, who previously spent their time manually evaluating risks, now face delays due to the high volume of data processing required by the new systems. This performance slowdown, caused by the orchestration of various system calls, often leads to frustration among users, hindering the adoption of new technologies. Consequently, ensuring the performance of these systems has become one of the most significant challenges for IT teams during implementation.

In this article, we explore the intricacies of this transition, the performance challenges faced, and potential solutions to enhance system efficiency and user satisfaction.

Problem Statement

The rapidly evolving technology landscape in the insurance sector necessitates a reevaluation and transformation of traditional underwriting methods. Commercial middle-market and large insurance carriers face escalating challenges in scaling their operations to manage high-volume and/or complex policies. These policies often encompass thousands of commercial properties, buildings, vehicles, and drivers within a single contract. This complexity introduces numerous operational and technical hurdles, impacting insurers' efficiency, accuracy, and system performance. Adapting to these changes is crucial for enhancing competitiveness and operational effectiveness.

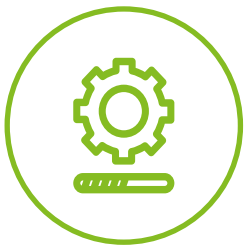
Data Entry Challenges and Inconsistent Formats

A fundamental challenge in this process is the handling of vast amounts of data, typically in the form of Excel spreadsheets that contain records of insured assets such as buildings, vehicles, and drivers. These spreadsheets often arrive from clients in varying formats, making it difficult for insurance carriers to upload them directly into their Policy Administration Systems (PAS). The lack of a standardized data structure complicates the ingestion process, as the data needs to be cleansed, transformed, and validated to ensure it adheres to the insurer's requirements. This manual intervention not only increases administrative overhead but also introduces opportunities for errors that can lead to inaccurate policy generation or delays in underwriting.

For example, an insurance carrier handling a commercial property policy for more than 1,000 buildings must first ensure that the data for each building is entered consistently. Any inconsistencies, such as missing addresses, incorrect valuation data, or discrepancies in property types, must be corrected before the data can be uploaded into the PAS. Similarly, in the case of commercial auto insurance, where a policy may cover fleets of more than 1,000 vehicles, the vehicle data, including Vehicle Identification Numbers (VIN), registration details, and associated driver information, must be accurately recorded. Given the sheer volume of data and the diverse formats in which it is received, this process becomes time-consuming and error-prone.

Overloaded Integrations and System Bottlenecks

Insurance carriers rely on third-party data to enrich the received data while performing their underwriting process. Once the data is properly formatted, carriers use third-party integrations to enhance the information and ensure its accuracy. For example, commercial properties may require integration with CoreLogic for property replacement cost assessments, while vehicle fleets may need VIN validation through LexisNexis. Additionally, driver records may need to be verified by querying Motor Vehicle Reports (MVRs) from various state databases.



However, running thousands of integrations simultaneously can overload both the third-party systems and the insurer's own systems. When an insurance carrier attempts to validate data for 1,000 vehicles or buildings at once, these systems often encounter bottlenecks. The high volume of Application Programming Interface (API) calls can strain external data providers, leading to failures in data retrieval or significant delays. Moreover, the insurer's internal systems, designed to process smaller batches of data, may struggle to handle the sudden influx of thousands of requests, causing performance degradation and slow response times.

In extreme cases, these bottlenecks can result in complete system freezes or crashes, preventing underwriters from performing their duties effectively. The integration delays further complicate the process, as underwriters are unable to finalize policies until all data validations and risk assessments are complete.

Policy Rating and Performance Issues

The final phase of the process, policy rating, introduces its own set of challenges. Calculating premiums for policies encompassing thousands of risk locations, vehicles, and drivers necessitates intricate algorithms and substantial computational power. Each location, vehicle, or driver contributes unique risk factors that must be assessed and rated according to the insurer's underwriting guidelines. As the number of risk factors increases, the complexity of the rating process escalates.

For instance, determining the premium for a fleet of 1,000 vehicles requires evaluating each vehicle's make, model, age, and condition, along with the driving history of each associated driver. This extensive data collection and analysis place a significant burden on the insurer's rating engine, which must compute risk scores, apply relevant discounts or surcharges, and generate a final premium for the entire policy. The computational demands of this process can result in slow system performance, causing underwriters to experience long wait times for rating results, system lags, or even complete system freezes.

These performance issues not only frustrate underwriters but also diminish the overall productivity of the organization. When the system is slow or unresponsive, underwriters are compelled to wait for results, delaying policy issuance. Moreover, poor system performance can have a cascading effect across the organization, as other users encounter slowdowns when multiple underwriters are processing large policies simultaneously.

Our View and Solution Approach

At the commencement of a transformation journey of a line involving “Large Schedules,” it is crucial to conduct an up-front analysis of the book of business to determine the number of policies that encompass large schedules data, such as a substantial number of locations (200+) or a large fleet of vehicles (200+). Utilizing analytics, predict the potential future numbers. Based on this data, proceed with the following steps.

Setting Business Expectations

Engage with the business to clarify the different types of policies and their unique requirements. Explain the differences in system resource usage between policies with 10 locations versus those with 200 locations, emphasizing the impact on operational efficiency. Collaborate to establish alternative workflows for underwriting large policies, ensuring these processes are both practical and efficient. Additionally, agree on Service Level Agreements to maintain high standards of service. Set clear thresholds for location or fleet sizes that will trigger these alternate workflows, ensuring all parties are aligned. This proactive approach will help manage expectations and streamline operations.

Our View and Solution Approach

In managing project work, it is crucial to identify tasks that involve “large schedule” story cards early on. Prioritize and front-load the design work at the beginning of the project to ensure comprehensive coverage. The design should not only address the common 90% of cases but also the 10% of outliers. Organize tasks so that prerequisites, such as the completion of Integrations like Prometrix for Locations or MVR for Drivers, are finished early. Initiate work on these tasks promptly to allow ample time for thorough testing. Develop a detailed plan to conduct performance testing early in the process, ensuring sufficient time to resolve any performance issues, which are often the most time-consuming aspects. This strategic approach will help in managing the project efficiently and effectively.

Technical Solutioning:

Developing a robust solution for managing large schedules is a complex and multifaceted challenge, particularly within the Middle and Large Commercial Markets. To ensure a comprehensive and effective technical solution, it is essential to consider all potential use cases meticulously. The following key points should be considered:

1

Compute Power

- Assessment of Compute Requirements: Determine the necessary compute power to efficiently process transactions, especially when handling more than 100 integrations simultaneously.
- Infrastructure Collaboration: Collaborate with the infrastructure team to ensure there are no performance bottlenecks, thereby maintaining seamless processing capabilities.

2

API vs Batch Processing

- Workflow Verification: Evaluate the current workflow to identify if certain synchronous API calls can be transitioned to batch processing.
- Business Collaboration: Engage with business stakeholders to define an acceptable workflow and establish a threshold for switching from synchronous to batch processing, ensuring optimal performance and efficiency.

3

Artificial Intelligence (AI) Integration

- AI Component Identification: Explore and identify AI components that can be leveraged to standardize incoming data as part of large schedules.
- Data Standardization: Implementing AI-driven data standardization can address one of the most significant challenges associated with managing large schedules, enhancing data consistency and reliability.

4

Rating Optimization

- Rating Process Evaluation: Assess and identify opportunities to optimize or modify the rating process for handling policies within large schedules.
- Efficiency Improvements: Implement changes that streamline the rating process, ensuring it is both efficient and scalable to meet the demands of large-scale schedule management.

5

Automation Testing

- Early Script Development: Create automation testing scripts early in the development process.
- Comprehensive Data Sets: Utilize comprehensive data sets that can repeat the process of testing the solution, ensuring thorough validation and reliability.

By addressing these critical areas, we can develop a technical solution that not only meets the current needs but also scales effectively to accommodate future growth and complexity in the Middle and Large Commercial Markets.

Conclusion

Commercial middle-market and large insurance carriers encounter significant challenges in managing high-volume and complex policies due to intricacies in data entry, integration overloads, and the computational demands of policy rating. These problems impede the efficiency of policy generation and adversely affect system performance, leading to delays in the underwriting process and diminishing overall operational effectiveness. Addressing these challenges necessitates a comprehensive approach that focuses on data standardization, scalable integrations, and optimized system performance, ensuring that carriers can meet client demands without compromising on speed, accuracy, or reliability.

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