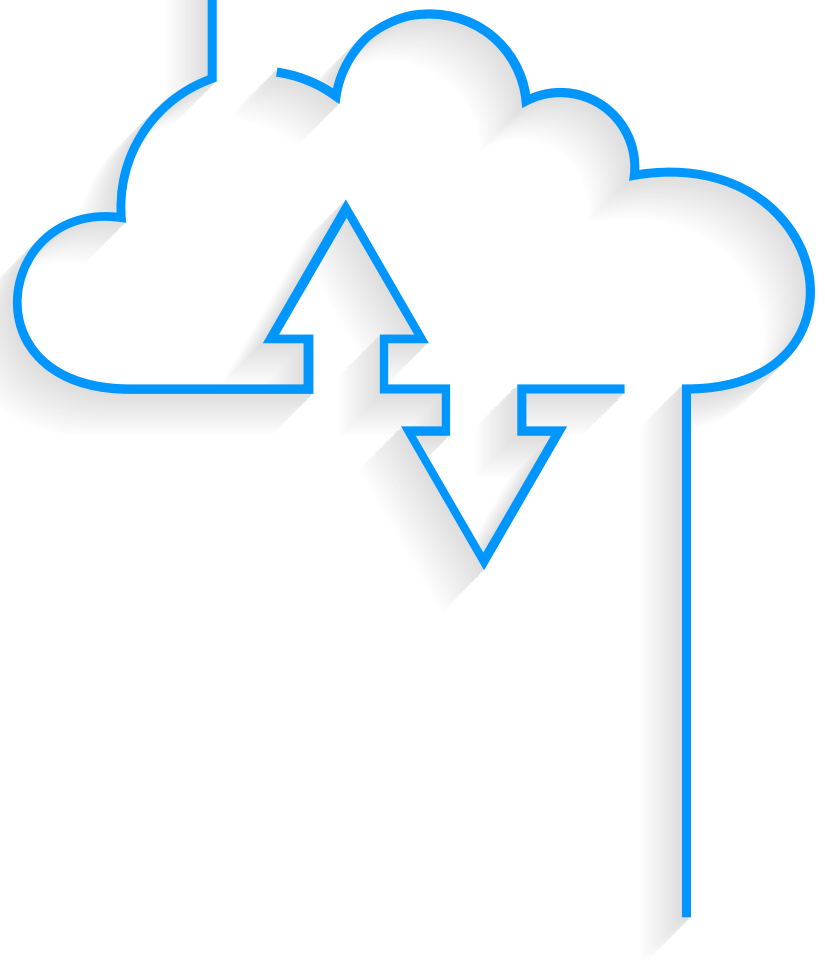QUALIZEAL

Accelerate Performance Testing with Flexible Cloud Infrastructure

Preface

Mitigate Performance Bottlenecks and Build Capabilities to Handle Peak Workloads .

Performance testing allows you to simulate real-world users who interact with your application. It effectively measures, validates, and verifies its responsiveness, speed, scalability, and stability. Performance directly impacts the cost of cloud services and the reliability and scalability of the application.

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The average business can expect a downtime cost of $5,600 per minute. For 44% of enterprises, an hour of downtime costs more than $1 million

"

— Gartner

Downtime is a significant performance issue that a majority of organizations fail to anticipate when testing their application. As businesses expand to make their applications more scalable, agile, and available, it is highly vital to move performance testing from on-premises to cloud infrastructure. Performance testing is the key to succeeding in the market where users heavily rely on mobile apps and quickly move on from one product to another if the former fails to meet their expectations.

The first quarter of 2022 has seen 37 billion mobile app installations, an 11% increase from 2021. Android users installed approximately twenty-eight billion apps across various devices.

No doubt organizations are making additional attempts to understand customer expectations. Application performance matters, and getting it right requires the kind of commitment that showcases your attention to detail without compromising the functionality of your product. In a cloud-dominated world, it becomes more challenging when you are moving the application from on-premises to the cloud.

Why Performance Testing in Cloud is Important

Cloud offers a plethora of solutions for computing, storage, and networking that make the application scalable and agile. Organizations have learned about these opportunities and have migrated their architecture to the cloud. Hosting applications on the cloud is also gaining traction because it resolves issues of constant changes that cause downtime issues.

But provisioning of additional cloud resources doesn't make an application fast by itself. Some issues still impact the application's performance, especially if you move it from on-premises to the cloud.

Performance testing compares performance benchmarks in the cloud environment. It ensures that the SLAs and user experience are met. Through performance testing, organizations can directly improve user experience, and all is working well as per the expectations of the user and the stakeholders.

Performance testing in the cloud environment is more rewarding and gives better results on more benchmarks compared to an on-prem environment

What You Should Test in Cloud Infrastructure

Speed

Helps ensure that the application responds quickly and doesn't lag

Scalability

Maximum user load the application can handle

Stability

Determines application's stability under various loads

Best Practices for Performance Testing on Cloud

Understand Your Application

Before you start performance testing, it is crucial to list down the intended use of the application and the problems it would solve. Everyone should know the application's capabilities so that the performance test gives realistic results.

Set Realistic Benchmarks

Once you understand your application and initiate performance tests, it is essential that you list down the benchmarks that make sense. A performance tester would always set realistic baselines with practical and real scenarios. That helps you understand the application's capabilities, which gives meaning to the product's success in the market.

## Conduct Tests Early in Development Cycle

It would be best to always start performance tests in the early stages of application development. It will help you fix issues sooner, and your development team will never be burdened by too many revisions at any point in time. Late-stage application testing becomes complicated because more bugs and modifications require much backtracking, leading to a significant delay in launch plans.

Understand Performance from the User's Perspective

Many applications fail to penetrate the market despite passing the critical benchmarks because the developers don't consider user expectations. Tests should capture each user's experience and expectations if you want the product to penetrate deep into the market.

Benefits of Performance Testing in Cloud Environment

Cloud-based performance testing has a multitude of benefits for the application. Some vital ones include:
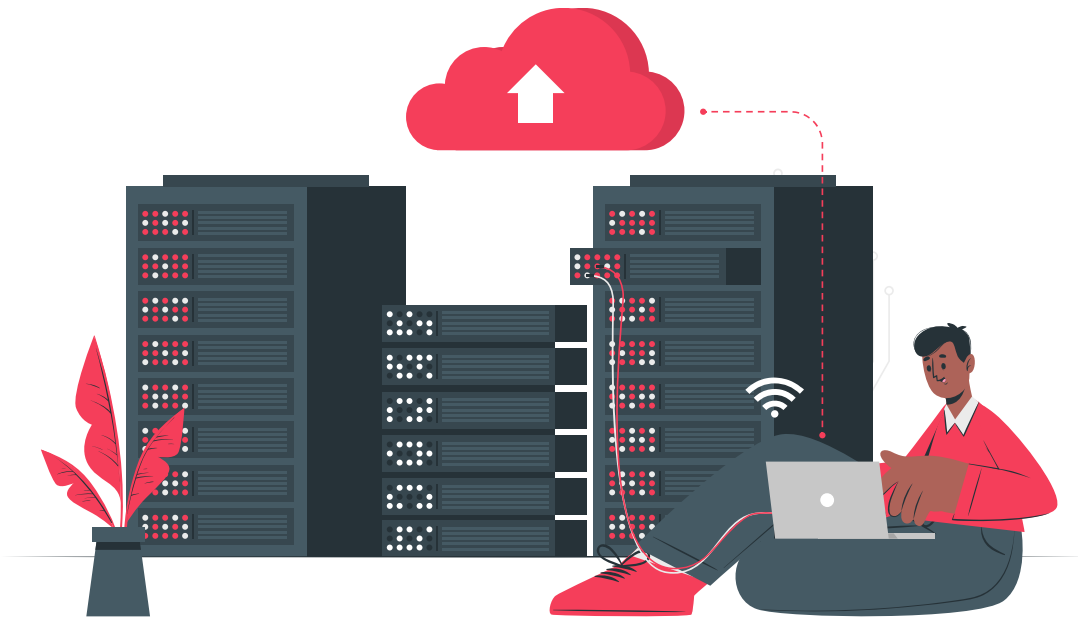
Assured Performance

Cloud infrastructures can perform at peak workloads which improves the scope of enterprise performance testing. Cloud data centers increase scalability hence allowing the application to handle a three- or four-times the size of user load than your on-prem infrastructure usually handles.

Cost Control

Cloud is agile, allowing the scaling of resources to high or low depending on the market response. The company hosting the application on the cloud only pays for what they use. These features are cost-effective but support a large scale of tests for the application.

Global Readiness

Cloud is available everywhere, so performance tests conducted in this infrastructure ready the application to be launched worldwide. It improves the product's marketability on a larger scale and increases the chances of success drastically.

Provides Detailed Analysis

Cloud-based applications offer detailed analytics during the testing process. Since the product is agile and scalable to handle a more significant load, the test results give the testers a thorough understanding of problems and the issues that need fixing.

Easy Simulation

Cloud-hosted applications are also great for testing real-world scenarios and user responses to the product. You can simulate the application, again and again, using different criteria and figure out the possible outcomes, its limits, and the chances of failure. Performance testing on the cloud prepares the application to handle any likely scenario before the launch.

Primary SDET skills include, but are not limited to, the following:

Load test

Important to analyze the application's performance during normal vs. peak conditions.

Stress test

Used to analyze an application's performance when it is subjected to extreme conditions that don't occur during standard scenarios.

Latency test

It is performed to calculate the time the application would take to move a data packet from one point to another.

Browser test

Ensures that the application would work according to the plan irrespective of the browser, whether it is on desktop, phone, or tablet.

Failover test

confirms the application's ability to provide additional resources and create backups during a downtime event or a system failure.
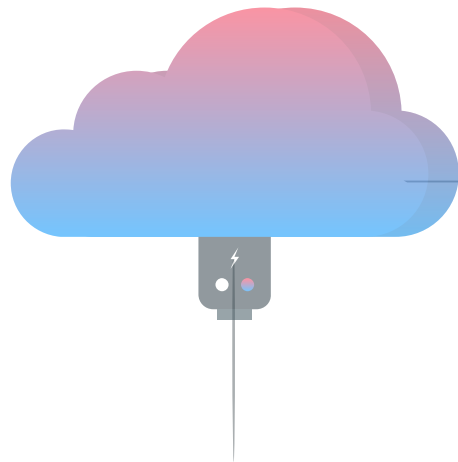
Capacity test

Measures the number of users the application can handle at its peak.

Targeted infrastructure test

isolates and measures individual layers of the application and calculates the performance.

Recommended Tools for Performance Testing

> Apache JMeter

> Micro Focus LoadRunner

> CloudBees

> IBM Rational Performance Tester

> Micro Focus Silk Performer

> Apache JMeter

> Micro Focus LoadRunner

> CloudBees

> IBM Rational Performance Tester

> Micro Focus Silk Performer

Performance Testing – Cloud vs In-House Testing

In-House Performance Testing

› More labor intensive and adds extra burden on IT departments

› Extensive hardware installation

› Scalability issues occur when the need to increase or decrease the workload comes up

› A lot of time and money is spent on setting up infrastructure

› In-house performance testing always leaves security loopholes

› Users cannot opt out of the tool, service or hardware once they have purchased until the license expires

› Requires hiring and training of additional resources

Cloud Performance Testing

› Not as cumbersome and a single person can handle it using automation testing tools

› Hardware installation is not required in most scenarios

› The infrastructure is scalable and agile to handle any kind of user influx

› Infrastructure is available on the cloud and the user has to pay for the tools and services that they are using

› Infrastructure is located on Cloud which reduces security issues

› Users can opt out of tools, services, or hardware anytime. The fee is charged on pay as you go model

› No additional resources are needed

The Way Forward

Performing testing on the cloud will become an essential practice among organizations as its scope and results become well known on a larger scale. Because of flexibility, scalability, and reduced costs, it makes sense to host and test the application on the cloud instead of preparing a dedicated in-house infrastructure.

An experienced quality engineering team would conduct performance tests on varying loads with many other factors in the mix. QualiZeal's performance engineering and the testing team do the same for client-server, web, distributed, mobile, and cloud databases applications. Our expertise assists organizations supercharge their database and understand the performance of their applications on various benchmarks, ensuring the best results under multiple circumstances.