**Performance QA team Overview**

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| **Topic** | **Status** | **Date** |
| **Overview of Performance testing process followed in GEP** \* Please refer attach document for overview. | Done | 12/21/2020 |
| **Neoload tool overview and installation/configuration of Neoload tool:** \*Neoload installation & trial license information \*Agent / LG details \*Project /Runtime configurations \*Create a new Project \*Neoload basic terms like Userpath, Transaction, Thinktime, Pacing, etc \*Creating your First Neoload Script with basic data | Done | 12/22/2020 |
| **Script Recording, Parameterization, Correlation and validation -  Session 1** \*Quick recap from previous session \*Parameterization / Correlation \*Naming conventions for Userpath/Variables \*Script Validation \*Assertions \*Rendezvous point | Yet to Start | 12/24/2020 |
| **Script Recording, Parameterization, Correlation and validation  - Session 2** \*Quick recap from previous session \*Parameterization / Correlation \*Naming conventions for Userpath/Variables \*Script Validation \*Assertions \*Rendezvous point | Yet to Start | 12/28/2020 |
| **Performance Test scenario creation, Script Execution and Monitoring during load test** \*Population & Scenario types and creation \*Process followed for DB Upscale/Downscale \*Load test execution and Runtime monitoring (Graphs, Errors, Users addition / removal, follow user) \*DB monitoring using powershell | Yet to Start | 12/29/2020 |
| **Performance result analysis/result preparation:** \*Generate Neoload report \*Reading Neoload report   \*Database log analysis \*Result preparation using Macro | Yet to Start | 12/30/2020 |
| **Capturing performance of User experience:** \*Capturing HWL files using HTTP Watch \*New Relic Analysis | Yet to Start | 1/5/2021 |
| **Interface/API/Elastic Search performance testing:** \*Interface / Rest API testing using Neoload \*Elastic Search Testing & Monitoring using Kibana | Yet to Start | 1/7/2021 |

Performance testing process followed in GEP and different activities team performs in different stages.

* **Requirement gathering and Planning Phase**
  + **Working with client facing team in understanding NFR** (Non-Functional requirements) for performance testing for Go Live Customer requirements
  + **Working with PMG and document team in finalizing NFR** for any new feature enhancement based on client requirement
  + **Workflow OR performance scenario finalization for different NFR** requirement.
  + Planning of load testing for these NFR requirement
* Prioritization of NFR requirement to P1, P2
* Defining dates for each activity planned for performance check
* **Performance Script Creation and Execution Phase for Go live clients and new feature enhancement.**

**Performance Approach for Go Live clients:**

* + QC is the environment we mostly use for performance test for NFR requirement for new clients getting onboarded in GEP.
  + Sanity execution of all the E2E workflow.
  + Capturing Single user experience for these NFR requirements
  + Once above steps are passed, then performance scripting will be initiated for load test.
    - Data setup preparation for Load testing.
    - An email notification is sent to respective document teams not to initiate any release during this load test period.
    - Database is upscaled to 4 vCore before initiating any load test. If simultaneous user load is larger than we upscale to 8 vCore OR 10 vCore
    - Iteration 1 of load testing is planned and executed.
    - Iteration 2 is planned and executed if results are not good for Iteration 1
    - Result analysis and publishing to right audience with Defect ID for OPEN issues.
    - Re-execution of performance test once OPEN Defects are fixed.

**Performance load test for integration check and Performance test on single document where load is coming from multiple domain:**

* + Based on business needs we cover performance test on multiple documents at same time to check different integration check points and E2E flow performance check.
  + For any major architecture changes we plan the load test on multiple domains to identify real production issues.

**Performance Approach for New Feature enhancements:**

* + Feature Demo is planned by Development/QC team to understand the new feature
  + NFR requirements are gathered based on feedback from PMG matching client business use cases.
  + Capturing Single user experience for these NFR requirements
  + Once single user experience is good and no OPEN functional issues exist, then performance scripting will be initiated for load test.
    - Data setup preparation for Load testing.
    - Iteration 1 of load testing is planned, and an email notification is sent to respective document teams not to initiate any release during this load test period.
    - Database is upscaled to 4 vCore before initiating any load test. If simultaneous user load is larger than we upscale to 8 vCore OR 10 vCore
    - Iteration 2 is planned and executed if results are not good for Iteration 1
    - Result analysis and publishing to right audience with Defect ID for OPEN issues
    - Re-execution of performance test once OPEN Defects are fixed.
* **Sprint Performance Regression Coverage**
  + Performance Regression on QC environment for all major documents.
    - C2P documents – Contract, Catalog, Requisition, Invoice/IR, Service confirmation, Receipt on Chevron/Performance test Domains] – Santosh K
    - Platform/Search – Global Search, Manage Card, Landing page, Advance Filters, Manage Tasks on Kellogg domain– Dnyaneshwar
    - S2S documents – Sourcing, Supplier, Projects, SIP, Incident Report, Auction, CWB on Exxon and Petronas domain– Kshitij
    - Sharepoint link for sprint result : [Sprint Performance Results](https://gep1.sharepoint.com/sites/DeliveryManagement/Shared%20Documents/Forms/AllItems.aspx?viewid=5eeec962-15bd-4f56-8915-106660fc4aec&id=%2Fsites%2FDeliveryManagement%2FShared%20Documents%2FSprint%20Performance%20Results)
  + Creation of New script OR Maintenance of performance scripts for new enhancement changes on Steady State Client domains for performance regression coverage.
  + Sanity execution of all the E2E workflow.
  + Capturing Single user experience for these NFR requirements
  + Once above 2 steps are passed, then performance load test is initiated.
    - Data setup preparation for Load testing.
    - Iteration 1 of load testing is planned, and an email notification is sent to respective document teams not to initiate any release during this load test period.
    - Database is upscaled to 4 vCore before initiating any load test.
    - Iteration 2 is planned if results are not good for Iteration 1
    - Result analysis and publishing to right audience with Defect ID for OPEN issues.
    - Re-execution of performance test once OPEN Defects are fixed.
    - We normally try to publish performance test results for every sprint by EOD Tuesday Week 2.
* **Performance Execution Phase (On Production)** 
  + Post Production release, we plan to execute performance test on major documents to evaluate performance parameters with each sprint on weekend only.

This will give confidence that there is no performance degradation with new sprint releases.

* + Performance test execution for any major feature enhancement on specific document OR based on business use case need.
  + Hot Fix verification if any on Prod Stg and Production where performance changes need validation.
  + We plan the load test on different test domains created for load test.
* Performance Test domain – Replica of Chevron domain
* Performance Test Sales domain – Replica of Sales domain
* CST20 domain

**Adhoc Activities:**

* Any document upgrades like NG5 upgrade OR other major architecture changes
* Production issues replication and verification.
* DevOps, CPAO and Database teams infra upgrades and architecture team changes.
* Sales team request for performance improvements.
* Respective document team’s production issue fixes OR adhoc client requests.
* Database downmerged from UAT to QC environment.
* Search team enhancements
* Browser performance Verification (Mac Safari, Mac Chrome, Chromium Edge)
* UAT verifications/readiness (Petronas, Kiewit, Roche etc.) based on client feedback/client reported performance issues.