

Performance Testing Solution for a Leading US– based Oil & Energy Company

Speed, Stability, and Scalability achieved
through Performance Testing

About The Customer

The customer is one of the largest fuel suppliers in the US and is ranked by Forbes as one of the Top 40 Privately Held Companies in America. They are specialized in providing innovative solutions to the most demanding energy procurement, supply, and logistics challenges for various organizations across North America. They offer a broad range of solutions including fuels, natural gas and energy prices, and data management services. They deliver around 3 billion gallons of fuel and complementary products annually to 5,000 customers across the U.S. and Canada.



Challenges:

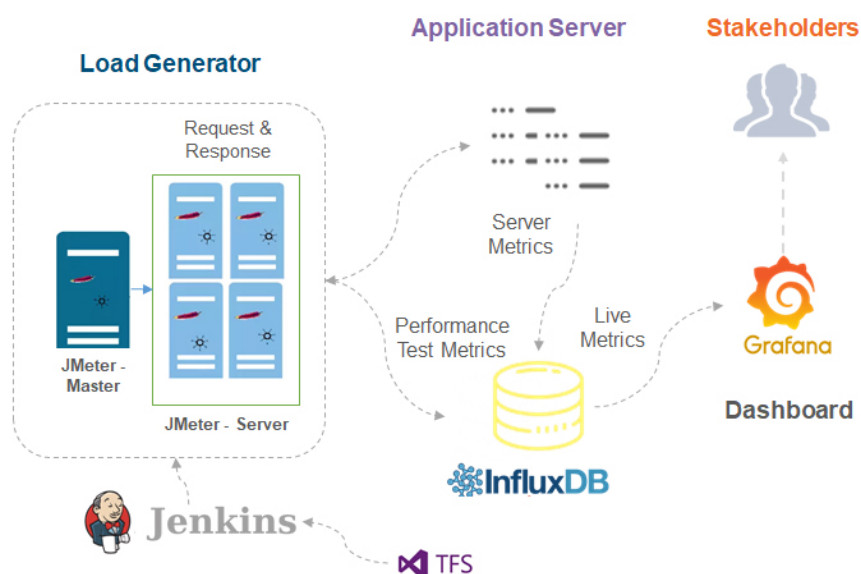
- *New functionalities deteriorated the performance of the app*
- *Application failure with the surge in loads or the large volume of transactions*
- *No clear definition of performance targets & objectives*
- *Lack of performance testing expertise*

Solution:

Team implemented a continuous performance testing solution, assessed the performance of application by designing, executing and analyzing test results

The Need

The customer wanted to develop an enterprise application that can support every facet of energy management needs, from purchasing, processing, and finance. The application had to cover all aspects such as supply, trading, logistics, inventories, market pricing, demand, reports, and all aspects of the energy supply chain. When more complex integration across many modules and new functionalities/services were added, the application's performance deteriorated. Eventually, our customer looking out for a testing partner who can assess the application, server performance against the performance SLA's and provide easily interpretable metrics report on the speed, stability & scalability.





Results:

Performance Testing with CI/CT helped them achieve:

- *Helped the developers to resolve any performance issues in their code at a very early stage in SDLC*
- *Helped the app team to get the complete picture of the application performance during the sprint(s)*
- *Application serving more clients with desired performance requirements*
- *Enhanced Product Quality & Customer satisfaction on speed, stability & scalability*
- *Exposed more performance issues on the new builds*
- *Tuned System TCP/IP stack, Load balancer, servers for performance*

Aspire's Solution

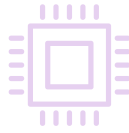
In order to ensure that every new version could meet the performance expectations and stable at all times, our performance CoE team proposed the solution for implementing automated and continuous performance testing through customizable data-driven performance framework which runs on CI to assess application performance after each deployment.

- We suggested a performance testing solution at zero cost to add into their existing functional test automation framework thereby ensuring easier extension for the future needs
- We designed a cost-effective, robust, reliable and data-driven performance testing framework with the combination of open-source tools like JMeter, InfluxDB, Grafana & Telegraf
- We implemented continuous integration using TFS & JMeter
- We tested new features for the performance and analyzed the test results with the defined acceptance criteria. We provided recommendations to the development team to fix the code drop in order to achieve the required performance standards
- We scheduled tests through CI set up to run whenever the developer commits a code
- We captured and reported key performance metrics continuously to uncover any performance issues or degradation trends





Technology Snapshot



- » JMeter
- » InfluxDB
- » Grafana
- » Telegraf
- » TFS

Best Practices

- » Constant communication of performance insights, areas of improvements to the stakeholders
- » Effective reporting of test results using Grafana
- » Design and simulation of workload profile resembling the real-world scenario
- » Comparing performance against different builds
- » Archive of test results – Built effective performance comparison charts in Grafana
- » Knowledge sharing session on the new features with the team



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