

## Motor Insurance - Road Speed and Zone Validation System

### Client

Client specializes in providing motor insurance solutions at a competitive price. Their platform enables motor insurers to see the driving behaviour of their customers in near-real time through machine learning and Internet of Things. This allows the insurers to uncover new insights as to what constitutes high risk, adjusting their portfolio, encouraging safer driving and reducing claims costs as a result.

### The Challenge

One of the biggest challenges that the organization faced was to simulate Asynchronous Telematics devices' messages and send those messages to Azure Queue, and in achieving stability in the application behaviour at peak performance and scalability levels. The system without any solid, well framed methodology for finding or predicting system behavior and performance under real time stress became very cumbersome to use. The roadblocks the client came across were-

- Identifying the cause due to which application was not able to handle the desired load
- Finding out the tipping point of the application and the maximum point to which the application could be pushed, on a modular level (maximum requests that can be handled by each back-end services e.g., CRON jobs, road speed validation, etc.)
- Knowing the process to send multiple messages (including parameters - Device ID, Location, Speed, Speed limit, Timestamp, Distance, etc.) to Microsoft Azure queue for performance testing
- Collecting data, such as response time (processing time) and number of events processed of a module/service during the load test run
- Knowing the behaviour of the system with various load parameters with different application/DB server configurations
- Verifying messages after processing on Azure Queue for extracting device location and tracking information

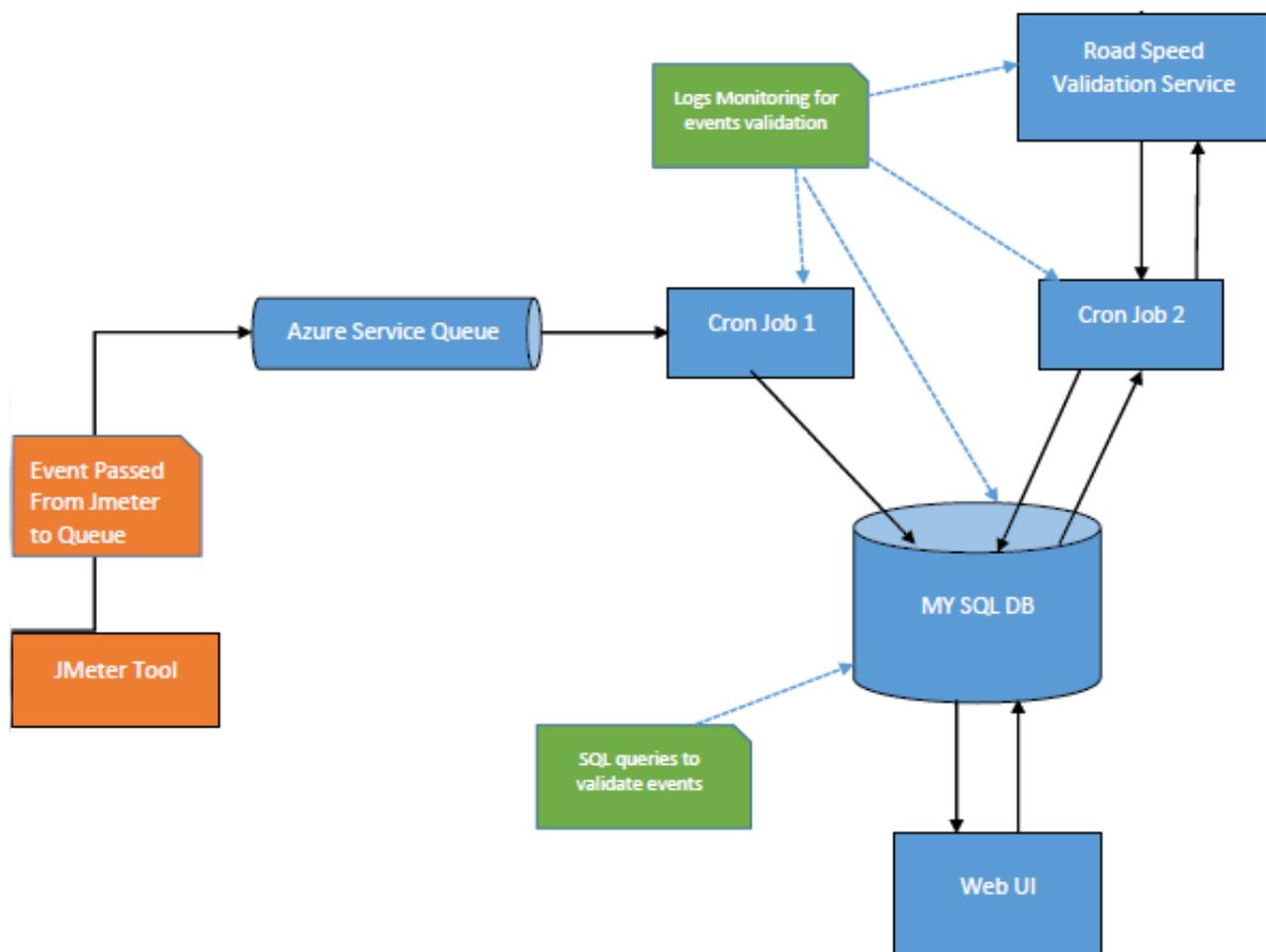
### The Solution:

Performance and Load Tests were designed after thorough analysis of end to end workflow of application under which our team –

- Identified performance impacting scenarios of system
- Used Open Source JMeter as a performance testing tool, with standalone Java code also written for modules to be tested

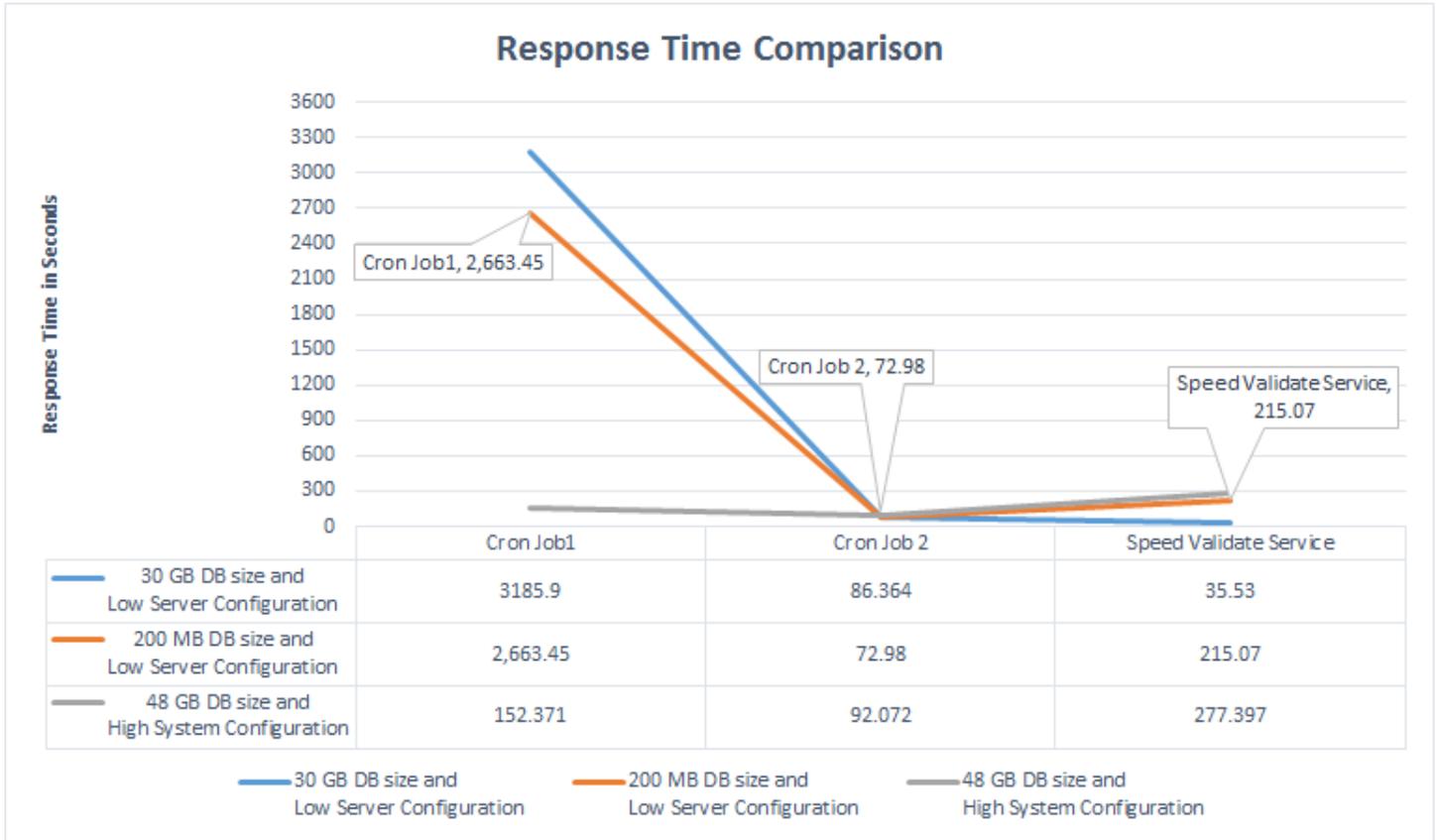
- Reviewed various telematics devices' parameters and messages' structure and simulated similar messages from JMeter
- Implemented various sets of plugins and created JMeter scripts as well as java code for sending messages to Azure queue
- Created performance scripts in such a manner that it produced consistent, measurable and repeatable load tests; designed to mirror the client's live production environment, user loads, business patterns and throughput, where applicable, projecting the future growth
- Created JMeter scripts for measuring the response time of system's back-end services and also for the number of events that are processed at a particular time period (5 minutes)
- Configured database before load test runs to check server behavior under load with different DB sizes
- Implemented cron jobs on servers for tracking RAM and CPU usage, after a specific time period, during the load test run
- Conducted load tests with different vusers load (20 vusers, 63 vusers and 100 vusers) to simulate 300 to 4,500 messages processing every 5-minutes by the cron job and different server configurations to observe variation in system behavior when put under different load
- Performed trend analysis to identify scaling issues that may impact the client down the road

#### Expected QA environment for Load/Performance testing



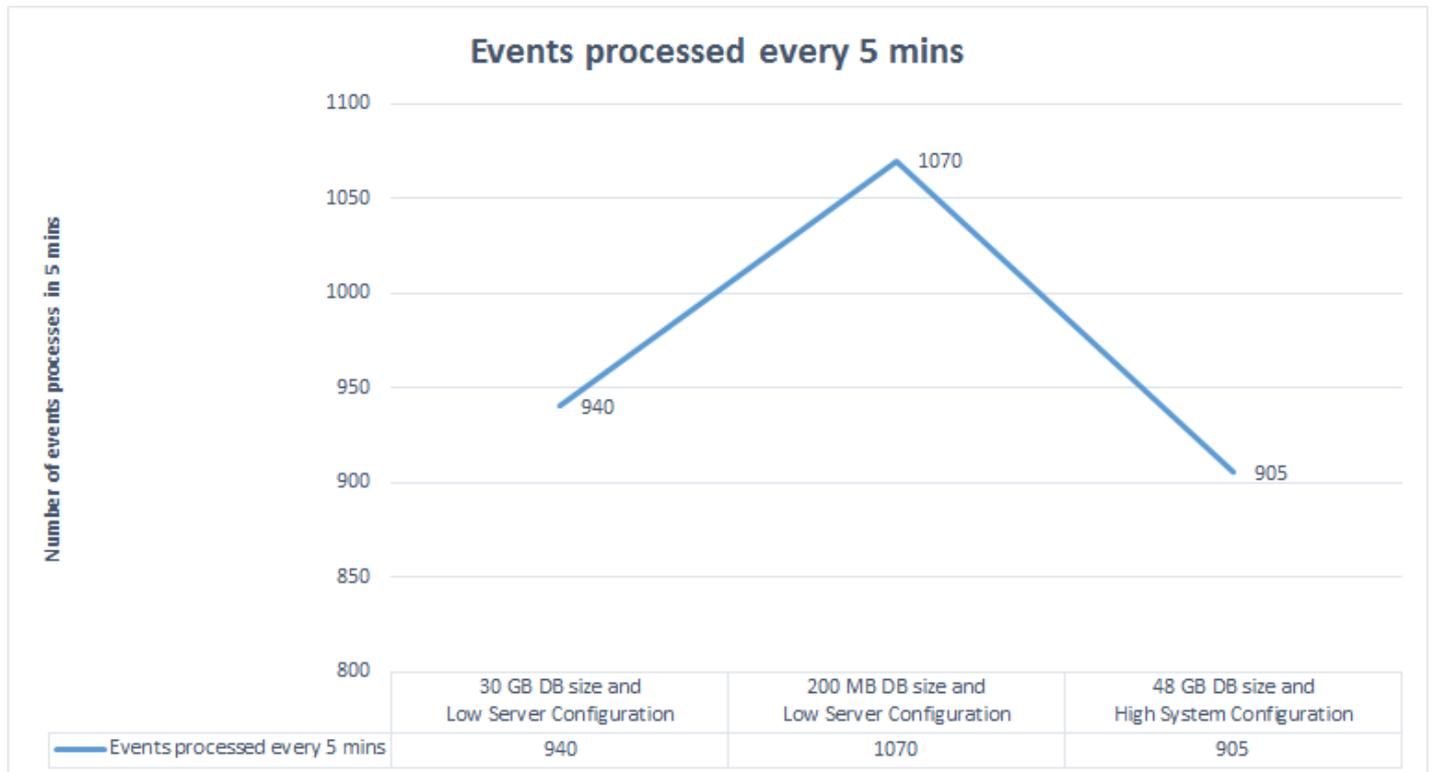
## The Benefits

- The development team could now identify the system’s glitches occurring due to code and services and the performance impacting areas in the system



- After optimally deciding various server configurations, the client was able to see the variation in results when load test was executed with different configurations

- After advising the hardware configuration, the client was able to reach optimum performance



QA InfoTech’s team of experts have both the ability and flexibility to leverage any popular state- of-the-art performance tool or utilize QAIT’s custom framework built around a rich supply of open source performance testing options. We, at QA InfoTech, create and execute scripts in a very consistent, measurable and reusable manner to mirror client’s live production environment, user loads, business patterns and throughput which are applicable and are also able to accommodate future growth projection.

## About QA InfoTech

At QA InfoTech we specialize in providing independent offshore software testing and unbiased software quality assurance services to product companies, ranging from the Fortune 500 to start-up companies.

Established in 2003, with less than five testing experts, QA InfoTech has grown leaps and bounds with its three QA Centers of Excellence globally; located in the hub of IT activity in India, Noida, Bangalore and our affiliate [QA InfoTech Inc.](#) at Michigan USA.

- ✓ Currently we have 1000+ QA Engineers and Domain Experts.
- ✓ QA InfoTech is an ISO 9001:2008, CMMi Level 3, ISO 20000-1:2011 and ISO 27001:2005 Compliant Company
- ✓ Thought Leaders in Test Automation, Performance Testing and Accessibility Testing

In 2010 and 2011, QA InfoTech has been ranked in the top 100 places to work for in India. We are top 50 Best IT Companies To Work For in 2012, 2014, 2015 & 16 in India For more details, please refer to our [blog on this event](#).

*“We assure the highest degree of Excellence and Accuracy in our engagements. Once you have placed your trust with us, rest assured we guarantee an elated peace of mind”*

### QA InfoTech Inc. U.S.A.

32985 Hamilton Court East, Suite 121,  
Farmington Hills, MI 48334 U.S.A

 +1 469-759-7848

### QA InfoTech Pvt. Ltd. (Head Office)

A-8, Sector 68  
Noida, U.P, 201309, India

 +91 956-000-0079

**For More Details:**

Contact Us: [info@qainfotech.com](mailto:info@qainfotech.com) | Visit Us: [www.qainfotech.com](http://www.qainfotech.com)