

Case Study
Software Testing

Stress Testing of a Map-Aided Vehicle Tracking and Scheduling System

Business Need

The American package courier and freight business faced the double pressures of consolidation and unstoppable increases in fuel costs. In mid-2008, pump prices were already double those prevailing in early 2007. As well, the recent decision of long-time price leader DHL to “co-locate” dozens of routes with erstwhile competitor UPS revealed just how fragile are market positions built through decades of promotions.

In Omaha, regional freight leader Red Ball Trucking¹ was keener than most to maximize operating efficiencies out of its substantial fleet of trucks and vans and thereby maintain margins in the face of low-cost rivals. In March 2008, a brand-new map-based adjunct to the company’s proprietary logistics and routing system neared rollout. Extensive “white box”, line-by-line testing had eliminated most of the gross errors but the Red Ball CEO was concerned about the scalability of the program test bed. A mandate went out to:

- Find out whether the map-enhanced vehicle tracking and scheduling system would remain stable at benchmarks of 50, 100 and 1000 concurrent users.
- Clean up any remaining bugs not caught by in-house QA,

Solution

The Quality SoftPro, an independent testing unit of HyTech Professionals got engaged, bringing into play a customized independent load test suite of programs that:

- Exposed the map-supported UI and linear programming application to the maximum current user load and a 50% safety factor to account for foreseeable near-term expansion by the company.
- Stress Tested the overall capacity of the system and identified bottlenecks that could forestalled when the program went live.

¹ The proprietary and “work for hire” nature of our independent software development services requires that client names, revenue projections and other sensitive information be kept confidential and disguised.

Quality SoftPro

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- Reduced costs markedly by emulating the maximum number of concurrent users that would attempt access over the company network.
- Tested offline the ability of the system to respond to hundreds of terminals and process thousands of interactive requests per minute.
- Commenced immediately because the Quality SoftPro tested with a mix of popular platforms and scripting languages.

Our Role

Quality SoftPro ably engaged with Red Ball as external software testing and quality assurance partner. Our team of software architects and systems engineers pushed the Red Ball system to its limits.

Solution Benefits

Load testing by Quality SoftPro helped in:

- Slashed test time by 75% over physical methods and because the last emulation runs occurred live without slowing down server-user processing time one bit.
- Saved Red Ball 55% off the passed-on costs of other load testing packages on the market.
- Optimized the new system by identifying and resolving hardware/software bottlenecks before they could trigger dissatisfaction and operational downtime when online.
- Ultimately, enabled Red Ball to gain incremental operational efficiencies and grow profits in unfavorable market conditions.

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