



# Regenerate Real-world Customer Experiences With Performance Engineering



*attention.  
always.*

ASPIRE ARTICLE



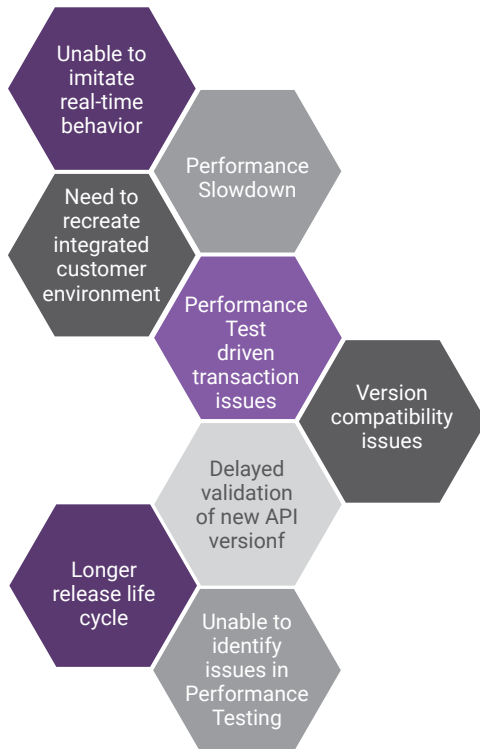
## Introduction

“Seeing is believing,” they say and what we have here is something to substantiate that. This is the story of how we rendered our testing services to one of our customers who tried to sort the challenges internally and ended up with much bigger and complicated issues. In the hour of need for an expert’s guidance, they chose to liaison with Aspire Systems. Our Performance Engineering solution helped them build a stable platform for their customers and build lasting relationships.

## Roadblocks

Our customer is a leading identity data intelligence company present across 23 countries and has about 200 partners globally. They provide a series of solutions that help organizations to validate and verify the identity and location of more than 4.4 billion people across the globe. They enable organizations of all sizes to protect themselves and their end customers against fraud and financial loss everywhere they operate. Based on the business requirements, they provide software solutions, for a wide range of ID checks, and help their end users to identify fraud and overcome money laundering without the risk of non-compliance. Their solutions depend mainly on machine learning, facial recognition, and many other cutting edge technologies to maintain the highest standards of data integrity.

***Data intelligence refers to all the analytical tools and methods companies deploy to create a better understanding of the information they collect to improve their services or investments.***



## Bottlenecks

Since the nature of the business of our customer is very secured and sensitive, it was integral for our customer to provide a seamless and error-free customer experience. The most serious challenge faced by them was their end customer's access to the application that routed through numerous network firewalls. Notwithstanding their attempts to sort this vulnerability, it led to performance challenges and inability to provide seamless connectivity. This failure occurred while they were integrating their applications with their end users' systems leading to unsatisfied customers, revenue loss and delayed time to market.

Their initiatives to create software solutions to solve the existing challenges internally resulted in further complicated performance and compatibility challenges eventually. Also, they failed to create a real-world scenario of the client application that led to a vague idea of performance challenges and not enough clarity to rectify the situation.





## Customer Requisites

After they realized the adversity of the situation, they decided to seek help from technical experts, more like a testing partner, who had experience in handling such tasks and capable of providing them with a varied range of testing services for enterprise and custom applications.

Our customer also required a solid, secure, and transparent framework that can augment their insight-driven business and overcome these pain points quickly without having to spend more time or money.

Somehow, the customer wanted to regenerate their end-user integration environment by building a one-stop solution to validate and assess the performance of their Application Programming Interface (API) for functionality, which would help them to do achieve the following:

- » Measure the application's performance index for an expected condition
- » Identify potential areas for performance optimization
- » Ensure application scalability for future
- » Create high performance customer implementation software releases
- » Identify and resolve specific API integration challenges

*Our customer was looking for an experienced testing partner to help them with a solid and secured framework to validate the performance of their API.*



*We decided to offer them a tailor-made quality engineering solution called Hyper-Testing to help them overcome the challenges at greater speed.*

## Tailor–Made Solution

With the increasing number of challenges they faced, the customer decided to seek help from vendors who had ample experience in handling such challenges and could offer them an integrated quality engineering solution that could help them address their application’s performance challenges so they could deliver exceptional user experience to their customers.

They finally decided to work with Aspire Systems, because of our simplified and peculiar methodology to reengineer testing process that can easily enable continuous delivery.

After analyzing the situation, we offered them a tailor-made, integrated quality engineering solution called Hyper-Testing to address the challenges and testing issues from all three dimensions, like processes, practices and tools and reusable assets to drive agile testing at greater speed and minimal costs.

- » 360° view of the application being tested
- » Access to comprehensive QA dashboard/metrics
- » Shortened testing feedback cycle time by 40%
- » Slashed CoQ by 30%
- » High ROI within 6 months



### So, what exactly is Hyper-Testing?

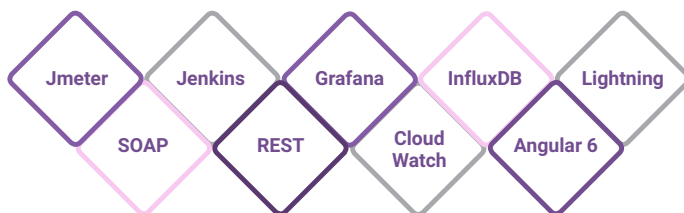
Hyper-Testing can be defined as an agile and unified approach towards designing and executing a test strategy that encompasses end-to-end testing of all application layers as well as the non-functional requirements by leveraging the best of breed tools resulting in lower TCO and higher ROI.

Also, this strategy takes a holistic view of testing every application or software and identifies all the possible influences on the customer experience, which is more or less, what our customer needed.

Hyper-Testing synchronizes with the existing Quality Engineering practices in the industry that help organizations set up a complete end-to-end Quality Assurance Engineering (QAE) process.

This methodology consists of innovative techniques, time-tested methodologies and a team of over 600 test engineers and QA experts. Continuous Integration/Continuous Testing, DevOps Testing, Shift-Left Testing, AI/ML-led Testing are some of the added advantages of embracing Hyper-Testing.

In this case, we leveraged high-end technologies and tools like these to achieve the intended result.

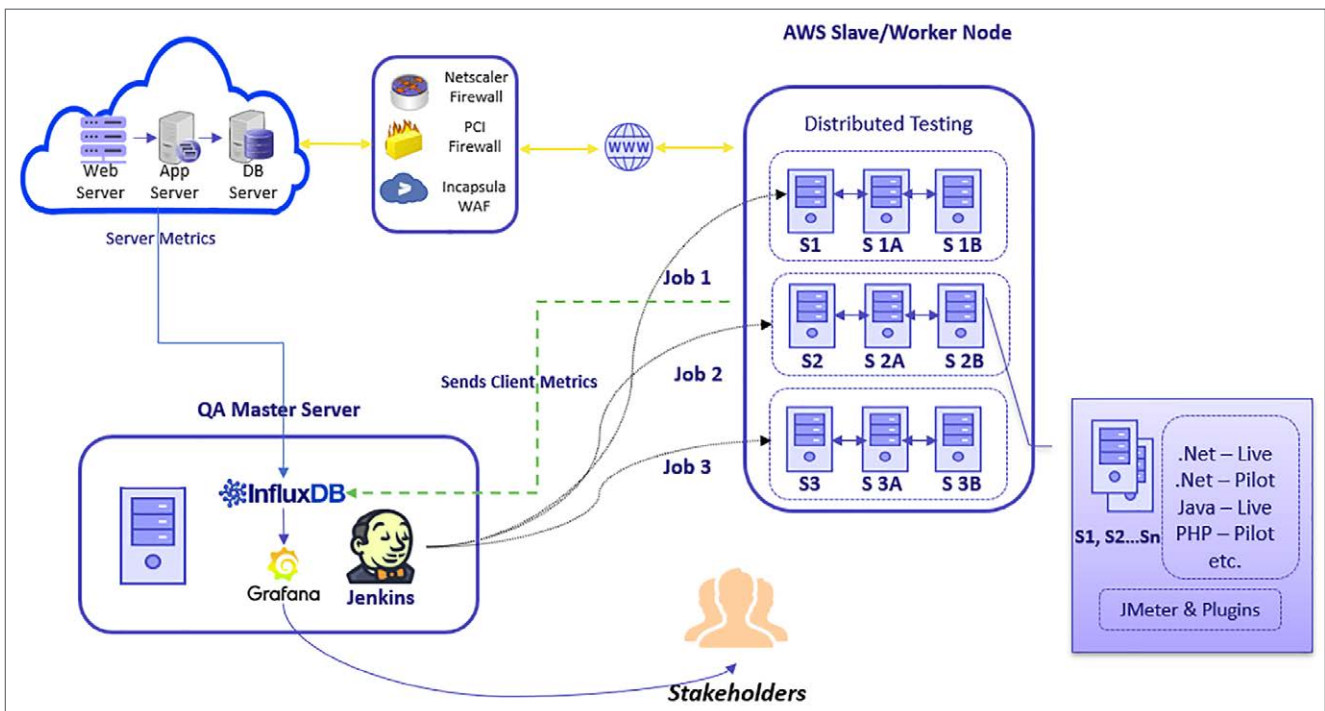




## The Methodology

After careful evaluation of the client's integration system, our testing experts from Aspire recommended a solution to enable continuous delivery success. The methodology used involved:

- » Developing a REST based mock services to test the integration of SOAP API end points and assess the performance of the Web Services Platforms like Java,.Net, PHP
- » Following industry standard best practices for mock service development and API integration
- » Developing user interface using Angular 6
- » Upgrading to the latest SOAP integration framework (i.e. Apache CXF3.3.0 for Java version 10 and greater) to resolving compatibility issues
- » Creating real end customer like environment with AWS cloud setup with mock services (.Net, Java & PHP) on AWS worker nodes and the services validated through JMeter test scripts via the mock services
- » Recreating the setup through distributed testing with AWS (Load Generators) as the service is accessed by many end users, thus ensuring the request is from different IPs





- » Setting up analytics and monitoring tool – Grafana
- » Building custom dashboards to monitor client metrics
- » Integrating Grafana with CloudWatch allowed access to server metrics to be included in the dashboard
- » Setting up continuous integration pipeline with Jenkins to run performance tests for every code deployed in the respective environment
- » Parameterizing Jenkins job for mock service type, number of virtual users, etc. to help build the test as per the user defined parameters
- » Integrating JMeter tests with Jenkins using 'Lightning' to analyze the results based on the defined tests for different SLAs allowing to fail the build if certain metrics go beyond the defined threshold







## Business Benefits

After we implemented the Hyper-testing strategy, the customer was able to achieve the following:

- » Identify and fix key performance issues through performance assessment
- » Recommend better and optimal performance metrics to setup integration environment to their end customer using performance test results
- » Provide a reference code for API integration that conforms to industry standards thereby, minimizing the chances of any potential failures and performance degradation in the future through mock service development
- » Facilitate stakeholders with enhanced insights for accurate decision-making
- » Validate the broken customer integration once the new version of API was released
- » Ensure faster CI/CD feedback cycles leading to quicker time to market
- » Enable testing for different environments
- » Run existing JMeter scripts as functional API tests
- » Decrease cost by involving open source toolset like JMeter, Jenkins, Grafana, InfluxDB, Lightning
- » Share performance metrics and dashboards with stakeholders
- » Implement constant monitoring and reporting
- » Automate their manual testing efforts both functional and performance
- » Compare their current performance on par with the benchmark
- » Achieve performance test results for each build

After implementing our Performance Engineering solution, our customer was able to provide seamless experience to their end users, improved their time to market and enhanced ROI. If you are one of the organizations that is having a tough time with your conventional testing methods, reach out to us for the best test automation solutions in the market.



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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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