

White PAPER

A perspective on Performance Testing in DevOps environment



Even today, there are several business enterprises that are following traditional software development processes, in which development, testing and operations are considered different entities. It is a common notion that each team has its own separate responsibility, role, and expertise areas. However, with the intrusion of DevOps, this distinction is slowly getting blurred. In fact, successful performance testing initiatives require all the teams to sync and work together in DevOps environment.

Introduction

Performance testing is important for enhancing overall customer experience. An application experiencing slowdown will lose its customers to the competitors. The role of performance testing is to ensure that the end-user don't experience any slowdown or dreaded downtime due to a poorly functioning back-end system. Today, most of the users turn away from a user application that freezes or slow down when needed. It is an era of zero patience and the delivery teams need to ensure that the application has high performance capabilities. However, most of the organizations find it challenging to implement performance testing in DevOps environment. The performance testing poses similar challenges as integration testing. The test system must be able to generate large scale production test data to forecast about the performance of system.

Performance Testing in DevOps

Performance testing creates a centralized environment wherein all the team members participate in the design, and analysis of tests. It also establishes a transparent communication system that allows clear and quick communication between the team members. In the current times of rapid software delivery, only performance testing can manage the quality and delays in the development process. It means that performance testing is an essential requirement in software delivery process and DevOps is sustaining it.

A significant benefit of DevOps is that with automation, the implementation of performance as well as functional testing becomes more simple and fast. There are several DevOps tools that ensure that new code is automatically pushed and integrated into the system. Moreover, DevOps empowered organizations are also at a better position to implement performance testing throughout the SDLC process. In DevOps, performance tests can run in a fully-automated fashion. These tests run automatically and the team members are notified immediately if any potential problem arises.

However, performance testing do not always get the attention that it deserves. It is a common tendency to emphasize on the application features and functionality before verifying the application performance. The evolution of software development methodologies puts forth the requirement of developing performance testing methods. But, even in agile teams, the performance testing is conducted typically one sprint behind other testing methods. Performance test is not implemented until the application's features are considered stable. They operate differently from other testing and development team. Yet, the performance testers should start working as soon as the new code is constructed to give real-time updates to the developers. It will quicken the whole process of software development.

The DevOps environment also offers high scalability. In performance testing, the scalability of user traffic is extremely important. Load testing, a popular performance testing measures response time of the server when the performance test system generates synthetic requests for the server. Despite popular opinion, there is significant difference between performance testing and load testing. Whereas load testing analyzes the system performance or functionality in the presence of large number of concurrent users, performance testing checks the system responsiveness, stability, scalability, reliability, and resource usage. Performance testing can be scaled in the absence of DevOps; however, DevOps makes the implementation much easier. In DevOps, it is directly integrated with an existing continuous delivery or integration pipeline. There are several small-scale and small-scope performance tests that run in parallel to ensure performance is as expected before promoting the build to next stage.

Recommended Tools for Performance Testing

Performance testing is challenging without automated tools that can simulate test scenarios and user activity for end-to-end coverage. There are several popular open source tools. JMeter is the most common example of open source application for measuring system performance. It is simple than its proprietary counterparts such as LoadRunner; however, it is quite useful.

JMeter tool has the ability to generate simulated load and measure response time for several different protocols such as HT, LDAP, SOAP, and JDBC. JMeter can also be integrated with Continuous Integration server. There is a plug-in that can execute JMeter test scenarios. The Performance testers also need to have DevOps mindset to understand the software code behavior and interpretation of software and hardware utilization is necessary.

In the current shift towards the modern software development environment, performance testing has become central in building software. It is time that we give it our complete attention.



About Test Triangle

Originally founded in 2012, Test Triangle has become a leader in IT consultancy services providing services in application testing, DevOps, RPA, Custom software development, mobile app development, Atlassian consultancy, niche IT staff augmentation and training in advanced technologies. Test Triangle is headquartered in Ireland; but it also has branch offices in London, United Kingdom, and Hyderabad, India. We have exponentially grown to become a team of 200+ members providing services in different verticals such as Banking & Finance, Utilities, Pharma, Retail, IT & Education etc.

Test Triangle's R&D department has created a propriety platform, Test Outsourcing Dashboard [TOD] which can be used to manage software testing lifecycle using collaboration tools like email, live chat, video conferencing. We have also launched a self- service testing platform (the premium version will be released as SaaS solution), which can provide a project overview and real-time updates of the software development lifecycle.

Over the years, we have established the reputation of being a 'trusted partner in IT consulting'. Test triangle is an agile software company, which constantly strives to exceed the expectations of its clients. We adopt the software testing and software application lifecycle to meet the customer's demand in an efficient and reliable manner. With a global workforce, we have proved ourselves in delivering tight-deadline projects.

We are proud to declare ourselves a client of Enterprise Ireland and European commission.



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