kimputing

CenterTest

AUTOMATED RATE TESTING FOR GUIDEWIRE CLOUD MIGRATION

MAY 2024

PROJECT PERIOD: AUGUST 2023 - ONGOING

#guidewirecloud #testautomation #ratingtesting #agile #ddt #CSIO

TOPICS

Test Automation; Parallel Testing; CSIO Standards;
Data Validation; Insurance Rate Testing; Data
Transformation;

CONTRIBUTORS

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Executive Summary

A mid-size Canadian insurer partnered with Kimputing to accelerate their Guidewire Cloud implementation project by leveraging our CenterTest test automation technology. The first phase of this partnership was automated quoting and rating testing.

As a new Guidewire customer, the carrier needed a reliable partner experienced in Guidewire Testing to assist in the critical work of validating that current production rates from their legacy system could be recreated within acceptable tolerance levels in their new Guidewire Cloud environment.

11k
Average Daily Automated Tests

API **Performance** **E2E**

Customer Profile

DWP: >CA$1bn

Version: Guidewire Cloud

Guidewire Partner: YES

LOBs: Personal Lines

The project encompassed four main components: (1) payload transformation, (2) data-driven, automated quoting and rate validation in Customer's Guidewire Cloud, (3) comprehensive comparative analysis for Customer's actuarial, business, and development teams, and (4) binding verification to ensure rate stability and underwriting message accuracy.

Kimputing assembled a small, specialized development team to collaborate with the Customer, their QA partner, and their principal Guidewire Consulting Partner. Given the carrier's status as a new Guidewire customer, project success hinged on our team's ability to engage with all stakeholders and adaptively align our deliverables with the Customer's evolving expectations and development goals.

Challenges

The Customer converted their legacy production data into CSIO payloads, and their SI (Guidewire Consulting Partner) converted these payloads into an ACORD format consumable by Guidewire, via their CSIO Processor.

However, these payloads could not consistently nor accurately return quotes in the Customer's new Guidewire implementation.

Kimputing was tasked with designing an automated and comprehensive solution to efficiently validate the payload transformations against the new Guidewire rate books.

The Customer also requested a comparative analysis tool to assess errors and messages, as well as evaluate the accuracy of individual coverages and other critical data from each payload.

What is CSIO?

CSIO standards cater to the Canadian insurance industry, offering XML and EDI standards to streamline communication between insurers and brokers. While ACORD is globally recognized and utilized by Guidewire InsuranceSuite, Canadian insurers utilize CSIO standards to achieve seamless integration within their local market.

In this particular Guidewire Cloud Transformation, the Customer's SI provided a proprietary CSIO Processor, enabling Guidewire to utilize CSIO standards so their Canadian partners can maintain compatibility with both international and local insurance systems and standards.

Success Metrics:

>95%
Quoting Success Rate

>99%
Rating Accuracy

> " *The CenterTest automation framework is one of the best automation environments that I have seen in my three decades of being a software tester.*

Paul Holland

Kimputing Solutions

Data Validation for Payloads

Kimputing utilized CenterTest's data-driven testing functionalities to validate the Customer's rate book, and the transformations of legacy payloads for three data-sets:

- CSIO Request
- Legacy Rate Response
- Guidewire Rate Response (in CSIO format from the SI's CSIO Processor)

Dynamic Automated Quote Testing

CenterTest enables dynamic configuration of rate tests by allowing selection of individual data elements, or groups of elements. This dramatically enhances test efficiency and adaptability by allowing for flexible and customizable data-driven testing scenarios without writing new tests or hard-coding data. This also allows customers to maximize rate testing volume, touching as many policies as possible prior to migration.

2,500+
Daily Rating Tests

60,000
Available Rating Tests

Comparative Analysis

Kimputing utilized CenterTest's automated comparative analysis utilities, along with custom reports built specifically for the Customer, to benchmark the legacy rates and limits from production against the new Guidewire implementation. We improved the way the information was visualized by grouping common failures, errors, and messages, allowing stakeholders to focus on the most actionable and common problems. This focus allowed the customer to rapidly improve quote accuracy and rate reliability.

Our process included optional range validation, allowing for slight deviations of individual rate items. This helped fine-tune the accuracy of each test to ensure that results within acceptable tolerance limits did not produce errors.

Binding Validation

Though comparative analysis of quotes allowed rate book validation, rating testing is not complete until quotes are bound in Guidewire. With CenterTest, Kimputing reused an existing end-to-end test to bind **selected** quotes from the rate testing process **at the UI level** in PolicyCenter. This test also included the retrieval of Guidewire's Rating Worksheet, providing detailed rate calculations requested by the Customer's actuarial team.

We delivered these results via Report Portal to allow the customer's teams to further validate any rate changes, underwriting errors, or coverage messages that did not appear during the quote process.

Process Workflow
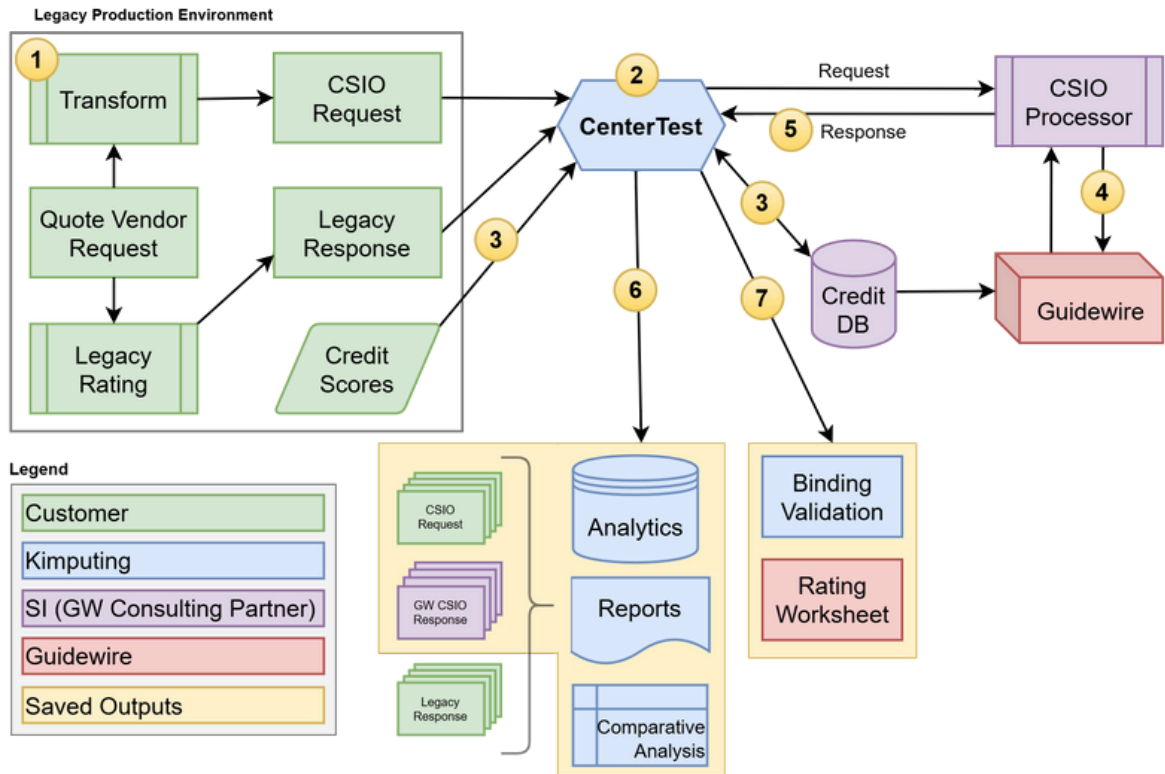
1	Customer transforms their Quote Vendor XML requests into CSIO format.
2	CenterTest processes and stores the CSIO Request for comparative analysis, then sends the quote request to the SI's CSIO Processor.
3	CenterTest retrieves credit scores for quoting from a protected file provided by the Customer, temporarily stores that information in the SI's protected DynamoDB credit score database, and deletes the information upon completion or failure of the CSIO Processor call.
4	The CSIO Processor converts the CSIO request into ACORD XML payloads required for Guidewire and sends through the new Guidewire implementation for quoting.
5	The CSIO Processor converts the Guidewire quote response back to CSIO format and sends the response back to the requestor, CenterTest.
6	CenterTest uses the data from the CSIO Request, Guidewire CSIO Response, and original Legacy Response to produce a comparative rate analysis, message summary, and additional supporting files.
7	Finally, CenterTest utilizes a data-driven UI test to bind selected quote responses directly in PolicyCenter, returning underwriting issues and associated rating worksheets to ensure complete end-to-end testing.

Technical Highlights

Kimputing created custom CenterTest properties to provide the customer with dynamic column selection, allowing them to select any column or group of columns, simply by its XML path with wild cards and dot notation.

```
1   RqUID = InsuranceSvcRs.RqUID

2   WiringType = InsuranceSvcRs.HomePolicyQuoteInqRs.HomeLineBusiness.Dwell.WiringTypeCd

3   RemarkText = $.InsuranceSvcRs.HomePolicyQuoteInqRs.RemarksInfo[?(@.RemarkText=~/.*Jo
    bNumber.*/)].RemarkText
```

Sample of dynamic property definitions showing Request ID, Wiring Type, & Quote Remarks

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Kimputing designed comparative analytics that enabled easy Guidewire Remark error prioritization by displaying both the description and frequency of all returned issues.

	A	B
1	Issue	Count
2	Loc 1 - Voluntary Medical Payments is required and has been added.	5867
3	Backdating - refer	5259
4	Risk zone not found - refer	4315
5	Loc 1 - Deductible of Detached Private Structures is not valid and has been updated	3781
6	Loc 1 - Guaranteed Replacement Cost is no longer available and has been removed.	3329

Statistics | Failure report | Remark Issues | MessageStatus | Data | +

Sample set from actual data

Kimputing followed the same process to highlight Expected Value errors.

	A	B
1	Issue	Count
2	CovLimit F▇ -> Expected:10000 Actual:20000.	3999
3	CovDeductible I▇ -> Expected:1000 Actual:500.	1365
4	Message Status returned from API is ERROR	1043
5	The quote did not return FullTermAmt value.	177
6	CovAmt I▇ -> Expected:38 Actual:0.00.	57

Statistics | Failure report | Remark Issues | MessageStatus | Data | +

Sample set from actual data

Kimputing assisted the Customer in drilling down on specific Remarks and Failures by isolating that message in the "Data" sheet of each workbook to identify the payload to recreate and resolve the error.

One of the most significant challenges presented to Kimputing during rate testing was the secure handling of credit score information.

We recommended and implemented a process to provide credit score information to the rate test **only when the test was running** (see Process Workflow item #3). Kimputing worked closely with the Customer and their SI to understand the SI's DynamoDB credit score database and properly match scores by an individual's name and address. This allowed CenterTest to securely insert, update, and delete credit score information as part of the test.

Project Outcomes

Kimputing designed an automated rate testing process with CenterTest to assist our Customer in validating that their new Guidewire Cloud implementation can consistently produce the comparable quote as their legacy system when utilizing the same payloads. Success is measured by (1) quote return rates between 95% - 99%, depending on the product and region, and (2) rating accuracy above 99% for all returned quotes.

CenterTest produces comprehensive comparative analytics that provide critical information in an easily digestible format to all project stakeholders based on their respective needs. This allowed each team to easily identify and focus on the highest priority issues, dramatically accelerating the development process.

The Customer's test consultant, Paul Holland, was primarily responsible for assessing payload translation issues that caused quote failures, which were then resolved by the Customer's team.

> " *The data provided in CenterTest's comparative analytics spreadsheet greatly facilitated our work; reducing the amount of effort to summarize the results and locate the payload translation issues to less than a quarter of the time it would have taken without it.* "
>
> *Paul Holland*

The Customer's actuarial team was tasked with identifying rating discrepancies and their causes (e.g. incorrect application of discounts, improper mapping or reading of elements, etc.), and relating the errors to the SI, or the appropriate internal team.

CenterTest's integration with the Customer's Azure pipeline also made it simple to validate our solution based on the errors identified in the rate testing process. Furthermore, this process is fully extensible to any other type of API testing process, providing the Customer with a known framework for future automated API testing initiatives.

CenterTest

Purpose built for Guidewire - and capable of so much more

INSTANT VALUE
WORKS WITH YOUR GUIDEWIRE SOURCE

FULL SPECTRUM TESTING
E2E; API; UI; PERFORMANCE; DDT

PERFORMANCE TESTING
USING FUNCTIONAL TESTS, CUSTOM ENVIRONMENTS

SUPERIOR ANALYTICS
INTEGRATE WITH ANY TEST MANAGER

UNLIMITED USERS
ONE LICENSE, UNLIMITED USERS & TESTS

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