| <Company Logo> | <Company Name>  <Company slogan> |
| --- | --- |

<Project Name>

Performance Test Report Template

Version X.X

MM/DD/YYYY

**Document Number:** <document’s configuration item control number>

**Contract Number:** <current contract number of company maintaining document>

Performance Test Report Sign-off

<List out the name of import stakeholders responsible to sign-off the document>

Table 1: Sign-off Detail

| Name | Role / Designation | Signoff Date | Signature |
| --- | --- | --- | --- |
| Name | Project Manager |  |  |
| Name | Business Analyst |  |  |
| Name | Application Architect |  |  |
| Name | Lead Developer |  |  |
| Name | Test Data Manager |  |  |
| Name | Performance Test Manager |  |  |
| Name | Performance Test Environment Manager |  |  |

Record of Changes

< Provide information on how the development and distribution of the performance test report were carried out and tracked with dates. Use the table below to provide the version number, the date of the version, the author/owner of the version, and a brief description of the reason for creating the revised version.>

Table 2: Record of Changes

| Version  Number | Date | Author/Owner | Description of Change |
| --- | --- | --- | --- |
| Draft | 01/03/2019 | PerfMatrix | Draft version with available details |
| 0.1 | 15/03/2019 | PerfMatrix | Added NFR details |
| 0.2 | 30/03/2019 | PerfMatrix | Added Environment details |
| xx | xx/xx/xxxx | xxxxxx | xxxx xxxx xxxx xxx |
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# Executive Summary

<Please write here, a summary and the purpose of the performance testing>

## Overview: Project Background and Scope

<Please write here about the project, application, the purpose of the application, impacted users, benefits etc.>

## Overview: Performance Test Phase

<Please write here about the performance test purpose>

## GO - No GO Status

<A large number of errors identified during the stress test. As per analysis was done by the development team and agreed with the project, these errors have low impact. Jira ticket (ID: BSCR0021N) has been raised for the same. Apart from this, no performance issue has been detected in the application. Hence Performance Testing team is happy to provide GREEN sign-off with GO status>

<A separate bullet of justification may be added if required>

## Recommendation

<Provide the finding and recommendation in this section>

# Application Architecture

<Please write here the summary of the architecture, technology used, impacted components etc.>

## Overview: System Architecture

<Please write here the detailed description of the application/system>

## Architecture Diagram

<Add architectural diagram of the application in this section>

## Detailed information on each component

<Please write here about each component which is in the system and may impact due to the changes (not for a new application). Also, write how each component will interact with others, what would be the input and what would be the output? Etc.>

# Performance Test Requirements

## Requirements

<Please write here the justification to include the performance testing for this project. Attach the Performance Score Metrics sheet or MOM in which Performance Testing of specific or all the components was agreed.>

## Agreed NFR

<Write down the final NFR which were agreed during the performance test planning phase. If there is any change in the NFR then also add them with proper justification and agreement proof>

Table 3: Change Requests for NFR (CRs)

| Task ID | Description | Project Affected |
| --- | --- | --- |
| CRNFT01 | Correction in the peak time user load count. | XXXXXX |
| CRNFR02 | XXXXX | XXXXXX |
| CRNFT03 | XXXXX | XXXXXX |

<Attach the latest NFR sheet here>

## NFR and NFT Matrix

<This section contains the non-functional test cases (scripts) and applicable non-functional requirement>

Table 4: NFR-NFT Matrix

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **NFT1** | **NFT2** | **NFT3** | **NFT4** | **NFT5** |
| **NFR1** | × | √ | × | × | × |
| **NFR2** | × | × | √ | × | × |
| **NFR3** | √ | × | × | √ | × |
| **NFR4** | √ | × | × | × | × |
| **NFR5** | × | √ | √ | × | √ |

# Performance Test Planning

## Performance Test Approach

<Write a high-level approach for performance testing of the application under test. Or attach Performance Test Plan Document >

<In case any change request raise to change the scope of the testing which was not covered in the Final Performance Test Plan then provide the detail in below table>

Table 5: Change Requests (CRs)

| Task ID | Description | Project Affected |
| --- | --- | --- |
| CRNFT01 | De-scope product order cancellation scenario. | XXXXXX |
| CRNFR02 | XXXXX | XXXXXX |
| CRNFT03 | XXXXX | XXXXXX |

### Performance Testing and Monitoring Tool Details

Table 6: Description of Performance Testing Tool

| Tool Name | Description | Licensed / Open-Source? | No. of licenses |
| --- | --- | --- | --- |
| Micro Focus Performance Center | Version: 12.55  Required Protocol: Web HTTP/HTML  Support Forum Link:  Support ID: | Licensed | 10,000 |
| DynaTrace | Version 1.1  Support Forum Link:  Support ID: | Licensed | NA |
| xxxxxxx | xxxxxxxx | xxxxxxxx | xxxxxxx |

### Performance Test Script Steps

<In this section, the performance test scripts that were used in the test should be listed out. Also, give reference to Performance Test plan to get full details on the transaction flow of the script>

Table 7: Performance Test Script Details

| Script # | **Name of the script** |
| --- | --- |
| 1 | NFT Script Name: 01\_PerfMatrix\_ProductOrder |
| 2 | NFT Script Name: 02\_PerfMatrix\_ProductCancellation |
| 3 | xxxxxxxxx |

Table 8: Performance Test (Script 2 Steps)

Table 7: Performance Test Runtime Settings (Optional Information, provide only if available)

| Script # | Pacing between Iterations | Think Time between transactions |
| --- | --- | --- |
| Script 1 | 6 seconds (Fixed) | 10 seconds (Fixed) |
| Script 2 | 5-10 seconds (Random) | 5-10 seconds (Random) |
| Script 3 | No Pacing | 10 seconds (Fixed) |
| Script 4 | No Pacing | No Think Time (Only 1 transaction in the script) |
| Script 5 | 12 seconds (Fixed) | 10 seconds (Fixed) |
| Script 6 | 12 seconds (Fixed) | 10 seconds (Fixed) |

# Performance Test Result

## Performance Test Result Summary

<The table below provides an example of a short summary of each of the Performance Test execution result>

Table 9: Performance Test Result Summary

| Test Run | Date | Test Scenario Summary | Status |
| --- | --- | --- | --- |
| Smoke Test | Date, on which test was conducted | To validate the performance test scripts and monitors | Pass |
| Cycle 1 - Run 1 | xx/xx/xxxx | Load Test - 1 Hour test with peak load | Failed |
| Cycle 1 - Run 2 | xx/xx/xxxx | Repeat Load Test - 1 Hour test with peak load | Passed |
| Cycle 1 - Run 3 | xx/xx/xxxx | Stress Test - 1 Hour test with 150% of peak load | Failed |
| Cycle 1 - Run 4 | xx/xx/xxxx | Repeat Stress Test - 1 Hour test with 150% of peak load | Failed |
| Cycle 1 - Run 5 | xx/xx/xxxx | Soak Test - 8 Hour Test with average load | Passed |
| Cycle 1 - Run 6 | xx/xx/xxxx | Repeat Soak Test - 8 Hour Test with average load | Passed |
| Cycle 2 - Run 1 | xx/xx/xxxx | Load Test - 1 Hour test with peak load | Passed |
| Cycle 2 - Run 2 | xx/xx/xxxx | Repeat Load Test - 1 Hour test with peak load | Passed |
| Cycle 2 - Run 3 | xx/xx/xxxx | Stress Test - 1 Hour test with 150% of peak load | Passed |
| Cycle 2 - Run 4 | xx/xx/xxxx | Repeat Stress Test - 1 Hour test with 150% of peak load | Passed |
| Cycle 2 - Run 5 | xx/xx/xxxx | Soak Test - 8 Hour Test with average load | Passed |
| Cycle 2 - Run 6 | xx/xx/xxxx | Repeat Soak Test - 8 Hour Test with average load | Passed |

## Performance Test Result Description

### Smoke Test

The smoke test was designed to ensure that the performance test scripts should work properly in the Performance Test Environment. The smoke test was executed with 10 users load for 15 minutes and no issue was identified pre, during and post periods. Also, the Performance Monitors that were configured for metrics collection, were operating as expected.

### Load Test Result

Table 10: Load Test Result

|  | Test Details |
| --- | --- |
| Test ID | NFT01 (Cycle 1-Run 1, Cycle 1-Run 2, Cycle 2-Run 1 and Cycle 2 Run 1) |
| Purpose | Peak hour transaction processing was under examination to determine if the system could maintain response times under the highest anticipated load. This test was designed to collect performance metrics on transaction throughput, response times, and system resource utilization, in comparison to Performance requirements. |
| No. of Tests | 4 (2 tests per cycle) |
| Duration | Ramp-up:  Steady State:  Ramp-down: |
| Scripts | 1. XXXXXX 2. XXXXXX 3. XXXXXX |
| Scenario Name | Load Test Scenario |
| Covered NFR | NFR01, NFR04 and NFR05 |
| User Load / Volume | 500 Vusers (Threads) Load |
| Test Status | 1. Cycle 1-Run 1 – Failed 2. Cycle 1-Run 2 – Passed 3. Cycle 2-Run 1 – Passed 4. Cycle 2-Run 2 – Passed |
| Observation / Reason for Failure | 1. Cycle 1-Run 1    1. High response time observed during the test which breached the defined NFR of 5 second response time.    2. High CPU utilization observed after 20 minutes when the test started.    3. 62 errors were detected during the test       1. 500 / Internal Server Error (Count: 34)       2. 504 / Gateway Timeout (Count: 20)       3. 401 / Unauthorized (Count: 12) 2. Cycle 1-Run 2    1. The application is able to handle 500 user load    2. Response Time NFR met.    3. No major spike in the response time is observed    4. CPU utilization was an average 52% during the test.    5. No major spike in memory utilization.    6. 1 error was detected during the test.       1. 504 / Gateway Timeout for the login page 3. Cycle 2-Run 1    1. The application is able to handle 500 user load    2. Response Time NFR met.    3. No major spike in the response time is observed    4. CPU utilization was an average 54% during the test.    5. No major spike in memory utilization.    6. No error was detected during the test. 4. Cycle 2-Run 2    1. The application is able to handle 500 user load    2. Response Time NFR met.    3. No major spike in the response time is observed    4. CPU utilization was an average 51% during the test.    5. No major spike in memory utilization.    6. No error was detected during the test. |
| Overall RAG status | GREEN |
| Result Location | <Provide the path of result repository> |

### Stress Test Result

Table 11: Stress Test Result

|  | Test Details |
| --- | --- |
| Test ID | NFT02 (Cycle 1-Run 3, Cycle 1-Run 4, Cycle 2-Run 3 and Cycle 2 Run 4) |
| Purpose | Stressed the system to view if the workload increases then how the application and infrastructure behave or could be scale-up. This test was conducted to determine if response times can be maintained during the test with a high load. This test was designed to collect performance metrics on transaction throughput, response times, and system resource utilization, in comparison to Performance requirements. |
| No. of Tests | 4 (2 tests per cycle) |
| Duration | Ramp-up:  Steady State:  Ramp-down: |
| Scripts | 1. XXXXXX 2. XXXXXX 3. XXXXXX |
| Scenario Name | Stress Test Scenario |
| Covered NFR | NFR02, NFR04 and NFR05 |
| User Load / Volume | 750 Vusers (Threads) Load |
| Test Status | 1. Cycle 1-Run 3 – Failed 2. Cycle 1-Run 4 – Failed 3. Cycle 2-Run 3 – Passed 4. Cycle 2-Run 4 – Passed |
| Exit Criteria | 1. Cycle 1-Run 3    1. High response time observed during the test which breached the defined NFR of 5 second response time.    2. High CPU utilization observed after 12 minutes when the test started.    3. 114 errors were detected during the test       1. 500 / Internal Server Error (Count: 64)       2. 504 / Gateway Timeout (Count: 40)       3. 401 / Unauthorized (Count: 14) 2. Cycle 1-Run 4    1. High response time observed during the test which breached the defined NFR of 5 second response time.    2. High CPU utilization observed after 10 minutes when the test started.    3. 128 errors were detected during the test       1. 500 / Internal Server Error (Count: 65)       2. 504 / Gateway Timeout (Count: 45)       3. 401 / Unauthorized (Count: 18) 3. Cycle 2-Run 1    1. The application is able to handle 750 user load    2. Response Time NFR met.    3. No major spike in the response time is observed    4. CPU utilization was an average 64% during the test.    5. No major spike in memory utilization.    6. 20 errors were detected during the test       1. 504 / Gateway Timeout (Count: 20) 4. Cycle 2-Run 2    1. The application is able to handle 750 user load    2. Response Time NFR met.    3. No major spike in the response time is observed    4. CPU utilization was an average 68% during the test.    5. No major spike in memory utilization.    6. 24 errors were detected during the test       1. 500 / Internal Server Error (Count: 6)       2. 504 / Gateway Timeout (Count: 18) |
| Overall RAG Status | AMBER |
| Result Location | <Provide the path of result repository> |

### Soak Test

Table 12: Soak Test Scenarios Detail

|  | Test Details |
| --- | --- |
| Test ID | NFT03 (Cycle 1-Run 5, Cycle 1-Run 6, Cycle 2-Run 5 and Cycle 2 Run 6) |
| Purpose | This soak test will determine if the system resources are recycled for re-use while processing transactions over long periods. Proper recycling of memory, CPU, and other system utilization resources is healthy for performance. This test is designed to collect performance metrics on transaction throughput, response times, and system resource utilization, in comparison to Performance requirements with o memory leakage. |
| No. of Tests | 4 (2 tests per cycle) |
| Duration | Ramp-up:  Steady State:  Ramp-down: |
| Scripts | 1. XXXXXX 2. XXXXXX 3. XXXXXX |
| Scenario Name | Soak Test Scenario |
| Covered NFR | NFR02, NFR03 and NFR06 |
| User Load / Volume | 300 Vusers (Threads) Load |
| Test Status | 1. xxxxxx 2. xxxxxx 3. xxxxxx 4. xxxxxx |
| Observation / Reason for Failure | 1. xxxxx 2. xxxxx 3. xxxxx 4. xxxxx |
| Overall RAG Status | GREEN |
| Result Location | <Provide the path of result repository> |

## Performance Test Environment and Extrapolation Report

The Performance Test environment was XX% of the production environment. Hence user load has been scaled down to XX%. Post-execution, the test result was extrapolated with the same percentage.

<Attach test result extrapolation report here>

Table 13: Performance Test Environment Details

| Server Name | Environment Tier | Hardware Version | OS | Memory (GB) | CPU count | Total Disk Space |
| --- | --- | --- | --- | --- | --- | --- |
| xxx | Web Service | M620 | Linux | 32 GB | 8 cores | 512 GB |
| xxx | Web Service | M620 | Linux | 32 GB | 8 cores | 512 GB |
| xxx | Middleware | M620 | Linux | 32 GB | 8 cores | 512 GB |
| xxx | Middleware | M620 | Linux | 32 GB | 8 cores | 512 GB |
| xxx | Middleware | M820 | Linux | 32 GB | 16 cores | 1 TB |
| xxx | Database | M820 | Linux | 32 GB | 16 cores | 1 TB |
| xxx | xxx | xxx | xxx | xxx | xxx | xxx |
| xxx | xxx | xxx | xxx | xxx | xxx | xxx |

Table 14: Production Environment Details

| Server Name | Environment Tier | Hardware Version | OS | Memory (GB) | CPU count | Total Disk Space |
| --- | --- | --- | --- | --- | --- | --- |
| xxx | Web Service | M620 | Linux | 32 GB | 8 cores | 512 GB |
| xxx | Web Service | M620 | Linux | 32 GB | 8 cores | 512 GB |
| xxx | Middleware | M620 | Linux | 32 GB | 8 cores | 512 GB |
| xxx | Middleware | M620 | Linux | 32 GB | 8 cores | 512 GB |
| xxx | Middleware | M820 | Linux | 32 GB | 16 cores | 1 TB |
| xxx | Database | M820 | Linux | 32 GB | 16 cores | 1 TB |
| xxx | xxx | xxx | xxx | xxx | xxx | xxx |
| xxx | xxx | xxx | xxx | xxx | xxx | xxx |

## Assumptions, Constraints, Risks and Dependencies

### Assumptions

<Assumptions should be documented concerning the available release software, test environment, dependencies, tools, and test schedule associated with the performance test. Examples are shown below.>

Table 15: Assumptions

| No. | Assumption |
| --- | --- |
| 1 | Since the performance test environment is 50% scaled down of the production environment, so 50% scaled-down load (of production) was considered in the tests. |
| 2 | xxxxxxxxxxxxx |
| 3 | xxxxxxxxxxxxx |

### Constraints

<Constraints should be documented concerning the available release software, test environment, dependencies, tools, test schedule, and other items pertaining to the performance test. Examples are shown below.>

Table 16: Constraints

|  |  |  |
| --- | --- | --- |
| No. | Constraint | Impact |
| 1 | The Performance Test environment has 50% of the servers that Production has. | The scaling factor of the Performance Test to Production is 50%. All Production Load Models that were executed in the Performance Test environment was at 50% of the full Production load Model to represent a 100% Load. |
| 2 | The Performance Test environment had older data that Production had, which caused an error for some of the data scenarios. | The data in Production had not been purged since 2000; searches in Production intermingle with older data than Performance Test can. This lead the error reported during the test which was not considered in the result analysis. |
| 3 | xxxxx | xxxxxxx |
| 4 | xxxx | xxxx |

### Risks

<Risks should be documented concerning the test schedule, release software, dependencies, tools, test approach test environment and other items pertaining to the performance test. Examples are shown below.>

Table 17: Risks

| No. | Risk | Impact | Action/Mitigation | Assigned To |
| --- | --- | --- | --- | --- |
| 1 | A large number of errors were detected in the stress test which is marked as Amber (RAG Status) | HIGH | The dev team will continue the investigation and include the resolution in next release. | Development Team |
| 2 | xxxx | xxxx | xxxx | xxxx |
| 3 | xxxx | xxxx | xxxx | xxxx |

### Dependencies

<Dependencies should be documented concerning the latest build, test data, schedule, test environment and other items pertaining to the performance test. Examples are shown below.>

Table 18: Risks

| No. | Dependencies | Impact | Action/Mitigation | Assigned To |
| --- | --- | --- | --- | --- |
| 1 | Extrapolation test result has not been received from the IT team | HIGH | Awaiting for the extrapolation result. The performance test report will not be signed-off without extrapolation report. | IT Team |
| 2 | xxxx | xxxx | xxxx | xxxx |
| 3 | xxxx | xxxx | xxxx | xxxx |

# Point of Contact

### Test Organization

<Document the test organization and any other departments that will be supporting the Performance Test Phase.>

Table 19: Test Organization

| Name | Functional Role | Responsibilities |
| --- | --- | --- |
| Name | Project Manager | Facilitating and coordinating all schedules related to SDLC phases and infrastructure |
| Name | Performance Engineering Lead | Manages schedules and activities related to Performance Testing projects |
| Name | Performance Engineer | Prepares for performance test execution, executes performance tests, analyzes performance tests, and tracks problem reports |
| Name | Performance Engineer | Prepares for performance test execution, executes performance tests, analyzes performance tests, and tracks problem reports. |
| Name | Monitoring Support | Monitors performance tests using Performance monitors |
| Name | Application Support | Supports performance test execution as configuration or application issues are found |
| Name | Performance Test Environment Support | Supports and maintains the Performance Test environment |

1. Acronyms

<List out all the acronyms and associated literal translations used within the document. List the acronyms in alphabetical order using a tabular format as depicted below.

Table 20: Acronyms

| Acronym | Literal Translation |
| --- | --- |
| NFR | Non-functional Requirement |
| PT | Performance Testing |
|  |  |
|  |  |
|  |  |

1. Glossary

<Write down the clear and concise definitions for terms used in this document that may be unfamiliar to readers of the document. Terms are to be listed in alphabetical order.>

Table 21: Glossary

| Term | Definition |
| --- | --- |
| Pacing | The delay between two iterations |
| Think Time | The delay between two transactions |
|  |  |
|  |  |

1. Referenced Documents

<List out the documents which were referred during the preparation of Performance Test plan. Also, provide who and when the reference document was prepared along with version>

Table 22: Referenced Documents

| Document Name | Document Location and/or URL | Issuance Date |
| --- | --- | --- |
| AO (Architecture Overview)  Version: 1.2 | <https://xxxxxx.xxxxx.com/project_document/architecture/ao.doc> | 30/10/2018 |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |