

Software Requirements Specification (SRS) for Apache JMeter

1. Introduction

- **Purpose:** Define the requirements for using Apache JMeter to conduct performance testing on web applications.
- **Scope:** The document will cover installation, configuration, and execution of test plans, along with reporting requirements.

2. Overall Description

- **Product Perspective:** JMeter will be used for load testing and performance measurement of web applications.
- **User Needs:** Users require a reliable tool to simulate multiple users and measure application performance under load.

3. Functional Requirements

1. Installation Requirements

- Must support Java 8 or higher.
- Installation instructions for various operating systems (Windows, Linux, MacOS).

2. Test Plan Configuration

- Users must create test plans that include:
 - Thread Group configuration (number of users, ramp-up time).
 - Samplers (HTTP Requests, JDBC Requests).
 - Listeners for result visualization (View Results Tree, Summary Report).

3. Load Testing Features

- Ability to simulate a specified number of concurrent users (threads).
- Support for distributed testing across multiple machines.
- Configurable ramp-up periods to gradually increase load.

4. Performance Metrics

- Measure response times, throughput, and error rates.
- Generate reports with graphs and charts for analysis.

5. Scripting and Automation

- Support for JSR223 scripting (Groovy, JavaScript).
- Ability to run tests from the command line for automated testing scenarios.

6. Result Analysis

- Provide detailed logs of test results.

- Export test results in various formats (CSV, XML, HTML).

4. Non-Functional Requirements

- **Performance:** Must handle thousands of concurrent users without crashing.
- **Usability:** GUI should be user-friendly for creating and executing test plans.
- **Reliability:** Should provide consistent results under the same test conditions.

5. Assumptions and Dependencies

- Users have basic knowledge of performance testing concepts.
- The testing environment will have adequate hardware and network resources.

6. Glossary

- **Thread Group:** A set of threads that execute a specific test scenario.
- **Sampler:** A request made to the server during the test.
- **Listener:** A component that collects and displays test results.