

Success Story

Performance and scalability testing for an India based unicorn e-commerce portal



Client:

An Indian eCommerce Unicorn

Industry:

eCommerce

Country:

India

Our Role:

Software Testing

About the Client

The client is India's leading online retailer for multi-brand cosmetic and wellness products. With an active user base crossing 20 million, the client processes more than 500k orders in a day. With 1200+ brands, and six warehouses across India that stock lakhs of cosmetic products,

the client offers a comprehensive selection of makeup, skincare, haircare, fragrances, personal care, luxury, and wellness products for women and men.

Key Facts

123%

increase in average session duration

42%

reduction in bounce rate

78%

increase in page views per session

36%

increase in conversion rate

Services Used

 Software testing services

Technology Stack

●  Selenium

●  APACHE
HTTP SERVER PROJECT

●  APACHE
JMeter™

●  sonarqube



"I wanted to thank each and every one of you for all the work that you have put in to make the forum live. I know it's been a complicated and challenging implement but the results speak for themselves. The Network is looking awesome.

We look forward to your support on many other projects going forward, including the next phase of the Network"

Chief Content Officer

The Situation

In order to improve customer engagement and conversion rate of their e-commerce portal, the client had an idea to introduce new, interactive modules within their app. These new modules included a Q&A platform wherein the subscribers could connect with other beauty professionals, ask and answer beauty-related questions, give and seek advice, discover trends, and join beauty-centric conversations. The other module was a shoppable video hosting platform that had beauty and fashion content from industry practitioners, influencers, and celebrities.

Both the platforms were expected to receive high traffic from the existing user base and from new subscribers. Thus, it was important to prepare the platforms beforehand to handle the concurrent load of users.

To manage this load of simultaneous requests from the users, it was important to perform load testing followed by balancing of resources. Moreover, the responsiveness and availability of the application were to be ensured during high traffic times for which the system was to be tested under stressful scenarios.

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 in order to achieve a faster time to market
- To automate testing for key features of the application
- 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

QA Process Setup and Manual Testing

After analyzing the objectives, schedules, resources, estimations, and deadlines, a test plan was generated to identify the right approach for testing. A test strategy was prepared to define the roadmap to achieve the desired performance of the application along with on-time delivery. Following the Agile framework for testing, the QA team created a test suite of over 4000 test cases to verify the functional requirement of the application.

To ensure that the progress in development does not impact the stability of the application, regression and sanity test cycles were planned. Regression testing was performed to check any dysfunction in UI and features after every update. Sanity testing, on the other end, checks for the stability of new functionality or code changes in the existing build.

Load Testing and Reporting

Both the platforms- shoppable video hosting and the Q&A were expected to receive a high load of concurrent users during the sale and live expert sessions. For this, the application was load tested for functional behavior and system capacity in a simulated environment.

The load test was performed on the entire workflow to record the server breakdown time. This was done through API load testing using Apache Jmeter (for around 10,000 concurrent users). After multiple rounds of load testing, reports were prepared and shared across stakeholders for further analysis and identification of next action items.

Report Analysis and Load Balancing

Based on the results of load testing, the generated report was shared with the DevOps team so that the right approach could be adopted for load balancing on the server.

Through load balancing, the DevOps team ensured that the concurrent user traffic coming to the network is evenly distributed across multiple servers. This maintained a seamless flow of information between the servers and the endpoint device.

With the right load balancing technique, the resources on the server were optimized to manage the fluctuating demand during peak traffic times. To achieve the most favorable results, server optimization was done several times. Moreover, some of the highly utilized features of both platforms were continuously analyzed for threads/ramp-up time using Jmeter.

Automation Testing

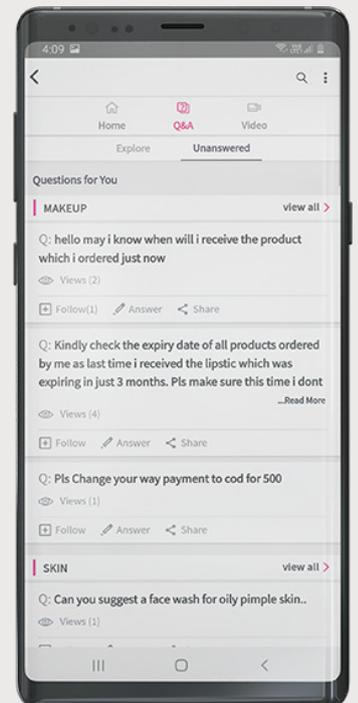
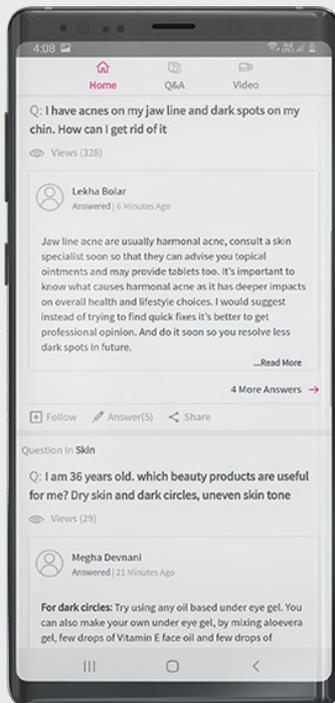
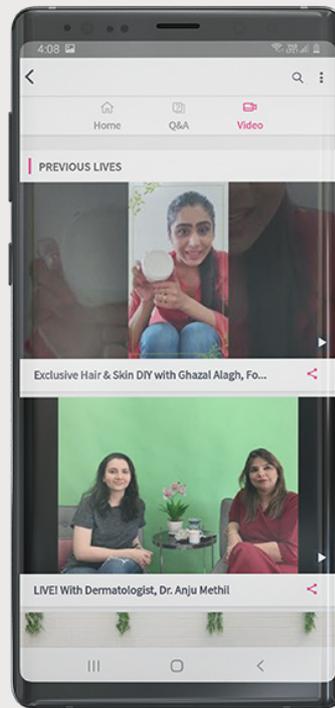
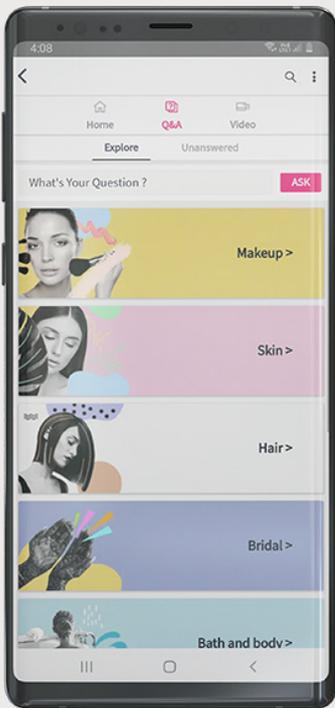
To reduce the time to market and accelerate the regression cycle for frequent releases, the critical features related to testing cases from the regression suite were automated using Selenium. The test scripts were written in Java and were scheduled for auto-execution through Jenkins.

After running these test cases, a report was generated with screenshots having details such as the number of test cases executed, number of cases that passed or failed with reason. Automating the regression suite not only reduced the chances of error leakage while testing but also cut down the testing efforts of critical features by 75-80%.

The Impact

Within three months of its launch, the user community network had 150K monthly visits, 250K subscribers, with 13K new members joining the forum every week. Daffodil achieved functional, automation, and performance targets in parallel within the planned timelines. We were also able to reduce regression test cycle time from around 15 days to <2 days through automation testing.

It also reduced the error rate by 99% resulting in reduced cost & time associated with project testing. Shorter regression cycles due to automation resulted in reduced time-to-market. It also helped the client to optimize the Q/A and shoppable videos platform with an average response time of 1 and 1.6 second respectively.



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

 <p>Microsoft Partner Silver Application Development partner</p>	 <p>Google Cloud Premier Partner</p>	 <p>aws partner network</p>
 <p>Microsoft Partner Silver Collaboration and Content</p>	 <p>UiPath Partner Robotic Process Automation</p>	 <p>PubNub</p>
 <p>ISO 9001:2015 CERTIFIED COMPANY</p>	 <p>ISO 27001:2013</p>	 <p>ISO 20000 International Organization for Standardization</p>

Awards & Accolades

 <p>Deloitte. Technology Fast500 APAC Winner</p>	 <p>ITEUROPA EUROPEAN IT & SOFTWARE EXCELLENCE AWARDS</p>	 <p>zinnov ZONES</p>	 <p>Great Place To Work Certified INDIA</p>
 <p>mobilewebaward 2020</p>	 <p>INDIA'S MOST ADMIRABLE BRAND 2020 PEOPLE'S CHOICE</p>	 <p>CMMI level 3</p>	 <p>THE ECONOMIC TIMES Best Tech Brands 2021</p>

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