./

GENESIS - Learning Outcome & Shadow Project Summary Report



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| **Ver. Rel. No.** | **Release Date** | **Prepared. By** | **To be Reviewed By** | **Remarks/Revision Details** |
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**Details**

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# Modules

* Performance testing
* JMeter
* Performance monitoring tools (JProfiler & PerfMon)

# Topic and Subtopics

* Recording JMeter scripts
* Parameterization with CSV data config element
* Dummy test data preparation
* Stepping thread group
* Report generation
* Distributed load testing
* Performance monitoring tools
* Test execution scheduling script

# Objectives

* Evaluating basic of STLC knowledge
* Environment setup: JMeter Installation along with necessary plugins.
* POC Documenting: Understanding functionality and Communication with the application under test with JMeter
* Work Load module creation: will help you out to design the scenarios by specifying number of users and number of transactions.
* Recording and enhancements: Learn on how to record the scripts using JMeter and convert it into effective re-usable test cases.
* Test data preparation: Learn on how to prepare static data set for execution.
* Scenario design and execution: Learn scenario designing and execution process.
* Reporting and Analysis: Creation of customized test execution reports and analyzing the report to identify the bottlenecks
* Recommendations: Sharing report and bottlenecks to respective team

# Requirements

## High-level requirement:

|  |  |
| --- | --- |
| **ID** | **Description** |
| HL\_01 | Environment setup – Java and JMeter installation along with custom thread group plugin. |
| HL\_02 | Understanding the AUT |
| HL\_03 | Developing the performance test scripts. |
| HL\_04 | Generation of test execution reports |
| HL\_05 | Distributed load testing scripts |
| HL\_06 | Performance monitoring tools |
| HL\_07 | Test execution script |

Table High level requirements

## Low Level Requirement:

|  |  |
| --- | --- |
| **ID** | **Description** |
| HL\_01\_L\_01 | Installing Java |
| HL\_01\_L\_02 | Installing JMeter with custom thread group plugin |
| HL\_02\_L\_01 | Understand and learning to develop the scripts for interacting with the application. |
| HL\_03\_L\_01 | Record the scripts using JMeter |
| HL\_03\_L\_02 | Modifying recorded scripts with stepping thread groups |
| HL\_04\_L\_01 | Generating CSV and HTML reports |
| HL\_05\_L\_01 | Setup controller node and worker node |
| HL\_05\_L\_02 | Run test on multiple worker nodes for distributing system resources |
| HL\_06\_L\_01 | Performance monitoring using JProfiler and PerfMon |
| HL\_07\_L\_01 | Reusable bash script for running JMeter test scripts and generating reports |

Table Low level requirements

# Design

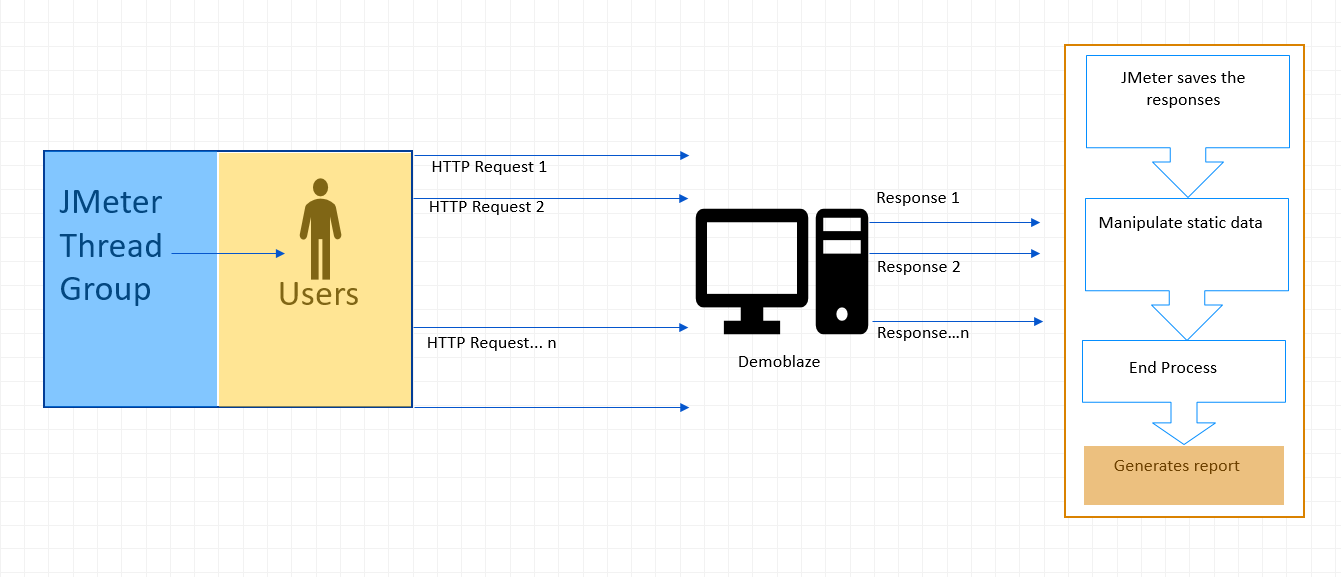


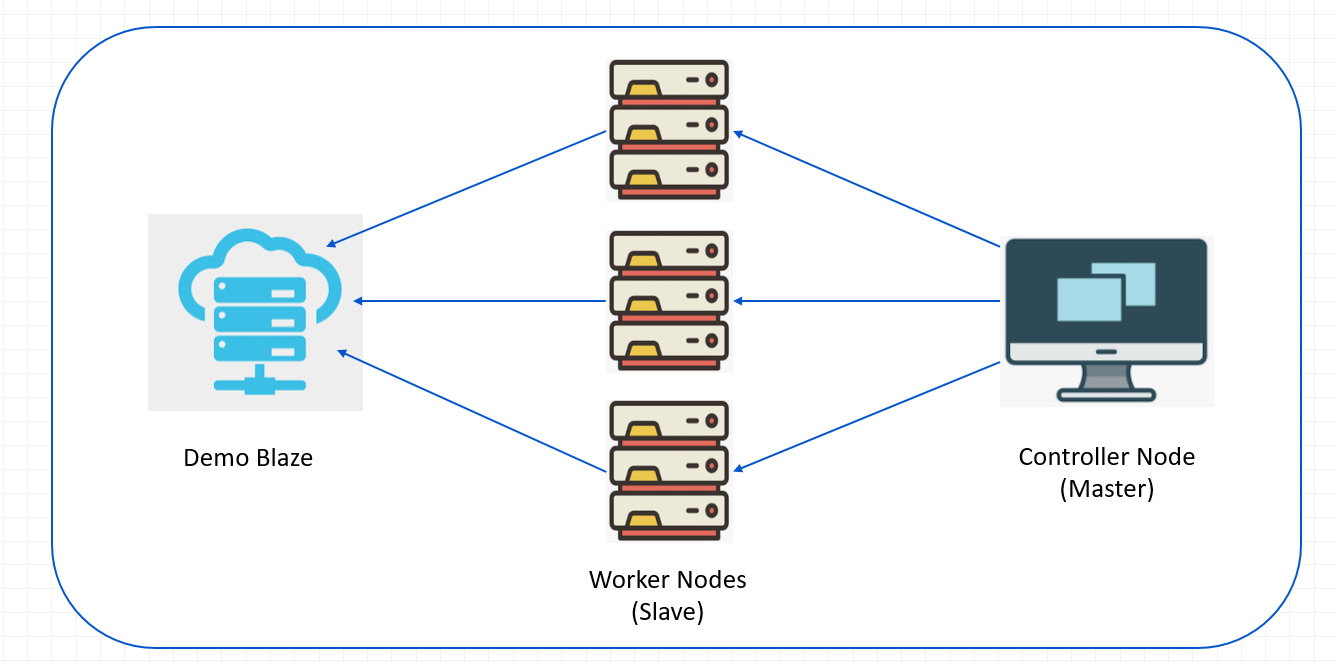
Figure Demoblaze test architecture

Figure Distributed load testing architecture

# Test Plan

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Category** | **TC ID** | **Title** | **Pre-condition** | **Steps (Step)** | **Steps (Expected results)** |
| Launch | TC\_01\_01 | Launch home | 1. Access to the AUT 2. Internet access | 1. Enter URL in browser 2. Press enter key | 1. Should allow to enter URL in browser 2. Home page should launch |
| Login | TC\_02\_01 | Login valid user credential | Login page should be open | 1. Enter valid user credentials 2. Click on Login button | 1. User details should be filled in  2. User should login |
| TC\_02\_02 | Login with valid username but invalid password | Login page should be open | 1. Enter valid username 2. Enter invalid password 3. Click on Login button | 1. Valid username should be entered 2. Invalid password should be entered 3. User should be prompted for wrong invalid password error |
| TC\_02\_03 | Login with invalid username but valid password | Login page should be open | 1. Enter invalid username 2. Enter valid password 3. Click on Login button | 1. Valid username should be entered 2. Invalid password should be entered 3. User should be prompted for invalid username error |
| TC\_02\_04 | Login with invalid user credentials | Login page should be open | 1. Enter invalid username 2. Enter invalid password 3. Click on Login button | 1. Valid username should be entered 2. Invalid password should be entered 3. User should be prompted for invalid username error |
| Browse laptops | TC\_03\_01 | Browse laptops | Laptop category should be available | 1. Go to category section 2. Click on Laptops | 1. Category section should be available 2. Laptop option should be available |
| Select MacBook Pro | TC\_04\_01 | Select MacBook Pro | Browse laptop category should be available | 1. Find the MacBook Pro in list of Laptops 2. Click on the MacBook Pro | 1. MacBook Pro should be available in the list of laptops 2. MacBook Pro product page should open |
| Add to cart | TC\_05\_01 | Add to cart option | 1. MacBook Pro product page should be available 2. Add to cart button should be enabled | Click on add to cart button | Added to cart prompt message should be displayed and MacBook Pro should be added to the cart |
| View cart | TC\_06\_01 | View the cart page | Cart should be available | Click on the view cart button | Cart page should open and any items added to the cart should be visible with price information |
| Place order | TC\_07\_01 | Place order | 1. Cart should be available 2. Products added to the cart should be visible | 1. Click on place order button 2. Enter address details 3. Pay for the product | 1. Order placed message should pop up and order should be placed 2. Address details should be entered 3. Payment should be successful |
| Logout | TC\_08\_01 | Logout | User should be logged in | Click on logout button | User should be logged out |

Table Demoblaze test plan

# Workload Model



Table Demoblaze workload model

# Implementation Summary

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **S No.** | **Tasks** | **W1** | **W2** | **W3** | **W4** | **W5** | **W6** | **W7** | **W8** |
| 1 | Team Onboarding, Requirement Analysis & Understanding |  |  |  |  |  |  |  |  |
| 2 | Tool Understanding & Environment Setup |  |  |  |  |  |  |  |  |
| 3 | Application understanding and Design of manual test cases |  |  |  |  |  |  |  |  |
| 4 | Creating workflow model |  |  |  |  |  |  |  |  |
| 5 | Script development and Test data preparation |  |  |  |  |  |  |  |  |
| 6 | Execution and Reporting |  |  |  |  |  |  |  |  |
| 7 | Evaluation and final presentation |  |  |  |  |  |  |  |  |

Table Project plan

## Week 1

* Installation of Java and JMeter
* Introduction to Performance Testing Life Cycle
* Getting familiar with various elements of JMeter

## Week 2

* Recording JMeter scripts
* Parameterization with CSV data config element
* Dummy test data preparation
* Testing of SSC portal for single and multiple users

## Week 3

* Installation of Postman
* Test script design of iBEMS application from postman collection
* Testing of demoblaze.com for multiple users

## Week 4

* Adding custom thread groups through plugins
* Testing of SSC portal and demoblaze using stepping thread group and generating report
* Test execution from terminal (non-GUI mode) to save on resources
* Distributed load testing
* Performance monitoring
* Test execution script

# Test Results

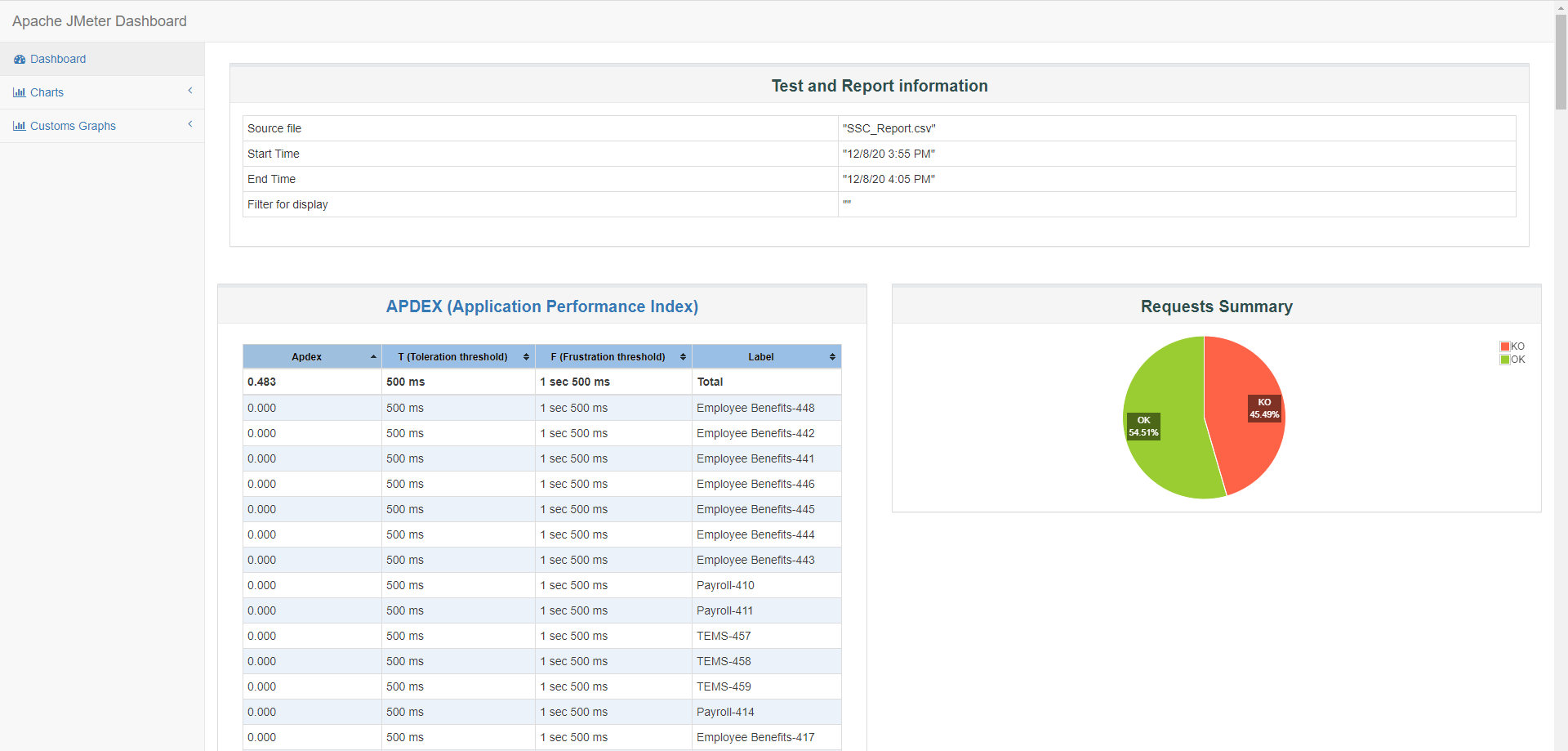


Figure : SSC Portal Test Report

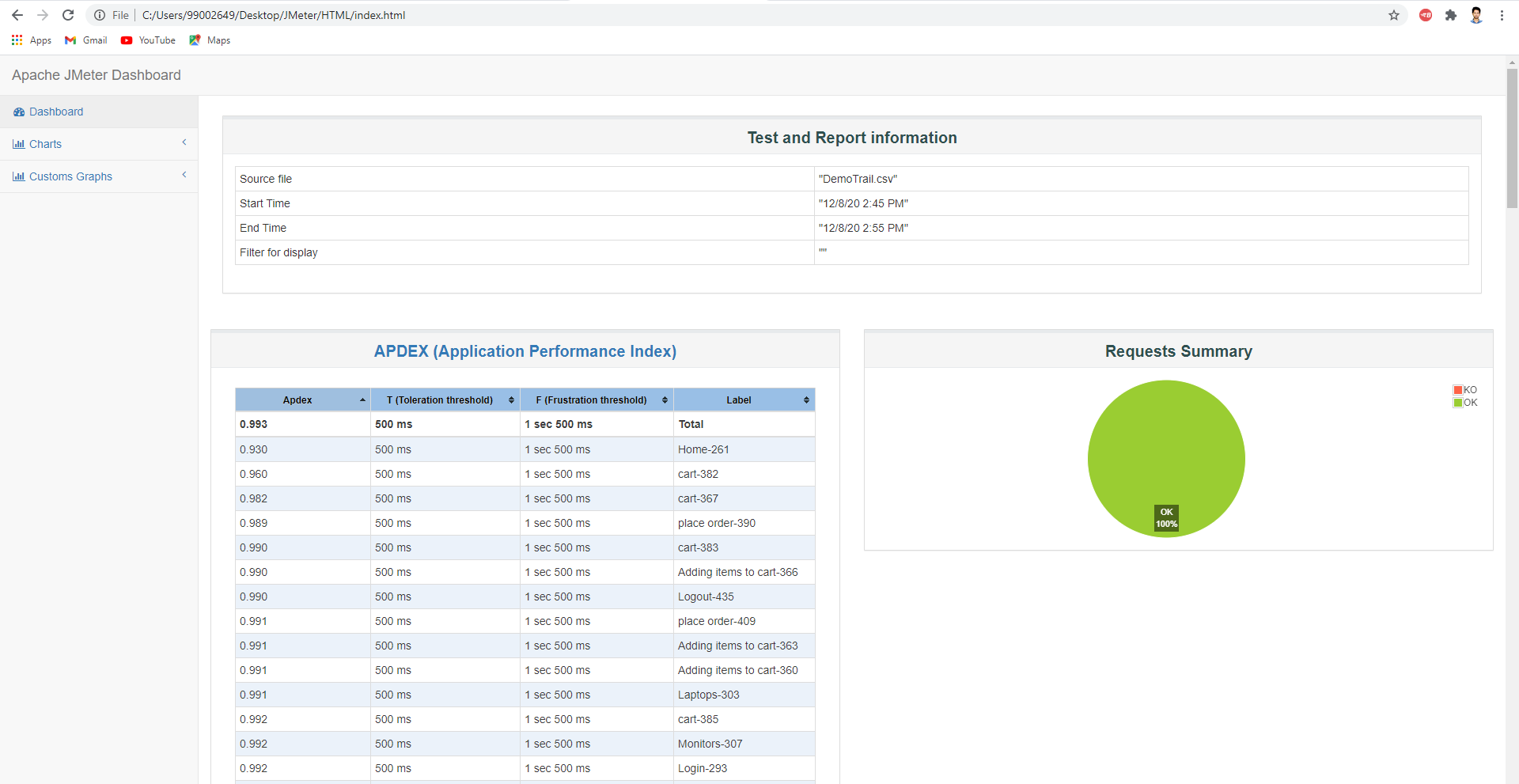


Figure : Demoblaze Test Report

# Challenges faced

* Lack of access to end application, iBEMS, due to the application being moved to intel environment.

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