



Aspire's Continuous Test Automation solution reduced 90% testing efforts for the enterprise application of a Leading American Oil & Energy player





Challenges:

- *Customer's enterprise application was tested manually which was very time-consuming & prone to high defect leakage*
- *Identification of right test automation tools to reduce the Production downtime post every release & also to cut down more manual efforts*
- *Application Performance was getting degraded when new functionalities are introduced*
- *Identification of best performance tool to measure the UI timings along with load to fix the application's degrading performance*

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 provide innovative solutions to the most demanding energy procurement, supply, and logistics challenges for companies, organizations, and governments across North America. They offer a broad range of solutions including fuels, natural gas and energy price and data management services. They deliver over 3.5 billion gallons of fuel and complementary products annually to 4,000 customers across the U.S. and Canada.

About the Product

An enterprise application that supports every facet of energy management needs, from purchasing and processing and finance. It includes applications for supply, trading, logistics, inventories, market pricing, demand, reports, and all aspects of the energy supply chain.

Challenges

The customer was having a tough time with the time-consuming manual testing and lack of formal testing which resulted in high defect leakage and low product quality. As the product should be compatible with different platforms, the need to test the functionality was crucial. The product's performance was degrading after adding more services and identifying the right automation tools, framework and solution against the existing automation solution was a feat.



Solution:

- *Telerik Testing Framework helped them in their product testing and achieve faster-time-to-market*
- *Combined performance test automation framework is developed using JMeter & Navigation Timing API to measure the application load, UI performance timings*
- *Scalable continuous test automation solution at ZERO cost was designed to ensure application quality in both functional & performance standpoint*
- *Efficient QA process was implemented*
- *Proactively preparing test scenarios before the construction of new functional code*
- *Defects were identified through Aspire's exploratory testing of the builds, along with functional testing*
- *Continuous Testing of functional and performance builds in Azure CI pipeline*

Aspire's Solution

In order to help the customers overcome the challenges, Aspire's QA team, the testing consulting partner, built a strong, reliable QA team that can take care of their end-to-end testing requirements. The following are the solution and engagement of Aspire with the customer:

- A cost effective, robust, and reliable Telerik Testing Framework was provided to help them have undivided focus on their product testing and achieve faster-time-to-market metrics
- Test automation solution at ZERO cost was designed and it was scalable thereby ensuring easier extension for the future needs
- Efficient QA process was implemented
- Operated in an agile mode by proactively preparing test scenarios before the construction of new functional code and sharing with the developers
- Defects which were never encountered during tests were identified as Aspire introduced them to exploratory testing of the builds, along with functional testing
- Performance testing – Executed baseline tests to validate the NFR's
- Automated testing – Executed in CI pipeline through Azure
- Implemented Continuous Testing in Azure pipeline which helped to find the defects early



Benefits:

- *Extensive test coverage and minimal defect leakage: less than 4%*
- *1200+ bugs logged in a release and 100+ bugs are uncovered*
- *With our Continuous test automation solution, tool cost was reduced by \$5000/year*
- *90% of effort cut down through automated smoke testing*
- *Faster feedback: an average turnaround time of less than 1.5 hours*

Best Practices

- Mind Map – Test Scenarios
- Bug bash
- Knowledge sharing session on the new features – across the team
- Defect Prevention Plan: RCA on defect leakage for each iteration
- Implementation of continuous integration
- Through CI practice, new builds are verified by automated smoke tests
- Faster feedback on the new builds
- Continuous code quality through SonarQube
- Performance test reports Grafana: Data visualization & monitoring tool



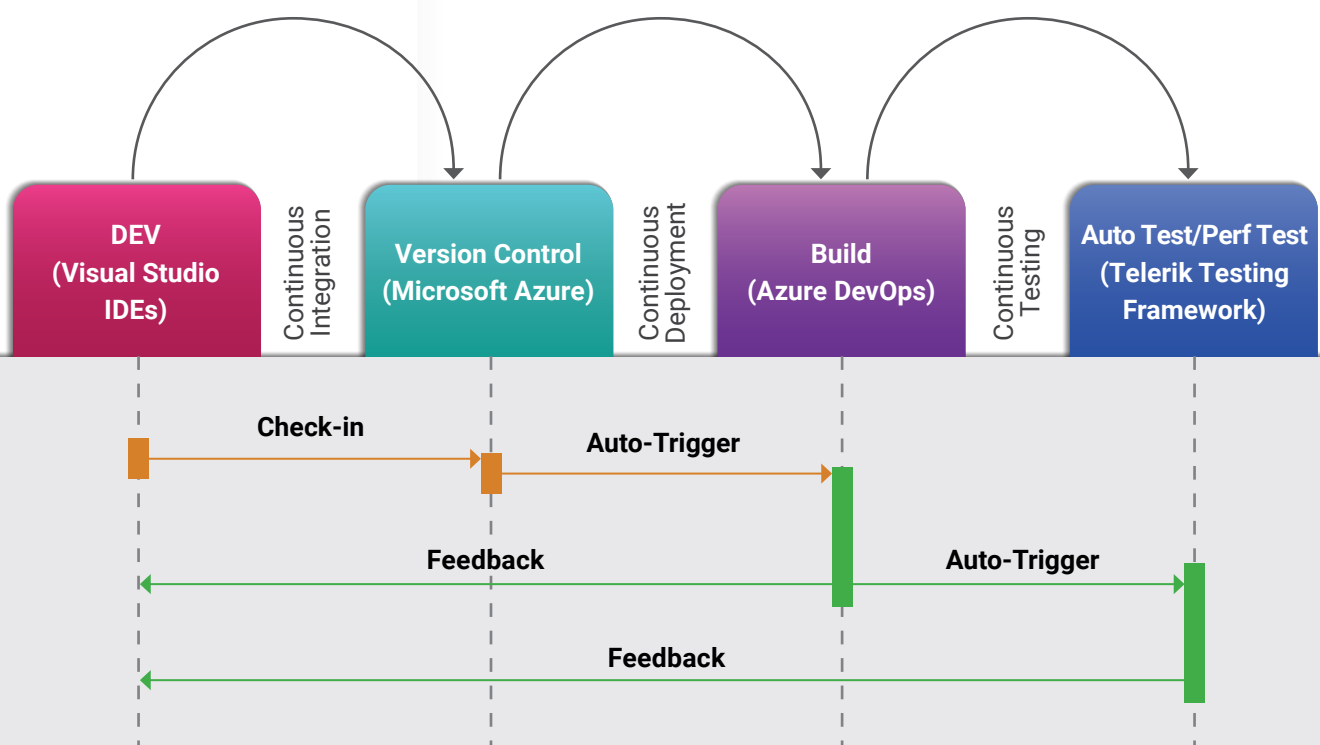


Continuous Testing

Continuous Testing platform is required to accelerate testing to keep pace with Agile and DevOps. Continuous Testing can't be implemented without test automation. It is the process of executing automated tests as part of the software delivery pipeline to obtain immediate feedback on the business risks.

Smoke automated scripts are hooked into Development CI/CD pipeline of DEV environment to verify the status of each build before it deploys into QA environment which drastically reduced the defects introduced in QA environment & also certifies only stable builds are moving out of DEV environment.

Performance test evaluation would be done against selected builds





Results and ROI

Here are some of the key benefits the customer derived:

- Enhanced Product Quality - Extensive test coverage and minimal defect leakage: less than 4%
- 1200+ bugs logged in a release and 100+ bugs are uncovered on the new builds during the automated smoke tests
- With our continuous test automation solution, the tool cost was reduced by \$5000/year
- 90% of effort cut down through automated smoke testing
- Faster feedback: showstopper Bugs were reported in an average turnaround time of less than 1.5 hours

Future Impact

- Quality product and end user satisfaction
- Minimal defect leakage
- Scalable, rigorous, effective and continuous test automation approach will reduce the customer's dependency on manual testing efforts, improve their time-to-market metric and offer a trustworthy environment for them to innovate effortlessly





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