

Performance Testing for a COVID-19 Global Online Donation

Client

Amid widespread COVID-19 pandemic, organizations and individuals from all over the world are donating funds through different channels or platforms to help Governments/NGOs/Communities fight this deadly virus and help poor people. Our client developed an online platform to collect crowd donation funds online from domestic and international channels for this cause.

Problem Statement

The client deployed their newly developed system on cloud infrastructure (having multiple APP/Web servers and DB servers) along with a physical load balancer. They were expecting lakhs of financial transactions in a day and wanted to ensure the system is reliable to handle projected load during peak hours with good user experience.

Project team engaged us to do a performance assessment to eliminate performance issues during peak hours so the system performs well with acceptable response time. They also wanted Performance engineers to do performance benchmarking on the existing environment (with optimized hardware resources) and help the team to do capacity planning for future load projection (where millions of transactions are expected on their platform everyday).

Solution

We leveraged multiple test methods to ensure that the platform is able to handle 2 lakhs transactions per hour and 2 million transactions per day. The sole motive was to enable the system to support expected load with minimum hardware resources while ensuring all golden transactions/paths are working fine with acceptable response time. Here is how we achieved the desired objective:

- Simulated the real world peak scenario and ensured the performance (or good user experience) of the system is not compromised under load
- Performed multiple types of tests including:
 - Reliability tests to ensure system performance is acceptable under load
 - Executed scalability tests to verify if the system is scalable to support future load projection
 - Stress tests to identify the break point and recovery after failover
 - Endurance tests to ensure there is no memory leakage and system will perform well under peak load for longer duration

- Took up resilient tests on different data centers for disaster management/recovery scenario
- Identified the load distribution issues and helped the team to tune the load balancer to ensure overall load distribution is proportional across server nodes setup on different data centers
- Identified the slow DB queries, session blockage and locks to help the DBA team tune the database for faster query response with minimum wait time
- Identified the platform issues that occur under load like “System timeout” due to one minute timeout session configured on system. OTP verification issue due to DB locks and wait time,

Value Proposition

1. The response time came down to 3 seconds.
2. The web application was efficiently able to handle heavy user load leading to faster donation transactions with limited hardware resources (optimized effectively); Also, faster OTP verification led to fewer transaction failures.

About QA InfoTech

At QA InfoTech we specialize in providing independent software testing and unbiased software quality assurance services to product companies, ranging from the Fortune 500 to start-ups. Established in 2003, with less than five testing experts, QA InfoTech has grown leaps and bounds with its Five QA Centers of Excellence globally; located in the hub of IT activity in India in Noida and Bangalore and our affiliate QA InfoTech Inc. in Michigan and Bentonville, USA.

- 1400+ QA engineers and domain experts
- An ISO 9001:2015, CMMi Level 3, ISO 20000-1:2011 and ISO 27001:2013 compliant company
- Thought Leaders in E2E testing, specifically in Test Automation, Performance Testing, Localization and Accessibility Testing

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