GENESIS - Learning Outcome & Shadow Project Summary Report

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Details

Ver. Rel. No.	Release Date	Prepared. By	To be Reviewed By	Remarks/Revision Details
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2.	17-12-2020	Milind Mohapatra, Y Sushank	Veeresh Tonne & Achukatala Shaik	

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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 1 High level requirements

Low Level Requirement:

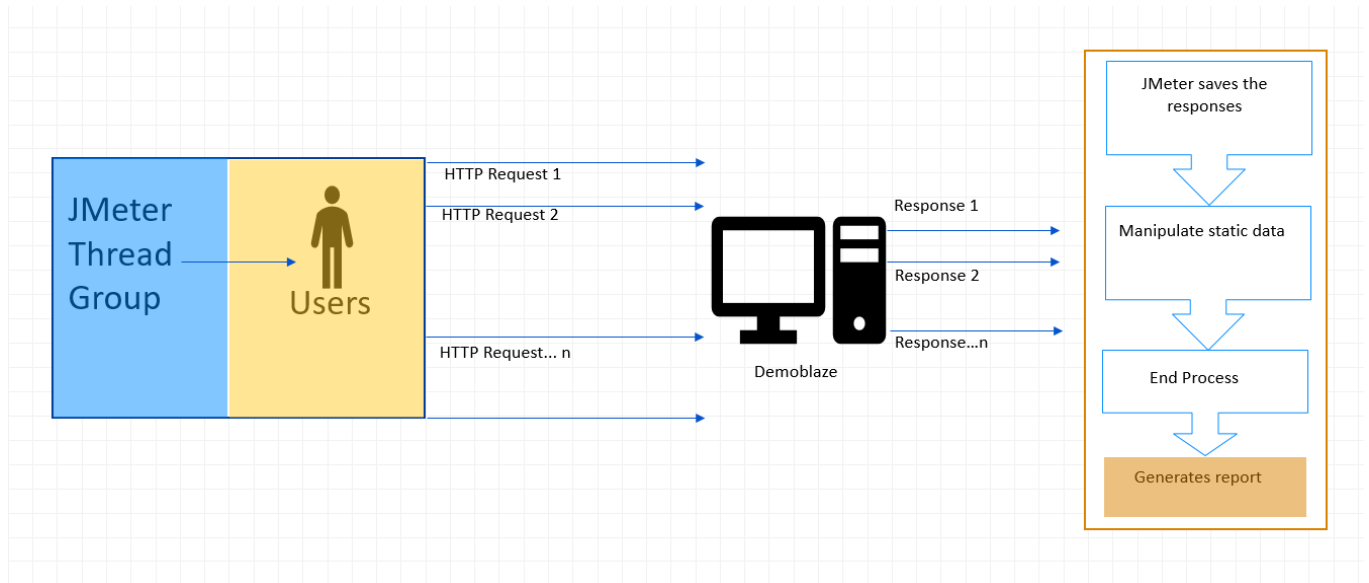| ID	Description
HL_01_L_01	Installing Java
HL_01_L_02	Installing JMeter with custom thread group plugin
HL_02_L_01	Understand and learning to develop the scripts for interacting with the application.
HL_03_L_01	Record the scripts using JMeter
HL_03_L_02	Modifying recorded scripts with stepping thread 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 2 Low level requirements

Design
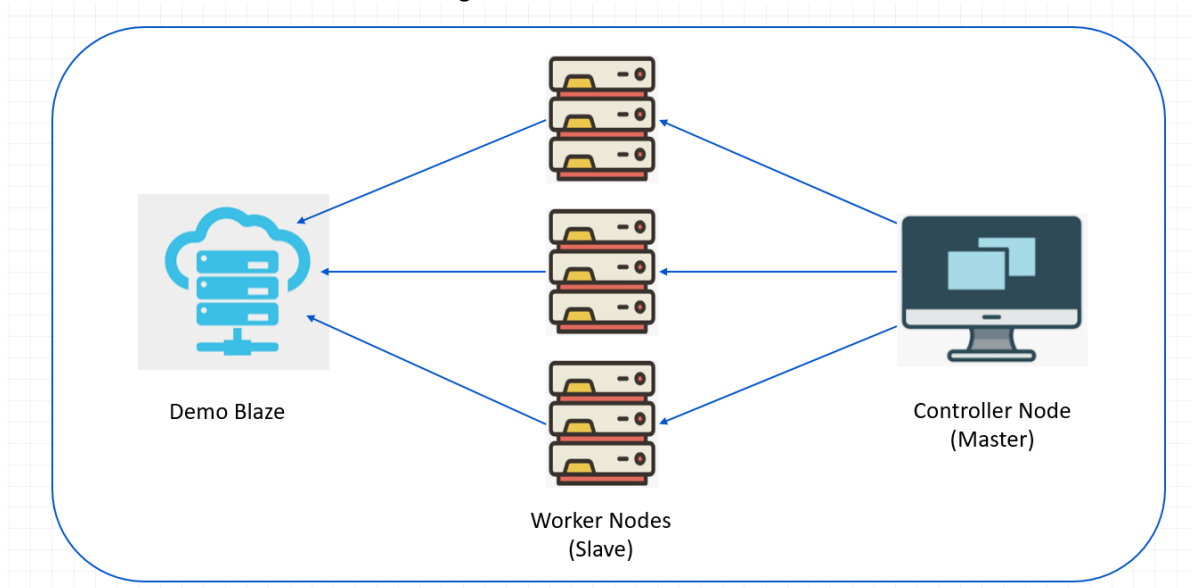

Figure 1 Demoblaze test architecture

Figure 2 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

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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 3 Demoblaze test plan

Workload Model

Workstream	Data sent	6 am to 7 a	7 am to 8 a	8 am to 9 a	9 am to 10	10 am to 1	11 am to 1	12 pm to 1	1 pm to 2
Demoblaze									
Launch		20	50	100	400	600	750	500	400
Signup	Username	2	30	70	100	200	200	100	100
Login	Username	5	40	65	300	450	500	250	300
Browse laptops		7	30	50	350	350	400	300	350
Select MacBook Pro		3	15	45	260	230	300	230	260
Add to cart		10	45	60	300	300	600	200	300
View cart		10	43	54	280	350	600	300	280
Place order		10	40	50	250	300	550	150	250
Send mes	Message	5	15	20	100	180	300	50	100
Logout		3	20	30	200	200	300	100	200

Table 4 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 5 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
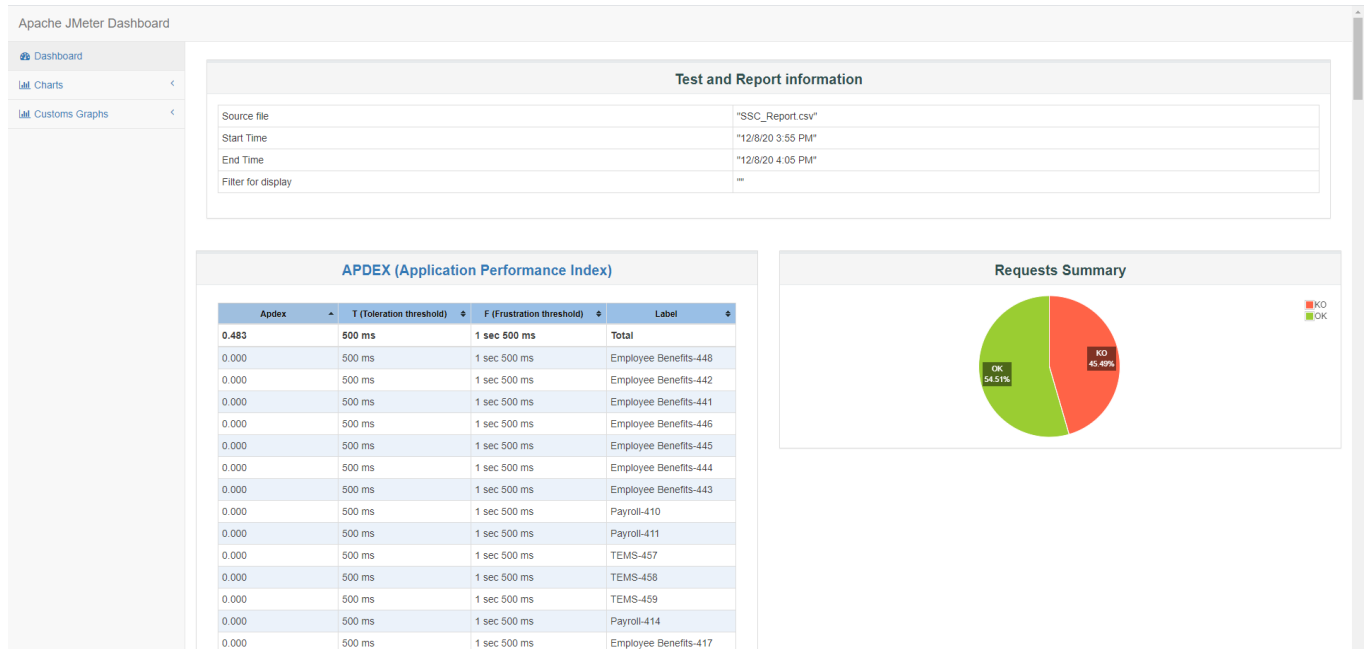- Test execution script
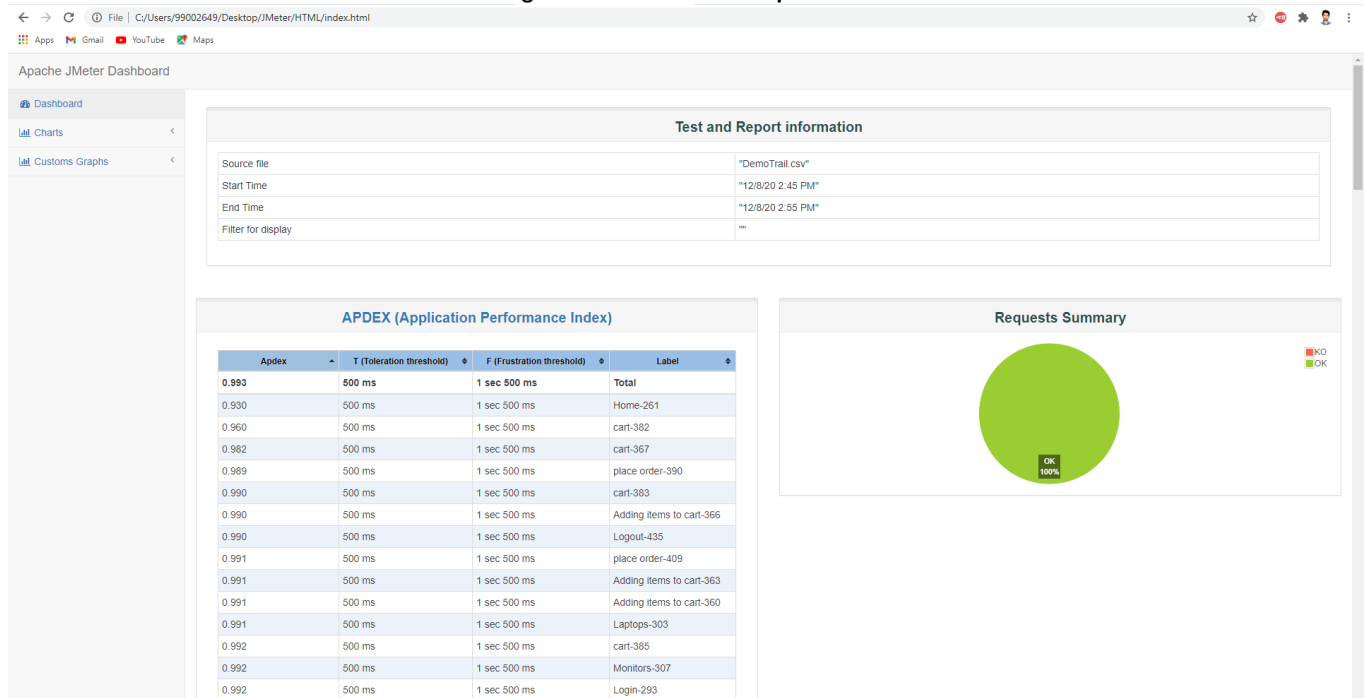
Test Results

Figure 3: SSC Portal Test Report

Figure 4: 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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