



PAYMENT

Automation Testing for a Payment Solution Provider



ATTENTION. ALWAYS.



aspire 
SYSTEMS
attention. always.

THE CUSTOMER

The customer offers payment solutions for more than 4000 financial institutions across USA. Their solution involves integrating their clients' application with online banking platform resulting in secure systems that can be configured as consumer, small business, person-to-person or mobile payment solutions.



THE CHALLENGE

As the customer was involved in payment processing services to consumers as well as business entities, they had to perform functional testing manually before every release. As their products grew, they were in need of a more mature and scalable automation test solution. Some of the key challenges include:



BUSINESS CHALLENGES

- 1 The procedural and operational complexities eventually **slowed down the "time to market" of their products.**
- 2 The time consumed by manual testing procedures is directly proportional to the growth of the products.
- 3 There were **no proper documentation** procedure in place and it deterred quick integration to the project.



TECHNICAL CHALLENGES

- 1 Initially, the project didn't have any **regression test scenario**.
- 2 **Functional verification** had to be conducted in **multiple environments** in order to improve the overall quality of the deliverables.
- 3 The best **automation tool and framework** that could **support various products of the customer** and would improve their overall operational efficiency had to be identified.

After detailed analysis of the customer's products, Aspire's team created over 1500 regression test cases to cover the customer's core features.

Considering the challenges, with rigorous evaluation procedures in place, the team chose **Selenium with MBUnit** as an optimized solution to build the automation test suite. They implemented a robust and application-independent test automation framework with this tool so that it could be re-used for various products and customized features. Integration of Selenium, MBUnit and Gallio was done to fasten the execution in parallel threads.

The plan also involved **automation of services and settings customization** as a part of portable prerequisites that would make the test scripts to run in different environments. This automation work would also avoid the redundancy of having separate manual efforts that sets up the prerequisites.

Key Activities:

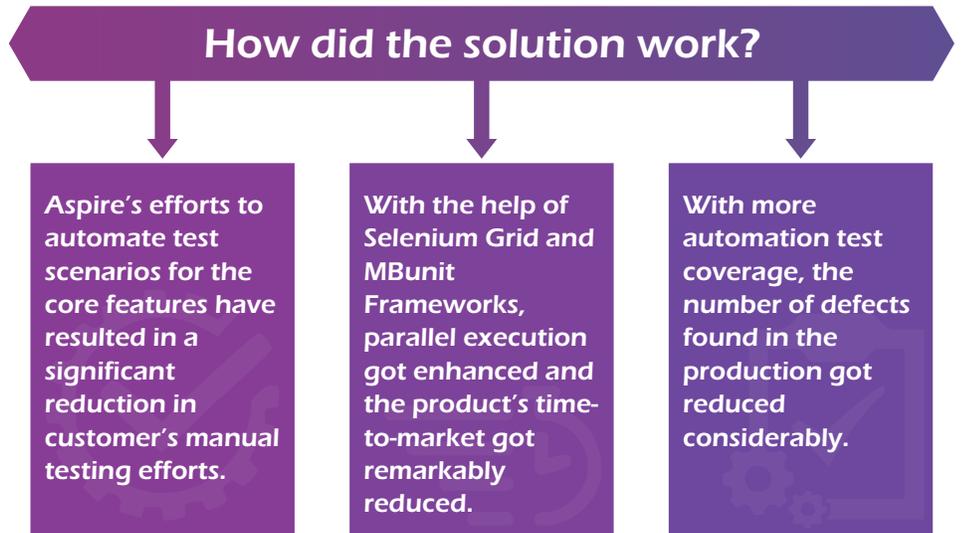
Some of the feature highlights of Aspire's Hybrid Test Automation Solution Framework include:

- 1 The **page object model** enhances the readability and maintainability.
- 2 The solution framework has been built with **high re-usability, modularity and extendibility**, so that it could be tailored and used for other types of customer's application.
- 3 **Portability of test data** was implemented to run the test scripts in multiple/new environments thereby avoiding manual efforts in recreating the test bed.

THE SOLUTION

Implemented a robust and application-independent test automation framework, and it could be re-used for various products and customized features

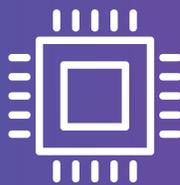
- 4 Scripts were developed to be **browser-independent**.
- 5 The framework consists of **DB scripts** that can handle request from other support products and to insert bulk test data.
- 6 Detailed **statistical reports** of a test run can be obtained in **HTML, MHTML, XML** and Text formats.



BEST PRACTICES

- 1 The team used **Jenkins for weekly batch run** to avoid build issues.
- 2 To ensure stability of the environment from the changes committed during regression, **maintenance and enhancement activities** are done in parallel.
- 3 The entire **data set up is made portable** so that the test beds can be created in any new environment.
- 4 By establishing **Selenium Grid**, the team has ensured faster execution of tests.

TECHNOLOGY SNAPSHOT



Language: **C#**

Automation Testing Tool: **Selenium**

Testing Framework: **MBUnit**.

Test Execution & Reporting Tool: **Icarus Gallio**

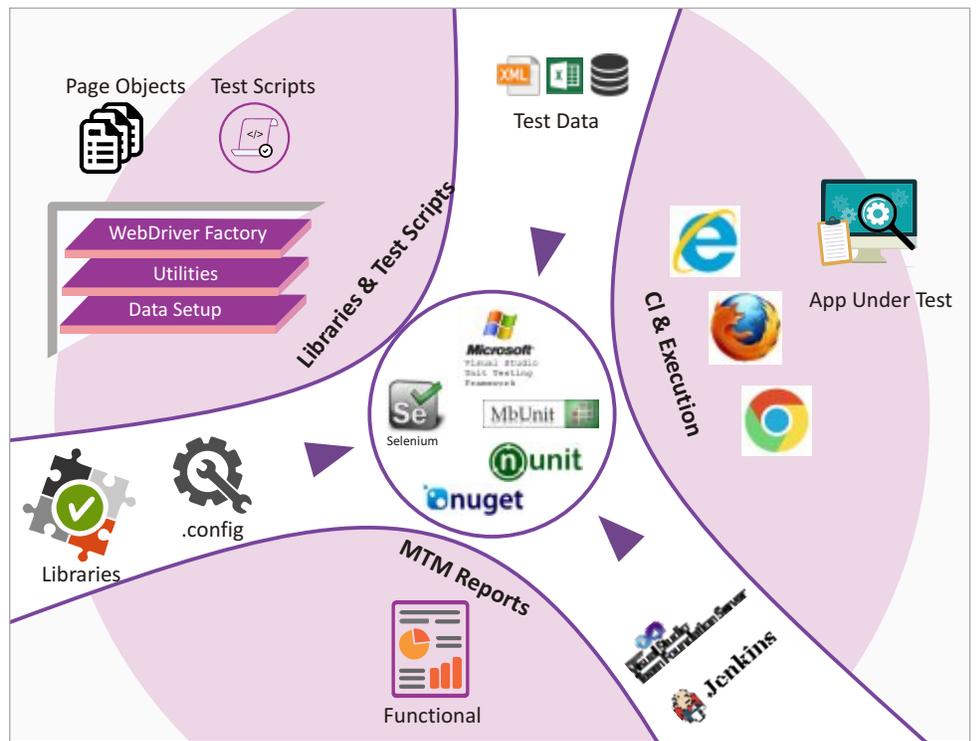
IDE: **MS Visual Studio**

Repository: **Team Foundation Server**.

DB Server: **SQL 2013**

Lifecycle: **Iterative**

Environment: **PREV, CURR, FastTrack, DevFX**



RESULTS

With Aspire's efforts on implementing a robust automation framework with cutting edge methods:



65%

The customer has profitably saved the manual efforts by nearly 65%.

Drastic reduce in their product's time to market.



200%

Remarkably, it ramped up the Automation coverage by 200%.

FUTURE IMPACT



Aspire's disciplined, rigorous and continuous efforts in establishing a solid testing framework in the customer's working environment will help the customer to improve their time-to-market of all major and minor releases hence seamlessly expanding their complete payment solutions and offerings.

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ABOUT ASPIRE

Aspire Systems is a global technology services firm serving as a trusted technology partner for our customers. We work with some of the world's most innovative enterprises and independent software vendors, helping them leverage technology and outsourcing in our specific areas of expertise. Our core philosophy of "Attention. Always." communicates our belief in lavishing care and attention on our customer and employees.

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