BAHAGIAN PERUNDINGAN ICT, MAMPU

PERFORMANCE TEST PLAN

Nama Sistem (short form)

6 Disember 2018

Version 1.0

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DOCUMENT CONTROL

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Revision History

Date	Version No.	Chapter/ Section/ Page Changed	Changes Description	Created/ Changes by
29/11/2018	1.0	All section	First issue	Roshaimieza Bt Mat Adam
6/12/2018	1.0	All section	Reviewed	Mohd Hasiady Bin Yasin

Abbreviations

BPI	Bahagian Perundingan ICT
MyTCoE	Malaysian Testing Center of Excellence
Shortform system	Nama penuh sistem
BKD	Bahagian Kerajaan Digital
PT	Performance Test

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TABLE OF CONTENTS

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1. INTRODUCTION

This document captures and presents various aspects relevance to the Performance Test (PT) for ==Nama penuh sistem== project. Details within include the objective of the Performance Test Plan, the activities involved, timeline, deliverables and various others information related to the test environment.

Purpose

The purpose of this documents is to define the overall Performance Test Plan for ==Shotformsystem== project. A successful performance test is one of the key factors in ensuring a smooth and low risk production rollout.

Objective

The objectives of this performance test exercise is to:

a) Identify the behaviour and performance over load for ==Shotformsystem== project
b) Identify the user concurrency limit of ==Shotformsystem== project
c) Identify the current user concurrency limit for the existing setup
d) Identify the bottlenecks and area for improvements during the test
e) Conduct post mortem and root cause analysis to pinpoint the slow performing or problematic lines of code that causing errors and exceptions

Project Description

==Nama sistem== merupakan satu platform pemantauan ke atas pematuhan kriteria-kriteria bagi laman web dan perkhidmatan dalam talian Kerajaan.

Objektif Projek

a) *Menyediakan sistem aplikasi bagi kemudahan pemantauan laman web dan perkhidmatan dalam talian Kerajaan.*
b) *Menyediakan kemudahan mengukur tahap pematuhan kriteria berdasarkan tujuh (7) dimensi yang telah ditetapkan.*
c) *Menyediakan kemudahan mengukur tahap kepuasan pengguna perkhidmatan dalam talian kerajaan.*
d) *Menyediakan kemudahan secara elektronik untuk pengemaskinian maklumat profil laman web dan perkhidmatan dalam talian Kerajaan.*

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2. TESTING SCOPE

Concurrent User and Response Time

a) Number of Concurrent user   : 1,000

b) Response time   : 5 second

Load Test

c) Run load test for two(2) cycle with three (3) iteration for each cycle

   - Iteration 1 for 100 concurrent user

   - Iteration 2 for 300 concurrent user

   - Iteration 3 for 1,000 concurrent user

Stress Test

d) Run stress test for 3,000 concurrent user

Monitoring

e) Monitor server utilization during performance test

f) Monitor server utilization when crawler process is running

Business Transaction

g) One (1) business transaction

   - Landing Page -> Login -> Dashboard -> Update Profile > Logout
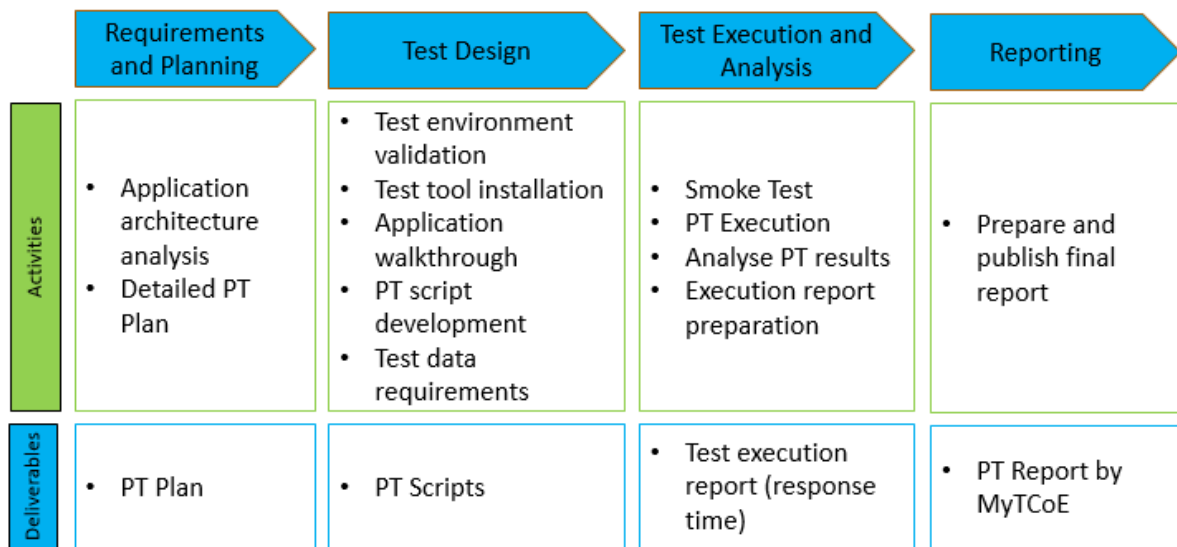
3. TESTING METHODOLOGY

Figure 1: Performance Testing Methodology

a) Requirements and Planning
- Application architecture study and analysis.
- Information gathering and preparation of detailed PT test plan.

b) Test Design
- Identify and validate pre-requisites of PT - functionality stable application, data availability, access for transaction navigation etc.
- Test tools installation and configuration.
- Application walkthrough in PT environment.
- Test data requirements.
- Script creation to simulate business transaction in PT test environment.

c) Test Execution and Analysis
- Execute smoke test to verify and validate the script and dummy data.
- Execute performance test.
- Capture result of performance test.
- Analysis of PT result and reporting of transaction response time.

d) Reporting
- Prepare and publish report.

4. TESTING REQUIREMENTS

Test Data

a) 1,000 test accounts for concurrent access

b) Dummy data for test simulation

Hardware Requirements

a) Enabling system and component monitoring

b) Hardware for performance test simulation

c) Development environment for preparation work and scripting

Firewall Requirements

a) Firewall access enablement

IP Address

a) IP addresses for load controller, load generator and monitoring server

5. TESTING TOOLS

a) Performance testing tools
NeoLoad

b) Application performance monitoring tools
Dynatrace Agent

c) Hardware

- **Load Generator Server**
  OS: CentOS
  4 Core CPU, 8GB RAM, 50GB Hardisk

- **Load Controller Server**
  OS: Windows Server 2012
  8 Core CPU, 16GB RAM, 300GB Hardisk

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6. TESTING ENVIRONMENT

Three(3) environment is setup for <mark>shortformsystem</mark> (Development, Staging and Production environment). All server and application in production environment is configured and ready for go live.

Performance test will be executed in <mark>shortformsystem</mark> production environment.

7. TESTING EVALUATION CRITERIA

Performance test evaluations criteria for <mark>shortformsystem</mark> are:

- Transaction response time
  - Transaction response time for login, landing page and dashboard is less than 5 seconds
- Failure rate
  - Less than 2%
- User load over performance and resource usage
- System performances
- Errors and exceptions

8. ROLES AND RESPONSIBILITIES

a) Performance Testing

MyTCOE Team

- shall script and conduct the performance test
- shall advise and ensure that the performance test covers key areas of the system
- shall advise on types of monitoring to enable during performance test

<mark>shortformsystem</mark> Team
- shall identify and inform which business processes to test
- shall prepare the environment to conduct the performance test
- shall enable the monitoring as advised by MyTCoE to monitor the performance and resource usage
- shall provision for required desktops, hardware, network connectivity and other operations requirements

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b) Monitoring and Reporting

MyTCOE Team

- provide a performance assessment report after each test cycle
- monitor and report any performance issue or system bottleneck

<mark>shortformsystem</mark> **Team**

- fine tune or resolve the performance issues in the system as identified
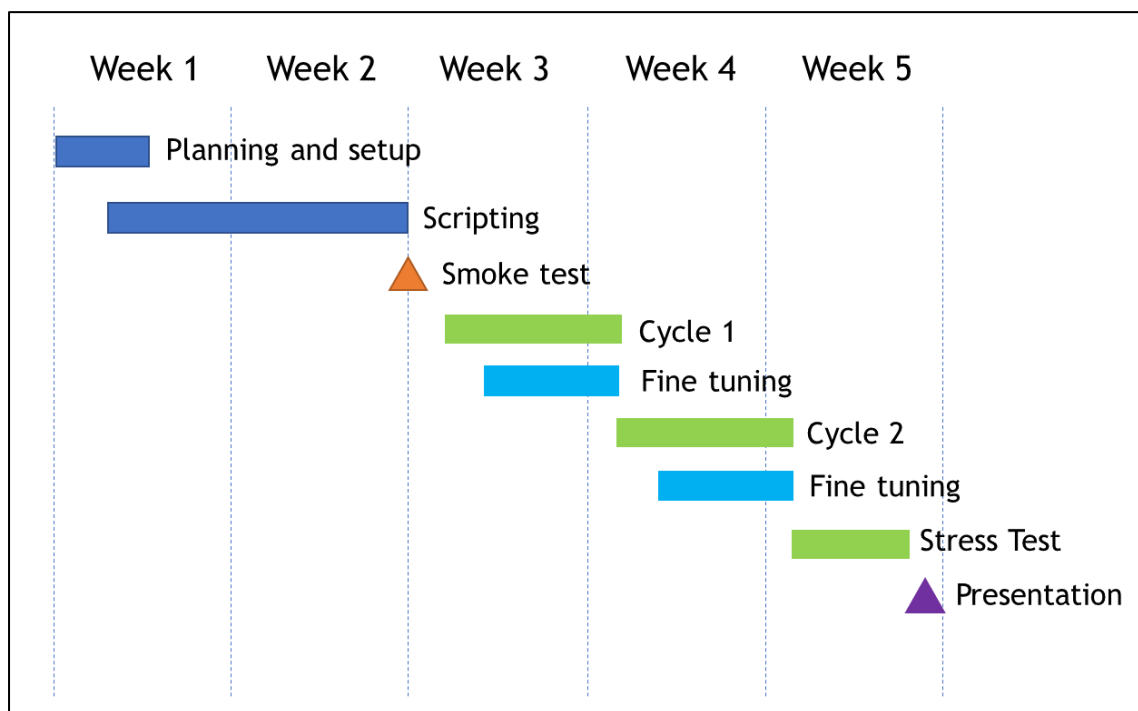
9. PROPOSED PROJECT TIMELINE

Figure 2: Proposed project timeline
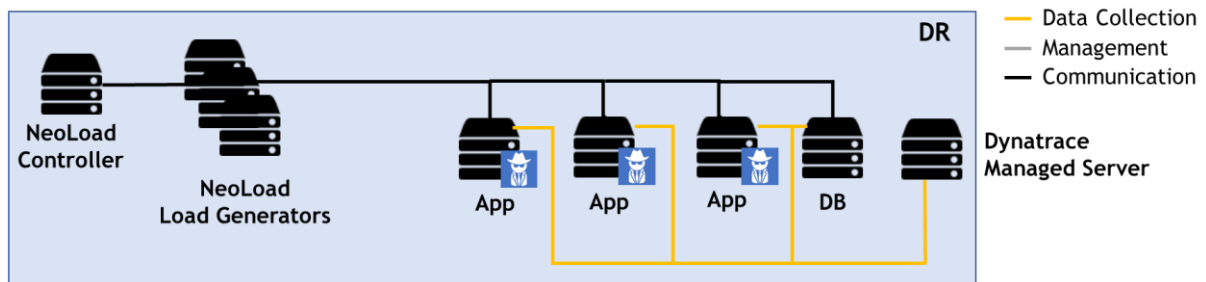
10. PROPOSED DEPLOYMENT ARCHITECTURE

Figure 3: Proposed deployment architecture

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11. APPENDICES

Appendix A: <mark>shortformsystem</mark> Architecture

Appendix B: Software Testing Pre-Requisite Form for <mark>shortformsystem</mark>

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