

**Performance Test Plan**

**Author:** M K Vishwa Prasad

**Date: 1**2/25/2020

**Location:** Hyderabad

**Revision History**

|  |  |  |  |
| --- | --- | --- | --- |
| **Created Date** | **Modified Date** | **Version** | **Author** |
| 18-Dec |  | V1.0 | M K Vishwa Prasad |
| 31-Dec |  | V2.0 | M K Vishwa Prasad |
|  |  |  |  |
|  |  |  |  |

Table of Contents

[Project Background 4](#_Toc64465307)

[Objectives 4](#_Toc64465308)

[Test Environment 4](#_Toc64465309)

[Tools 5](#_Toc64465310)

[Business Scenarios - User mix 5](#_Toc64465311)

[Test Data 6](#_Toc64465312)

[Test Strategy 7](#_Toc64465313)

[Roles and Responsibility 8](#_Toc64465314)

[Timeline 8](#_Toc64465315)

[Assumptions 9](#_Toc64465316)

[Risks and Contingencies 9](#_Toc64465317)

[Performance Test Results and Benchmarking 9](#_Toc64465318)

# Project Background

BV has started the journey of transforming how engineering activities get executed today. By simplifying engineering task management, leveraging historical projects data and providing a collaborative unified platform BV hopes to achieve the following:

* Increase profitability by improving collaboration, increasing productivity of global teams, obtaining real-time visibility on earned value and forecasts
* Ease of use through intuitive UX reducing effort for change management and training cost

Why they have come for Performance testing and how Wipro give solution

# Objectives

The automated performance tests provide us information on page load time, response time and throughput. Wipro will:

• Design scripts and scenarios as per workload details collated to achieve the expected transaction rate

• Execute the planned Load for bottleneck analysis.

• Verify test parameters, which include Response Time, Throughput, Hits/Sec, Passed and Failed Transactions and Metrics related to memory mentioned under testing objectives.

• Monitor test server, collecting the test results

The performance testing also provides information to developers about the scenarios that are not performing well and helps them to improve the code.

# Test Environment

Separate envrionment is needed for performance testing. As per discussions with BV team, UAT enviornment will be utilized for performance testing. During performance testing, UAT environment should not be accessed by project team members.

Environment Name : Resource Group: Laminar\_001\_Perf\_Sec

|  |  |
| --- | --- |
| **Test Environment components** | Nodejs  Reactjs,  Java,  Cosmos db,  Apache Tomcat. |

# Tools

Following tools will be used in performance testing

* Test Management Tool: - AzureDevops
* Defect Tracking Tool: - AzureDevops
* Automation Tool: - Azure DevOps pipelines/repo
* Performance Testing Tool: - JMeter

|  |  |  |  |
| --- | --- | --- | --- |
| **CPU** | **Memory** | **Machine Model** | **Disc Space** |
| laminar-perf-sec-backend-02 |  |  |  |
| laminar-perf-sec-kmda-02 |  |  |  |
| laminar-perf-sec-plan-02 |  |  |  |
| laminar-perf-sec-plan-insights-02 |  |  |  |
| laminar-perf-sec-ui-02 | 14GB | Cloud | 250GB |
| laminar001PerfSec-rvs |  |  |  |
| laminarperfsec-cosmosdb-02 |  |  |  |
| laminarperfsec-sql-02 |  |  |  |
| laminarperfsecbus02 |  |  |  |
| laminarperfsecredis02 |  |  |  |
| laminarperfsecstor02 |  |  |  |

# Business Scenarios - User mix

Total Users considered : 50 for MVP

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Epic** | **Scenarios/Work Header** | **User Mix** | **Business Role** | **Access Permission** |
| Project Setup | Project Information | 2 | Project Level Initiator | PLI |
|  | WBS Info | 2 | Project Level Initiator | PLI |
|  | Manhour Budget | 2 | Project Level Initiator | PLI |
|  | Reference Library- | 2 | Project Level Initiator | PLI |
|  | Workflow Rules | 2 | Project Level Initiator | PLI |
|  | Assign Teams- | 2 | Project Level Initiator | PLI |
|  | Non Laminar Output- | 2 | Project Level Initiator | PLI |
|  | Project Setup Home- | 2 | Project Level Initiator | PLI |
|  | Project Information | 2 | Displine Specific Project Setup | DPS |
|  | WBS Info | 2 | Displine Specific Project Setup | DPS |
|  | Reference Library | 2 | Displine Specific Project Setup | DPS |
|  | Assign Teams- | 2 | Displine Specific Project Setup | DPS |
|  | Project Activities | 2 | Displine Specific Project Setup | DPS |
|  | Gig Workflows | 2 | Displine Specific Project Setup | DPS |
|  | View/Approve Full plan | 2 | Displine Specific Project Setup | DPS |
|  | P6-Send/receive | 2 | Project Controller | PJC |
|  | Input/Ouputs | 2 | Displine Specific Project Setup | DPS |
| Engineering Execution | Laminar Scope | 3 | Gig Distributor/Gig Completor | GD/GC |
|  | Project Dashboard | 3 | Gig Distributor/Gig Completor | GD/GC |
|  | Reference Library | 3 | Gig Distributor/Gig Completor | GD/GC |
|  | P6-Send/receive | 2 | Project Controller | PJC |
|  | Input/Ouputs | 2 | Gig Distributor/Gig Completor | GD/GC |
|  | My Project Home | 3 | Gig Distributor/Gig Completor | GD/GC |

Scenarios will include View/Edit activities by users on sub sections.

# Test Data

Test Data required for performance testing as required

# Test Strategy

The test scripts will be developed in JMeter tool. It will watch and measure the CPU utilization of the web and database server used during testing. It will analyze and present the performance test results

* **Load testing -** checks the application's ability to perform under anticipated user loads. The objective is to identify performance bottlenecks before the software application goes live.
* **Ram-pup -** The ramp-up period tells JMeter how long to take to "ramp-up" to the full number of threads chosen. If 10 threads are used, and the ramp-up period is 5mints, then JMeter will take 5mints to get all 10 threads up and running.
* **Steady State - The** ramp-up period tells JMeter how long to take to "ramp-up" to the full number of threads chosen. If 10 threads are used, and the ramp-up period is 5mints, then JMeter will take 5mints to get all 10 threads up and running.
* **Ramp-down -** Let’s create a simple test: 50 virtual users; 10 seconds long; Ramp-up time is 0 seconds. Let’s also add a random delay before the request to the website to simulate real user behavior.
* **Think time:** It is defined as the time between the completion of one request and the start of the next request

# Roles and Responsibility

|  |  |  |
| --- | --- | --- |
| **Role** | **Responsibilities** | **Point Of Contact** |
| QA Lead | * Conduct meeting with the business or development team to identify the scope * Thorough understanding of business and the infrastructure * Preparing the performance test strategy * Analyzing the tool capabilities * Securing the performance test environment * Communicating with business/development team manager regularly * Coordinating performance testers and monitoring their progress * Reviewing the test scripts * Reviewing the workload model * Reviewing the test execution results * Reviewing the final test results | M K Vishwa Prasad |
| QA Engineers | * They are responsible for designing, implementing, and supporting performance testing system and strategies * They can start executing the scripts and maintain |  |
| Development Team | Fix the performance gaps, issues |  |
| Cloud Support Team | Monitor system parameters and ensure availability of performance Environment |  |
| BV Architect: | Architect should approve Performance test plan and give sign-off to the project. After reviewing performance test results |  |
| Wipro Architect: Rajendra |

# Timeline

|  |  |  |
| --- | --- | --- |
| **Phases** | **Start Date** | **End Date** |
| Requirements | 15-Feb | 19-Feb |
| Test Plan | 15-Feb | 19-Feb |
| Scripting |  |  |
| Execution |  |  |
| Result |  |  |
| Analysis |  |  |

# Assumptions

Following are the assumptions made (Add / Remove as per your requirement):

– Performance Test Plan document is prepared and signed-off by the BV team.

– Script workflow is documented and signed-off.

– Performance Testing will be done on dedicated and controlled environment.

– Performance Test execution will be done on the same build that goes into Production.

– The Database in Test environment is replica of Production Database.

# Risks and Contingencies

|  |  |  |
| --- | --- | --- |
| **Risks** | **Mitigation** | **Contingency** |
| Test scripts prepared in previous builds are often unreliable on latest builds due to functional changes and bug fixes. | Start rebuilding the scripts from start or modify the existing scripts | This issue will cause additional time and cost of re-building the scripts on latest build. |
| Planned/Unplanned server down time during Performance Testing activity will affect the test | When the server is down. We will plan to check the coding stands are meet | Such delay in execution will be communicated. |
| Change in application/server/test data/configuration may require modification of performance test script(s). | If the server configuration is change. We need to rebuild the performance scripts | It may also impact load test schedule. |
|  |  |  |

# Performance Test Results and Benchmarking

Based on performance test scripts, initial results will be shared.

This will be initial baseline benchmark for application performance.