

ECC Performance Testing

Scope and Approach

**Version 1.0**

**02 March 2021**

Reference and Source Documentation

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| # | Document Name | Shared By | Version |
| 1 | Bank Muscat ECC Upgrade - Performance Test Closure Report | Ravi Bargava Varadarajan | 1.0 |

Revision History

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| --- | --- | --- | --- |
| Author | Date | Version | Comments |
| Vimal Raj | 23-Feb-21 | V 0.1 | Baseline version |
| Vimal Raj | 02-Mar-21 | V 1.0 | Updated Aproach |

Approved By

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| --- | --- | --- | --- |
| Approvers | Date | Version | Role |
| Shine |  |  |  |
| Dhandapani Ponnusamy |  |  |  |
| Ravi Bargava Varadarajan |  |  |  |

# Background

Bank Muscat has intended to upgrade Oracle Database to 12C for the existing Electronic Cheque Clearing (ECC) system. In this process, Bank Muscat has planned to benchmark the ECC application for both inward and outward transactions. In line to the requirements & expectations of BM IT Management, Maveric has extended the support to benchmark the ECC Application by bringing in Performance Testing and Performance Engineering services. Please refer the below section for the list of Categories and the respective performance test details.

# Performance Testing

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| Categories | Performance Test Details |
| Application in Scope | * Electronic Cheque Clearing |
| Modules under Test | * Inward and Outward Modules |
| Transaction in Scope | The following table will point out the **6 Transactions** which are identified for the Performance Testing.   * Outward - Scan (Batch Upload) * Outward - Quality Assurance * Outward - CBO Upload * Inward - Technical Clearing (Signature Verification) * Inward - Clearing Approval * Inward - CBO Response (Transaction Posting) |
| Testing Types | * Load/ Volume Test, Endurance Test and Stress Test |
| Test Objective | * To provide an end to end performance testing service for PS-ECC applications instances |
| * To verify the load handling capacity of the ECC application in scope for derived user concurrency of 500 concurent users |
| * To monitor the relevant server metrics during execution & ensure the resources utilization are under threshold limits |
| Test Design Approach | * User actions of the workflows under scope will be performed in browser and the network traffic for the same will be captured as scripts using IBM Rational Performance tester tool |
| Test Execution Approach | * The agreed number of user concurrency and volume will be generated with recorded scripts in the network layer and the server response time and other key performance indicators and server resource utilization metrics will be captured and reported for performance bottlenecks |
| User Concurrency | * Total number of Users – 500 Note: Concurent user details are shared based on the data provided in 2016, requested Shine to provide the latest user concurrency count from production. |
| Systems Involved | * ECC * ESB, T24 |
| Test Environment | * Test Design and Test Execution will be performed in UAT Environment |
| Execution Rounds | * **Round 1 – 50 % Load Test- 250 User**    + Cycle 1 - (1 day), Defect fixing (1 day)   + Cycle 2 - Retest (1 day) * **Round 2 – 100 % Load test - 500 Users**   + Cycle 1 - (1 day), Defect fixing (1 day)   + Cycle 2 - Retest (1 day) * **Round 3 – Endurance Test - - 500 Users**   + Cycle 1 - (1 day), Defect fixing (1 day) * **Round 4 – Stress Test - 500 Users**   + Cycle 1 - (1 day), Defect fixing (1 day)   **Note:**   * There will be 2 cycles for each round of testing to ensure the quality of fixes & consistency in the test results * Maveric will execute 2 cycles of testing for both rounds of Load Test and 1 cycle for both Stress and Endurance Test * Fixes for all the showstopper/critical issues should be fixed within the expected Turnaround Time (TAT) of maximum 1 day. Any delay in the TAT or increase in number of cycles will have an impact on the plan, schedule and timeline * The duration of the sanity test would be ranging from 15 minutes to about half an hour. The execution time for rest of the rounds will be one hour except endurance test for 6 hours * Key performance metrics will be captured using performance tool and the same will be collated at the end of each round for analysis. In addition to this, server related metrics like CPU, Memory, and Disk I/O etc. of the servers under test will be gathered post execution with BM IT support and the same will be analysed and published as part of execution summary report * Application log and Server logs will be obtained from the respective teams (IT, Infra, DBA, Network Team) if required for further analysing on the performance metrics |
| SLA | |  |  |  | | --- | --- | --- | | Response Time SLA (Provided by Bank Muscat) | | | | Functionality | **No. of. Steps  (Page Navigations)** | **SLA for each step (in seconds)** | | Outward - Scan (Batch Upload) | One Page | 2 | | Outward - Quality Assurance | Two Pages | 5 | | Outward - CBO Upload | One Page | 2 | | Inward - Technical Clearing (Signature Verification) | Two Pages | 5 | | Inward - Clearing Approval | Two Pages | 3 | | Inward - CBO Response (Transaction Posting) | One page | 2 | |
| Monitoring Tool/ utility | * Uptime Resource utilization tool – To be configured by BM IT in UAT Environment |
| Schedule | **Note:** The above shared schedule is based on the considerartion that defect fix TAT is 1 day |
| Critical Assumptions | * The basic performance parameters across the server stack for the expected load would be configured by ProgressSoft team prior to the Performance test execution * Test design activity will be started once all the business functionalities are added in the application and fields in the applications are frozen * BM IT team & ProgressSoft Team to support extracting server logs and server utilization metrics in order to analyze the performance metrics * Uptime resource monitoring would be made available in the environment finalized for Performance testing * Batch upload of required number of cheques will be done by application team * Benchmark and performance test results are subjected to the environment setup * Defect fix turnaround time is considered to be maximum 1 day * Login credentials for the user accounts will be provided by application team * SPOC from application team would be made available for fixing performance issues |
| Deliverables | |  |  | | --- | --- | | Phases | Performance Deliverables | | Planning | * Test Approach document | | Design | * Test Scripts | | Execution | * Execution Summary Report (for each cycle of testing) | | Closure Report | * Final Test Report | |
| Out of Scope | * Other applications & transactions apart from the agreed scope will not be performance tested * Other Non-Functional testing including Database testing, Disaster Recovery, Fail-over / Fail Back, High Availability, Usability testing, Security Testing, Network emulation, Data migration testing & Data Integrity Testing of migrated data along with base data volume creation in the database will be out of scope * Any form of functional testing including field level validations, systems testing & integration testing are not in scope * Performance testing in any other environment other than the finalized performance test environment will not be tested * Performance execution will not cover any testing types other than agreed scope (Load /Volume & Stress and Endurance). Also, any metrics related to other applications integrated with ECC will not be measured as part of ECC Performance Testing * Test Data population will be out of scope |
| Architecture |  |