**PERFROMANCE TEST PLAN**

**–**

**DEMOBLAZE**

**–**

**v1.0.0**

## **1. Introduction**

### **1.1 Objectives**

The purpose of this document is to define the overall performance testing strategy to be adopted for the new version of the application,

With respect to performance testing, the main objectives will be to check the responsive of the application and the error rate when multiple users access the application, place orders and sent messages.

### **1.2 Scope of testing**

The following table shows the performance testing activities in scope for this project, as well as the ones which are out of scope:

|  |  |
| --- | --- |
| Tasks | In scope |
| Test Data Preparation | Yes |
| JMeter script development | Yes |
| Smoke Test Execution | Yes |
| Baseline Test Execution | No |
| Load Test Execution | Yes |
| Stress Test Execution. | No |
| Scalability Test Execution | No |
| Concurrency Test Execution | No |
| Reliability Test Execution | No |
| Exploratory Test | No |
| Test Environment Monitoring | Yes |
| Results analysis | Yes |
| Performance Test Report delivery | Yes |

## **Performance test strategy**

As the application is going to be installed in the production environment, it is essential to make sure that the application will be stable and usable in production.

Thus, performance testing was initially focused on the following goals:

* Check response time of main transactions under average production load;
* Check error rate of main transactions under average production load.

### **2.1 Details of the activities**

Performance testing for this project is based on the simulation of real users using Apache JMeter scripts (an open source software designed to perform load testing and measure performance.

According to the objectives of this testing phase the following test scenarios must be executed:

*[Cuáles son las pruebas que aplican a la estrategia]*

* **Load Test:** in order to check if the response times for the main transactions related to Certificates are acceptable under production volumes of load using the application within a long period of time.

### **2.3 Workload cases**

### **2.3.1 Test case 1 – Access home page**

**Delay between steps: 5 seconds**

* Access home page

### **2.3.2 Test case 2 – Place order**

**Delay between steps: 5 seconds**

* Access home page
* Select login and login with valid credentials
* Navigate to phones, select a phone and add it to cart
* Navigate to laptops, select a laptop and add it to cart
* Navigate to monitors, select a monitor and add it to cart
* Go to cart and place the order

### **2.3.3 Test case 3 – Send message**

**Delay between steps: 5 seconds**

* Access home page
* Fill contact form and send

## **Virtual users distribution**

The following table shows all scenarios among with users distribution.

|  |  |  |  |
| --- | --- | --- | --- |
| Test case | Max users | Remp Up Period | Full Load Duration |
| Smoke test | 3 | 1 minute | 10 minutes |
| Load test | 50 | 15 minutes | 4 hours |

### **3.1 Smoke test**

This test is aimed in find performance issues in an early stage and to check the feasibility of running the complete set of performance scenarios. The following table represents a selected set of profiles that better represents the application and the virtual user distribution for the Smoke Test Configuration:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Test Case | Number of users | Ramp-up Period | Iteration rate | Full load period |
| Test case 1 | 1 | 1 minute | Continuous | 10 minutes |
| Test case 2 | 1 | 1 minute | Continuous | 10 minutes |
| Test case 3 | 1 | 1 minute | Continuous | 10 minutes |

### **Load test**

The main goal of this test is to check the average response time under production load. The following table represents the virtual user distribution for the Load Test configuration:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Test Case | Number of users | Ramp-up Period | Iteration rate | Full load period |
| Test case 1 | 20 | 15 minutes | Continuous | 4 hours |
| Test case 2 | 25 | 15 minutes | Continuous | 4 hours |
| Test case 3 | 5 | 15 minutes | Continues | 4 hours |

## **Initial test data conditions**

In order to have accurate results, before the test execution, the system must be populated with test data in order to simulate a more realistic situation in terms of data volumes.

|  |  |
| --- | --- |
| Test case | Data needed |
| 2 | 4 user accounts |
| 2 | 7 phones |
| 2 | 5 laptops |
| 2 | 2 monitors |

## **Acceptance criteria**

The average response time for all the transactions should not exceed 3 seconds.

Besides, an error rate higher than 5% will be considered as unacceptable. Error rate of 2% should be considered to be investigated.

## **Terminology**

**JMeter**: open source software designed to perform load testing and measure performance.

**Load Test**: type of testing usually carried out in order to understand the behaviour of an application at a given level of load. This load can be the number of users expected to execute or number of transactions in a given time frame. Test results give us the response-times of all critical transactions.

**Ramp up Period**: lapse of time between the start of a test and the moment when the maximum user concurrency is reached (all the virtual users have started their execution).

**Full Load Period**: lapse of time between the moment when the maximum user concurrency is reached (all the virtual users have started their execution), and the end of the test.