





**CresTech is a market leader in Outsourced Software Testing Services providing Consulting, Resourcing, Training and Products to a varied clientele and help them with improving their Testing Processes and Quality. The company implements Quality and Testing Solutions for its customers in order to meet their timelines, budget and quality goals.**

**The software testing services span across enterprises such as Banking and Finance, Insurance, Media & Entertainment, Telecom, ERP and Travel & Tourism. Nurturing innovation, and with their specialization in automation, CresTech has helped with increasing productivity by over 300% and provides cost and test effective solutions to its customers. As an IBM Premier Business Partner, CresTech offers its clients a comprehensive solution suite related to IBM Rational products.**





### **Solution Synopsis:**

The solution implemented was to benchmark the upgraded system and tune it to support 300 users. Custom coding in scripts helped reducing the analysis effort thus maximizing the efficiency of performance analyst.

### **Client Background:**

Max New York Life Insurance Company Ltd. is a joint venture between New York Life, a Fortune 100 company and Max India Limited, one of India's leading multi-business corporations. Max New York Life offers a suite of flexible products. It now has 26 life insurance products and 8 riders that can be customized to over 400 combinations enabling customers to choose the policy that best fits their need.





### **Business Need:**

Upgradation of Ingenium to a newer version realized a need of benchmarking the current setup and tuning the new clustered environment to support a peak load of 300 concurrent users.

### **Solution Implementation:**

In order to simulate a load of 300 users having different workflows, Rational® Performance Tester was used as load simulating and result analysis tool.

The solution provided included the benchmarking of a new upgraded environment by using out-of-the-box results provided by Rational® Performance Tester.

Once the benchmarking phase was over, tuning of environment was performed by simulating the load using Rational® Performance Tester.

### **Benefits of the Solution:**

**Use of custom codes in Rational® Performance Tester to capture different types of failures/ errors and other statistics helped performance analysts to easily correlate the behavior of the application under load with the results, and find the bottlenecks in application.**



### **Solution Synopsis:**

Solution for Regression testing was implemented by using automation tool (Rational® Functional Tester). Test cases of previous build were automated using the keyword driven framework approach. Overall regression testing time brought down by 60% using keyword driven approach. As automation was adopted by business analysts and development team, Test coverage increased from 35% to 72%.

### **Client Background:**

For 20 years, Perot Systems has been providing technology-based business solutions to their clients in in healthcare, government, manufacturing, banking, insurance and other industries. They blend strategic design, proven technology and timely delivery to create effective solutions that maximize returns on IT investment.





### **Business Need:**

The application was developed for a portal providing hotel accommodation worldwide, offering reservation services through its own network of localized websites and its call centers. It gives travelers one of the widest selections of accommodation on the net, including both independent and major chain hotels as well as self-catering in over 80,000 properties worldwide. The company offers a one-stop shopping source for hotel pricing, amenities and availability and also specializes in providing travelers with accommodation during sold-out periods. For bi-weekly build releases, regression testing of overall application was a challenge with limited testing resources and time.

The application was replicated for 26 different locales and hence needed to be tested individually for all the locales. Thus multiplying the effort by number of locales (26).

### **Solution Implementation:**

Regression testing was implemented by using automation tool (Rational® Functional Tester). Test cases of previous build were automated using the keyword driven framework approach. A unique approach was designed to test the application for different locales by reusing the coded keywords. All the locale data was maintained in Excel sheets so that sudden changes in any of the local specific data could be easily incorporated in tests. Also, creating scripts for any new locale was as simple as filling new locale specific data in just one Excel sheet.

### **Benefits of the Solution:**

- **Regression testing of all the applications (local specific) became cheaper.**
- **Overall regression testing cycle was reduced by 60%, promising faster delivery of builds.**
- **Creating whole test suite for any new locale covered was just a job of a mere 3 hours in comparison to traditional automation techniques which took up to 2 days.**
- **Use of keyword driven approach enabled SME's (non- technical users) to maintain and run the test suites thus increasing test coverage from 35 to 70%.**



### **Solution Synopsis:**

A solution of automated regression testing pack for the policy administration system was based on keyword driven framework. The solution successfully reduced the overall testing cost by 60% and testing cycle time by 50%. Ease of use and less maintenance cost helped in faster and hassle free usage.

### **Client Background:**

Max New York Life Insurance Company Ltd. is a joint venture between New York Life, a Fortune 100 company and Max India Limited, one of India's leading multi-business corporations. Max New York Life offers a suite of flexible products. It now has 26 life insurance products and 8 riders that can be customized to over 400 combinations enabling customers to choose the policy that best fits their need.





### **Business Need & Challenges**

With growing competition in market, business realized the need of frequent launching of new life insurance products. With this business goal, IT had to deliver at the same pace. Major releases of policy administration system (Ingenium) now contained more products and extra functionalities which increased the pressure on development and testing teams to deliver fast without compromising on the quality. Regression was the biggest challenge while testing the system. With every new release it consumed more and more resources and time.

### **Solution Implementation:**

The solution to the above business need was provided in terms of automated regression pack using IBM Rational's Rational® Functional Tester.

With the help of an onboard CresTech automation testing team, Max New York Life implemented an automated regression testing pack which automatically tests the sanity of old functionalities in new releases.

The solution was based on keyword driven approach which ensures the reusability of code and flexibility of framework. Pack delivered high maintainability efficiency and faster execution of cases to ensure the sanity of builds.

### **Benefits of the Solution:**

**As the solution started taking shape and was ready to use in phase 1, it delivered a reduction in testing cost by 40%. After finishing Phase 2, overall testing cost reduced was around 60%.**

**Implementation of pack reduced the testing cycle time by 50%.**

# Automation Framework for Travel Transportation and Logistics (TTL) Domain

## Keyword Driven Framework using IBM Rational® Functional Tester

### A Perspective

With web applications becoming the lifeline of business across the globe, business houses are seeking to expand their reach by providing robust and scalable web based solutions to their clients spread across geographies. As a result, the complexity of the application has increased many folds over the past couple of years. With increasing complexity and wide reach of web applications, exhaustive testing has assumed a very important role for organizations. However, shorter development cycles and ever changing business dynamics do not permit time for conducting exhaustive testing. Hence clients are constantly looking to increase their test coverage at the same time decreasing their overall testing cost.

This case study discusses how the Crestech Automation team helped a travel and hospitality domain giant to cut down on its regression testing cost by 60% through its innovative approach to Test Automation. The challenges thrown by the application were unique in terms of custom controls on the application and deployment model. However, automation specialist from Crestech helped design an innovative solution for the client thus helping the manual testing team concentrate on testing the new features by taking the complete onus of regression on test automation suite.

### Client Background:

Our client is the parent company to some of the world's leading travel companies, providing travel products and services to leisure and corporate travelers in the US and around the world. It owns and operate a diversified portfolio of well-recognized brands including a range of other US-based and international businesses. Together, these popular brands and innovative businesses make it the largest online travel agency in the world, the third largest travel company in the US, and the fourth largest travel company in the world.

### Application/Product details:

The application developed was for the portal providing hotel accommodation worldwide, offering reservation services through its own network of localized websites and its telephone call centers. It gives travelers one of the widest selections of accommodation on the net, including both independent and major chain hotels as well as self-catering in over 80,000 properties worldwide. The company offers a one-stop shopping source for hotel pricing, amenities and availability and also specializes in providing travelers with accommodation during sold-out periods.





## Key Problems | Challenges:

- The application is deployed across 27 different locales Point of Sales (PoS). Every build has to be deployed across 27 different PoS at the same time. This increases regression testing effort quite considerably. Handling this situation was becoming increasingly becoming difficult for the client
- Being in hospitality industry, the changes to the application were quite frequent (new promotions coming out every 15 days). This put extra pressures on the testing timeline.
- With a registered user base of over million users, application downtime was a complete no-no.
- Client's team primarily consisted of Business Analyst and manual tester having no background of automation. However client wanted a automation solution that can be used by the testers to automate their test cases.
- Client wanted to use the automation on an immediate basis and thus the initial timeframe required for building scalable frameworks was out of question.

## Automation Tool:

Based on the business requirements and application suitability, the mandate from the client was to use IBM Rational® Functional Tester for automating the application.

## Our Solution:

Keeping in mind the dynamic nature of the application and typical end users profile, our Automation analyst decided to build a scalable Keyword driven Framework for the client.

- a) The Business components of the application were mapped to keywords in the framework
- b) The keyword driven Framework would present a simplified interface to the end user to put together the keywords to generate a test script. This facilitates the preparation of automation scripts for new functionalities by business analysts thus reducing the effort and time required to write scripts for new functionalities incorporated in the application.
- c) To report the automation test run results to the geographically distributed team, the Crestech team built a web based reporting interface and integrated it with Automation framework. Through this approach, as soon as the Test runs were over, the results were automatically available on the online result portal. The managers could also view different reports concerning the feature health and overall health summary
- d) To save the initial time required to build the libraries for this approach, our automation analyst suggested a unique Three phased approach to test automation. This enabled the testing team to start using the already developed scripts by automation team to regress-test the functionalities while automation team, parallel developed the library components required to build framework

## Approach:

CresTech followed a Phased approach.

- Phase-1- Conventional automation approach (Record and playback)
- Phase-2 – Development of library classes
- Phase-3 – Keyword driven framework approach

**Phase-1-** Conventional automation approach (Record and playback)

- Recording of scripts where each script corresponds to one test case.
- All the object were in object repository
- Scripts were Point of Sales specific

**Phase-2-** Development of library classes

- Development of library classes and functions
- Discontinued the use of object repository
- All the objects were dynamically recognized at run time
- Scripts were data and Point of Sales independent
- Only 2 Point of Sales were automated
- All the test data was created in excel sheet.

**Phase-3-** Keyword driven framework approach

- Further development of library classes and functions
- Keyword driven approach incorporated
- Results were stored in form of excel sheets and jpeg images
- Scripts were the combination of keywords
- Scripts were no longer made in Rational® Functional Tester environment. All the scripts were in form of excel sheet, and can be developed without any knowledge of automation tool.

## Engagement Model

CresTech team: 4 +1 (onsite) Member Team. Automation Experts in Rational® Functional Tester  
Client team : Black-Box Testing Team

CresTech team was responsible for designing Automation Strategy and Planning, training the Core Black-Box testing team to ramp them up on RFT and handling Client interaction.

## Key Benefits:

- Reduction of regression testing cost by 60%
- Reduction of Regression cycle by 75%
- New scripts could even be created by manual testers or business analysts.





### **A Perspective:**

Increasingly companies are coming to realize that delivering high-quality software on time and on-budget requires that they partner with the best-of-breed vendors for all aspects of the software development process. These companies want to use more than one vendor, allowing them to select vendors who are experts in development, as well as vendors, who are experts in software testing.

In addition, Software Testing is considered a “well-defined” activity and that’s what makes testing especially suitable for offshore outsourcing, which is a great way to cut costs, reduce time-to-market, and increase quality. So, more and more companies are looking for independent testing partners, who can take care of their complete testing activities.

Some of the main advantages in favor of an independent testing partner are

- Companies gain access to trained testing experts
- Companies lower risk, because independent testing partner has no vested interest in the developed software.
- Companies can save money by tapping smaller outsourcing markets.

This case study discusses how CresTech team helped health care and insurance giant achieve their business objective by providing the above mentioned advantages.\

### **Client Background:**

Max New York Life Insurance Company Ltd. is a joint venture between New York Life, a Fortune 100 company and Max India Limited, one of India's leading multi-business corporations. Max New York Life offers a suite of flexible products. It now has 26 life insurance products and 8 riders that can be customized to over 400 combinations enabling customers to choose the policy that best fits their need.





## **Business Challenge:**

Max New York Life's existing core system is a combination of three core products taking care of Policy data, Agent data and Policy documents. These three core systems are the lifeline of Max New York Life's operations in India and the acceptable defect leakage for these systems is as low as .0001%.

Apart from these three core systems, there are more than 100 satellite systems comprising of customer service portals and promotion management systems build around the main core systems. The testing of these systems posed a unique challenge due to highly dynamic and ever changing business scenarios.

Max New York Life has contracted a third party to undertake significant development and maintenance of its core IT systems. CresTech was contracted separately to provide a structured testing approach to the program and take ownership of complete testing of the core Systems as well as satellite systems.

The challenge was to provide a structured testing approach, while reducing the regression cycle and thus the overall time and cost of the testing activity. Another challenge was to create strategy for performance testing of all the core systems on various intervals.

Another challenge was to help Max New York Life's team increase the acceptance of their IT solutions among their user base by testing the applications from end user's perspective. This was critical since management was looking forward to these business applications to cut down on their inbound service calls and hence a significant cost saving.

## **Solution:**

Defining a rigorous testing approach was critical in ensuring the client could measure the software quality throughout the lifecycle of the program.

We took a phased approach:

- A) At the very start, CresTech setup a team of insurance domain experts along with test analysts to analyze the system, study the processes and define a roadmap for undertaking the QA activities for Max New York Life's core system.
- B) As a part of three pronged strategy for Max New York Life, the CresTech team started with testing the products in their end release cycle (System and Integration Testing). The manual testing team helped set up the User Acceptance Testing environment and participated in the User Acceptance Testing.

## **Advantage:**

The CresTech team got a fair idea of business expectation by participating in User Acceptance Testing. This helped the team test the other products from End user perspective thus resulting in high acceptance of Max New York Life IT solutions among business users.

Also since most of the solutions had non IT users as their consumers, performance was a major criterion to measure the success of a product release. We helped instill a highly specialized team of performance testing consultants to test the systems and find performance bottlenecks early so that business continuity is maintained once these systems go live.

- C) In the second phase, the team got involved in mid-life products (Integration testing) and started with the functional testing. To cut down on Regression testing cost for these products, the automation analyst from CresTech devised an out of box automation test approach that would help Max New York Life team of Developers and Business Analysts to start using automation for data-entry and regression testing.

**Advantage:**

By bringing the power of automation to the Business analyst and development team, we ensured a better testing of developed components and their integration early in development life cycle thus cutting the costly bug fixing effort later on.

- D) We commenced this phase after successful implementation of phase1 and phase 2. Here, CresTech domain experts were involved with the overall system inception and development for new products right from the beginning. This involved activities like Test planning and estimation, Test strategy preparation, setting up Project tracking and management practices.

**Advantage:**

A better Test planning beginning from very early in Software Development Life Cycle helped the client's IT department deliver releases on time and with highest quality.

**Key Benefits:**

- **Reduction of regression testing cost by 60%.**
- **Reduction of Regression cycle by 50%.**
- **Increase in acceptance of products among business users.**

**Client Testimonial**

"Outsourcing the Testing activity was a major decision for us and we were looking for a partner, who could understand our business and integrate seamlessly with our processes. I am glad we found CresTech."

Padamshree Shagrithaya, VP- Information Systems





**As the Innovator's Innovator<sup>®</sup>, IBM is committed to helping companies thrive in an era of intense competitive pressure from all corners of the globe. So, when we see our clients changing the playing field and driving real business success, we want to give them a chance to spread the word.**

**Its a new business era. everyone's talking innovation. Its no longer enough to offer unique products and services - now you have to create competitive advantage by doing business in a whole new way. You've got to be special.**

**Clients referred to in this book have demonstrated the special capabilities that make their organisations stand out from the crowd. These special IBM clients have leveraged IBM Rational software solutions and products for business innovation and competitive advantage. These clients are innovators and leaders and we are proud to share their success.**

**To participate in or learn more out becoming a referred client, please contact us at [info@crestech.in](mailto:info@crestech.in)**

## **CresTech Software Systems Pvt. Ltd**

A 72 Sector 2. Noida, UP 201301. India

Phone: + 91 120 4320421

