Neotys

CASE STUDY

Trimble

Trimble delivers outstanding app performance for web and mobile users with the help of NeoLoad

Trimble

> “Using NeoLoad, our team was able to deploy the first version of our mobile application with confidence and without the risk of losing traffic, revenue or employee productivity.” *- Jim Duffy, Trimble’s QA Performance Tester*

BACKGROUND:

Trimble is headquartered in Sunnyvale, California, and operates in more than 35 countries. The company holds more than 1,000 patents and is a leading provider of advanced location-based solutions for businesses across industries like construction, environmental, government, and agriculture.

Civil Construction is a key industry of Trimble’s client base. One division of the company serving as a joint venture with construction company Caterpillar is called Virtual Site Solutions (VSS). This division’s core product, VisionLink®, integrates construction site equipment telmatics, allowing customers to collect, manage and analyze complex information faster and easier, making them more productive and profitable. When this application was first launched, it helped customers manage their construction assets like tractors and trailers from one web client user interface.

Performance and availability of VisionLink web and mobile application is critical to successfully detecting and monitoring these large construction assets. Jim Duffy, Trimble’s QA Performance Tester asserts, “some of our clients own a fleet of large multi-million dollar mining trucks, and any one of these trucks can haul up to 200 tons of high grade ore, which is how the company makes its money. So if there is ever an issue with the truck causing it to go down for two or three days, the client can potentially lose millions of dollars.”

“Using VisionLink, owners can see that status (location, fuel level, tire pressures, temperatures, and hours) of each asset in their fleet. In addition they will be notified of any upcoming maintenance or alerted about any problems so they can be taken care of with a minimum of downtime,” Duffy says.

“The failure of the application to detect any one issue could mean significant revenue loss for our clients in the area of millions each day.” With so much money on the line, Trimble needed to ensure flawless application performance for its clients.

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CHALLENGES:

While the performance team supports development in the US, India, and New Zealand, the company shares one central data center, located in the US. The infrastructure behind the data center is large and complex meaning a lot of data storage and transmission. While the launch of the VisionLink web application brought enormous opportunity for its clients, the company lacked a performance testing tool that could monitor the availability and performance of the application under load while simulating the end-user's activity. Without an ability to load test the application, the company faced the anxiety of being able to support a continuously growing business.

Trimble was also planning to launch a mobile application to help equipment owners in the field be able to locate and monitor their equipment with greater ease. Using GPS capabilities, the mobile app allows for equipment owners to be able to identify which specific asset/s (amongst numerous others in the field) required maintenance. The mobile app however brought the added complexity of performance issues across devices and network conditions, with slower transmission times than the web application they had
in place.

"Our industry poses a challenge for mobile. Many of these projects sites are very remote, so when we service equipment being used to build an underground subway system, for example, we have to assume that our clients will access their app under sub-optimal mobile network conditions." An additional sticking point Duffy expresses will be the ability to keep track and monitor a vast project site containing at times hundreds of vehicles within one site. Trimble needed a performance testing tool that would be able to address multiple challenges faced both in the present and into the future.

EVALUATION:

Since the VisionLink tool was built with Flex, Trimble needed a performance testing tool that could decode and encode AMF (Action Message Format). "At the time, we also looked at LoadRunner and WebLOAD since both tools supported Flex, but LoadRunner was too costly, and WebLOAD considered Flex support as an added feature, which would have brought up our total price. In terms of price competitiveness and Flex support, NeoLoad was the obvious choice," Duffy says.

"When we were first evaluating NeoLoad, we setup load tests and immediately found we were violating our response time SLAs and crashing our application with only a few concurrent users. Using NeoLoad we were able to quickly drill down and identify the problem areas and implement changes to improve response times and application stability."

The performance team also sought the ability to develop test scenarios easily and efficiently, and found that with NeoLoad's variable extractor capabilities, it could randomize the variables, customizing the virtual user profiles. Another feature of NeoLoad that Jim found particularly useful was its ability to organize each virtual user action into containers, making it possible to extract statistics around a certain business transaction and sending it to their development team to perform deeper diagnostics.

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In support of Trimble's future mobile development plans, they found that NeoLoad provided the necessary mobile capabilities, including network emulation and device simulation, that would ensure a successful mobile user experience come launch time.

"The ability to capacity plan for the mobile launch was critical to minimizing risk for our team and maximizing performance for our clients."

ESSENTIAL FOR MOBILE TESTING

RESULTS:

"We are in our fourth year using the NeoLoad product and our business is growing exponentially. The number of equipment assets we are monitoring in the past two years has tripled, and we are currently processing nearly one million transactions during busy hour."

Additionally, the team was able to meet its response time SLAs even with this increased transaction rate and the application is currently supporting the required number of concurrent users.

"Using NeoLoad, our team was able to deploy the first version of our mobile application with confidence and without the risk of losing traffic, revenue or employee productivity." NeoLoad provided the capability to simulate a high volume of concurrent mobile users, checking that the servers wouldn't have performance issues under load and to ensure that mobile users got acceptable response times even under sub-optimal mobile network conditions. Using NeoLoad's mobile device simulation and network emulation capabilities, the team was able to replicate a realistic load on the back end of the mobile application so that any issues could be mitigated before its real clients experienced them in production.

With NeoLoad, the team was able to optimize the performance of the mobile app to ensure real-time monitoring and maintenance for its clients. "The mobile app has brought greater convenience to our clients to be able to locate assets in the field, like a truck that needs engine maintenance, or a tire that needs air. The mobile app has lent a far greater experience for our truck owners who, in the past, would sit in their truck using merely their old laptop and a paper map to navigate in the field, and monitor their construction vehicles."

Furthermore, metrics generated by the reports enabled the team to rapidly identify the weak points in both the application and architecture and send the errors to be fixed to the development team. "Monitoring and fixing errors build-by-build allowed our team to enter the production phase each time with greater confidence and peace of mind."

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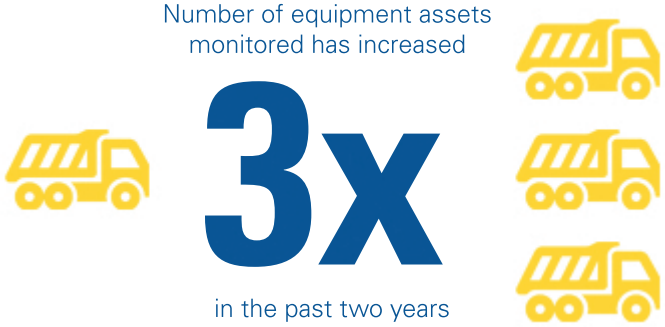
Number of equipment assets monitored has increased



in the past two years

FUTURE PLANS:

"Looking to the future, management anticipates over 60,000 customers monitoring over 400,000 assets." We have a test environment that models our production stack. This testing environment needs to be able to test projected loads that are anticipated 6 months to 12 months into the future. NeoLoad makes it easy create load tests for new features and then to combine and scale up those tests to the anticipated volumes. "In order to support continued growth, our team will use NeoLoad to capacity plan for future iterations of our web and mobile applications, learning from VisionLink's dynamic customer behavior and active user feedback."

"Since using NeoLoad, not only has it fulfilled our testing needs on a day to day basis, but it has provided the return on investment that will continue to offer long-term benefits for the VSS product team well into the future."

NeoLoad

Curious about NeoLoad?

Interested to learn how Neotys can help your organization increase testing efficiency, improve productivity and deliver higher quality web and mobile app experiences for your customers the way Trimble did? Contact us today!

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About Neotys | www.neotys.com

Neotys is the leading innovator in Continuous Performance Validation for Web and Mobile applications. Neotys load testing (NeoLoad) and performance monitoring (NeoSense) enable teams to produce faster applications, deliver new features and enhancements in less time and simplify interactions across Dev, QA, Ops and business stakeholders. Neotys has helped over 1600 customers test, monitor and improve performance at every stage of the application development lifecycle, from development to production, leveraging its automated and collaborative tooling. For more information about Neotys, NeoLoad and NeoSense visit: www.neotys.com or contact sales@neotys.com

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