daffodil

Success Story

Automation Testing for a UAE based lottery application

Client:
A leading online gaming company

Industry:
Gaming

Country:
UAE

Our Role:
Software Testing

About the Client

The client is one of the leading gaming solutions companies in the UAE which strives to provide a legendary experience for players through engaging and innovative online games. The client leverages an extensive betting menu, providing users with a comprehensive statistics on live games and those scheduled for future dates.

The client plays an active role in encouraging people to achieve their dreams through projects, including funding scholarships, disability and various cancer societies.

Key Facts

99% reduction in test execution time	**40%** improved productivity as compared to manual QA	**1.8 s** average response time

Services Used

- Software Testing Services

Technology Stack

- Selenium
- Apache HTTP Server Project
- Apache JMeter™
- sonarqube

"I am extremely happy to share that the demo and training session of approx.400 people went ROCKING today ! Thanks for your support and efforts put in for today's event! Thanks once again!"

Senior Project Manager

The Situation

The lottery application was expected to cross a user base of 1 million and receive a concurrent load on several web pages before and during lottery announcements. That is why load testing followed by balancing and autoscaling of resources were the crucial aspects of the application performance.

To improve the responsiveness of the application and its availability during high traffic, it was important to test the system performance under stressful scenarios. Moreover, it was necessary to ensure that application complexity and frequent releases do not affect the time-to-market.

Considering these requirements, the following were the key areas of responsibility for the QA and testing team:

- To ensure reduction of defect leakage from unit to functional testing by applying QA processes
- To reduce regression time for faster time to market
- Safeguard the application from the top 10 OWASP vulnerabilities
- Ascertain the high performance (load and stress testing) of the application
- Create comprehensive reports on the performance of the application
- Usage of cost-effective and performance-oriented tools for testing

The Solution

Setting up QA processes

Working within the Agile framework, the QA team started by creating a test suite of over 1000 test cases to verify the functional requirement of the application in the first place. After a thorough requirement analysis, a test plan was generated to identify the right approach for testing.

As the development progressed and the application became complex, our QA experts started planning the regression cycles to ensure that the existing features are not affected by the change. Regression testing was performed to check any dysfunction in UI and features after every update.

Load Testing & Reporting

Since the application was expected to receive a high load of concurrent users, it was important to test functional behavior and system capacity in a simulated environment. The requirement was to test the load on the entire scenario and record server breakdown time. This was done through API load testing using Apache Jmeter.

Report Analysis and Load Balancing

Based on load testing in a simulated environment, a report was generated, analyzed, and shared with the DevOps team to adopt the right approach for balancing the load on the server.

Load balancing ensures that the network traffic is distributed evenly across multiple servers and the flow of information between the servers and an endpoint device happens seamlessly and in a fraction of time. Moreover, the resources on the server were required to be optimized to manage the fluctuating demand.

To balance the load, server optimization was done several times till a favorable response time was received. Some of the high traffic pages such as the login page, play lottery, shopping & billing page, lottery result display page, etc. were continuously analyzed for threads/ramp-up time in Jmeter.

Automation Testing & OWASP Vulnerability Test

To enable the efficient testing process of multiple use cases and peak loads Daffodil's team of QA experts set up an automation testing infrastructure using Selenium. The application has been orchestrated to handle more than 50,000 concurrent users at a time. The concurrency can be stretched to 100,000 users within a matter of a few clicks. To accelerate the testing cycle, automation test scripts were written in javascript language using Selenium. Test scripts for business-critical features such as login page, forgot password, lotto play, buy collectibles, favorite numbers, recent order place, scratch code, entries, delete the account, claim to file, etc. were created. Through automation scripts, it was ensured that some of the highly utilized web pages or features of the application are continuously checked for dysfunction, which significantly reduces the chances of bugs and errors in related features. The application was tested for OWASP top 10 vulnerabilities through SonarQube.

The Impact

The QA services provided by Daffodil software improved server configuration after reports analysis which significantly optimized system performance. This resulted in an optimized application with an average response time of 1.8 seconds for 10K concurrent users. We ensured a reduction in regression test cycle time from 7 days to <2 days through automation testing. It also reduced the error rate by 99% resulting in reduced cost & time associated with project testing.

The automation also resulted in shorter regression cycles which significantly reduced the time-to-market as well as 40% productivity improvement through a well-defined testing approach that included manual regression and automation testing.

About Daffodil

For more than 20 years, Daffodil Software has been a trusted software technology partner to organizations across the globe. We take pride in our ability to look beyond technologies & deliver innovative solutions.

Daffodil is a CMMI level 3 accredited organization with innovation, tech agility & process orientation rooted deep within the core. Our team of 1000+ technologists strive to shape the tech industry and help businesses elevate their value proposition through technology.

Technology Partnerships & Certifications

Microsoft Partner Silver Application Development partner	Google Cloud Premier Partner	aws partner network
Microsoft Partner Silver Collaboration and Content	UiPath Partner	PubNub
ISO 9001:2015	ISO 27001:2013	ISO 20000

Awards & Accolades

Deloitte. Technology Fast500 APAC Winner	IT EUROPA EUROPEAN IT & SOFTWARE EXCELLENCE AWARDS	zinnov ZONES	Great Place To Work. Certified INDIA
mobileweb award 2020	INDIA'S MOST ADMIRED BRAND 2020	CMMI level 3	The Economic Times BT BEST TECH BRANDS 2021

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