

## DATA SHEET

# Performance Testing

Make sure your systems can handle the issues, so you don't have to

## Overview

A performance test is a process of evaluating how well a system or application performs under expected and peak workloads. Performance testing involves measuring various metrics, such as response time, throughput, resource utilization, and scalability, to ensure that the application or system can handle the expected user load and is capable of delivering the desired performance levels. By conducting a performance test, it helps:

- **Identify bottlenecks:** Performance testing allows you to identify the specific parts of the system that are causing performance issues when under heavy load.
- **Test scalability:** A performance test can help you understand how the system will perform as it scales to handle more users, transactions, or data.
- **Evaluate robustness:** Performance testing can also be used to evaluate how well a system can withstand unexpected events, such as sudden spikes in traffic, hardware failures, or other types of disruptions.
- **Improve reliability:** By identifying and fixing issues that are revealed by a performance test, you can improve the overall reliability and stability of the system.
- **Confidence in service levels:** Performance testing can help the organization to be more confident in the service level they are providing to their customers.

Conducting performance tests is an integral part of the software development process and it can help organizations identify and fix issues before they become critical problems. However, performance testing can be a resource-intensive and time-consuming process, so it's essential to carefully plan and manage the performance test to ensure that it's conducted effectively and efficiently.

## How CyStack Helps

The CyStack Audit team is composed of highly skilled and experienced professionals who possess a deep understanding of both infrastructure and security. This allows us to provide our clients with comprehensive and accurate performance testing services that can identify and mitigate potential vulnerabilities in their systems.

We use a variety of industry-standard tools and techniques to conduct performance tests and gain a detailed understanding of how a system behaves under heavy loads or adverse conditions. This includes load testing, volume testing, stress testing, endurance testing and spike testing. We also employ advanced monitoring tools to gather detailed data about the system's behaviour during the test, which helps us identify and troubleshoot performance issues and bottlenecks.

Our team members are experts in the field, trained to understand the intricacies of the infrastructure, including web servers, databases, networks, and hardware. This knowledge allows us to conduct performance testing in an efficient and precise manner, ensuring that the results are accurate and reliable. We take pride in providing our clients with an in-depth understanding of the system's vulnerabilities and giving them the knowledge to rectify them.

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### Customer Benefits

- Identifying bottlenecks
- Testing scalability
- Evaluating robustness
- Improving reliability
- Confidence in service level
- Cost savings
- Compliance

## Type of Tests

Performance Test is divided into several subgroups and below is what we can offer:

- **Load testing:** This test determines how well a system performs under normal and expected load conditions.
- **Volume testing:** This type of test is used to evaluate how the system behaves when handling a large amount of data. This can include testing the system's ability to handle large file uploads, as well as its ability to insert a high volume of records into the database.
- **Stress testing:** This test determines how well a system performs under extreme or beyond normal load conditions. The goal is to determine the system's breaking point.
- **Endurance testing:** This type of test is used to evaluate how the system behaves over an extended period of time, such as several hours or days. Endurance testing can help identify issues that only occur after prolonged use, such as memory leaks.
- **Spike testing:** This test is used to determine how well a system can handle sudden and unexpected increases in load, such as a sudden surge in website traffic.

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## Key Features

- Expertise in infrastructure and security
- Comprehensive testing
- Advanced monitoring
- Tailored services
- Detail report and recommendations
- Remediation services
- Continuous testing
- Compliance

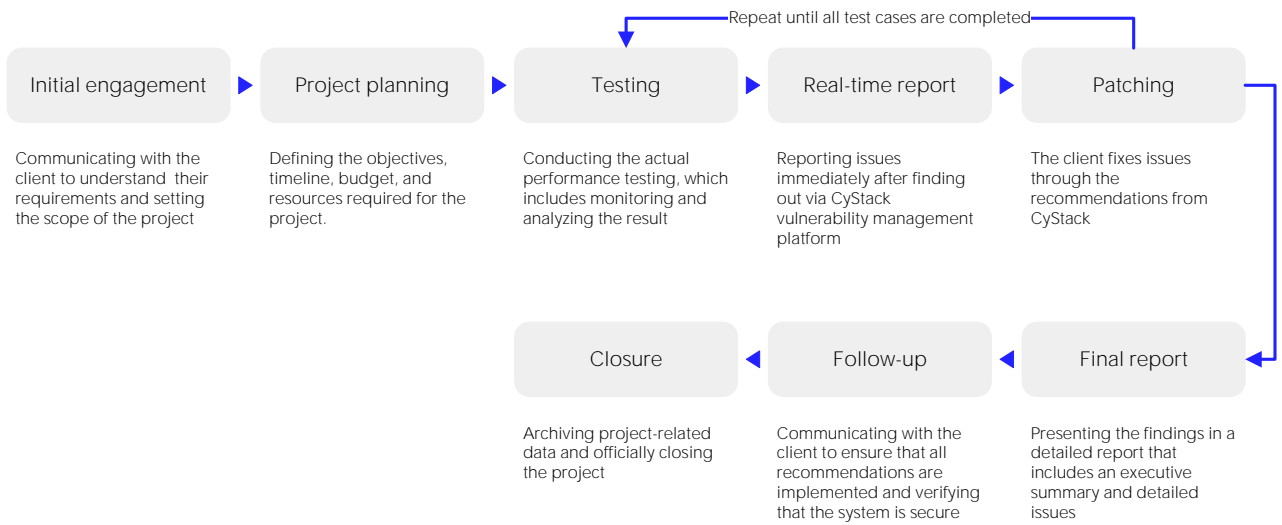
## Methodology

CyStack Performance Test typically involves the following steps:

- **Planning:** Before conducting the performance test, it's important to carefully plan the test and define the goals and objectives. This includes identifying the system or component that will be tested, the type of performance test that will be conducted, and the expected load or conditions that will be used during the test.
- **Preparation:** This step involves setting up the test environment and configuring the tools and equipment that will be used during the test. This may include setting up load generators, monitoring tools, customized scripts, and other equipment that will be needed to conduct the test.
- **Test Execution:** The actual performance test is carried out in this step. This includes simulating the expected load or conditions on the system and monitoring the system's behaviour during the test. It's important to closely monitor the system's performance and behaviour during the test in order to collect detailed data that can be used to identify and troubleshoot issues.
- **Data Analysis:** Once the test has been completed, the collected data is analyzed to understand the system's behaviour during the test. This may include looking at performance metrics, identifying bottlenecks, and analyzing log files and other data to understand how the system handled the load or conditions that were used during the test.
- **Reporting and Recommendation:** The final step is to generate a report that summarizes the results of the performance test and provides recommendations for improving the system's performance or addressing any issues that were identified.
- **Remediation:** Based on the reports, work on fixing the issues to ensure the system can handle the stress.

There are many tools available for performance testing, and the specific tool we choose will depend on the nature of the system tested and the type of performance test the client is conducting. Commonly used tools include Apache JMeter, Gatling, LoadRunner, [Flood.io](#), [Locust.io](#), and Selenium. Some of these are open-source and can be used with minimal setup. Additionally, there are cloud-based services available that can help with the performance testing of web applications and services, like AWS Device Farm, Azure DevOps, and BlazeMeter.

# Flow To Work With Clients



## About CyStack

CyStack is an innovative company in the field of cybersecurity in Vietnam. We are a pioneer in building next gen security products for businesses and individuals. Our solutions focus on data protection, cyber attack prevention, and security risk management.



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