TCS BaNCS- Performance Test Plan

Banque Saudi Fransi - BSF

Reference and Source Documentation

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1	TCS BaNCS NFR Solution	1.1	22-09-2020

Revision History

Author	Date	Version	Comments
Vimal Raj	01-10-2020	0.1	Draft Version
Ashlin Jenefer	04-10-2020	0.2	Updated SLA
Ashlin Jenefer	06-10-2020	1.0	Updated WLS
Vimal Raj	08-10-2020	1.1	Updated systems in scope

Reviewed By

Reviewers	Date	Version	Designation
Sankar Ganesh	08-10-2020	1.1	NFT Test Manager
Chetan Anand	08-10-2020	1.1	Delivery Manager

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Approvers	Date	Version	Designation

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1. Introduction

1.1. Project Overview

Banque Saudi Fransi (hereafter referred as BSF) is transforming their core banking application from their legacy system to BaNCS system and in the process, BSF intends to carry out performance testing to benchmark their newly implemented core banking (BaNCS) system as a standalone application. Understanding the testing requirement, Maveric proposes the below solution, which addresses to all the performance testing needs of BSF.

1.2. Purpose of the Document

The purpose of the document is to enable the project team and all stakeholders understand the scope of performance testing, approach, entry and exit criteria, resources and schedule of the testing activities, the testing tasks, the personnel responsible for each task, and the risks associated with this planned engagement.

The intended audience for this document is BSF Business, BSF IT and Maveric delivery management. BSF IT will review the Test plan document and signoff. This document represents the most recent information regarding the testing activities and will be updated as and when changes are identified. Maveric will incorporate the changes requested in consultation with the review team of the bank.

2. Scope of Work

Below is the scope of work for performance testing.

Scope Finalization & Planning

- Gather user & volume statistics from production to identify critical application and transactions
- Assess non-functional requirements, performance test infrastructure and technical architecture
- Application walkthrough and finalize transactions for performance scope
- Derive workload mix for finalized transactions scope with gather statistics
- Identify test data requirements for design and execution
- Identify the monitoring points and obtain access to monitoring tools if any
- Finalize test approach and design test scenarios
- Prepare and publish performance test plan for review and sign off

Script Development

- Develop and enhance test scripts for all the agreed transactions flow
- Ensure SIT environment readiness for execution - Application Stability, Environment stability, Performance testing tool, Stable test scripts, Test data & Monitoring setup, etc.
- Sanity test for the developed scripts in the SIT environment

Execution & Closure

- Create performance scenarios for the agreed non-functional testing types
- Benchmarking application response time and load handling capability by executing agreed performance scenarios
- Real time monitoring of application performance and server resource utilization
- Analyse test results & publish a detailed performance summary report at end of each testing round
- Provide key observations based on performance test results to identify performance bottlenecks
- Defect logging and tracking till closure in case of critical or showstopper issues
- Consolidating test results and present final closure report

Project Management

- Periodic health check and monitoring of project progression & team
- Establish reporting standards (DSR.)
- Escalate showstopper issues/scope revision in between project that would affect timeline/ risks if any, on the overall engagement

2.1. Performance Test Objective

- Benchmark the identified and agreed key BaNCS application for performance in terms of agreed KPI's on the SIT environment
- To verify the load handling capacity of the BaNCS applications in scope for derived user concurrency of 165 users and TPS of 15
- To measure the end to end response time of all the GUI transactions and web services in scope and benchmark in SIT environment
- To measure the stability of the BaNCS applications in scope under increased load and volume without the surrounding systems / interfaces connected to it
- Monitor critical batch jobs (EOD) performance & measure overall processing time

- To monitor the relevant server metrics during execution & ensure the resources utilization are under threshold limits

2.2. Performance Test Scope

The following table will point out the 10 critical web services and 4 end to end transactions which are identified for BSF Performance Testing

Systems in Scope	Services / Transaction
Web service transactions – BaNCS	QueryLoanList
	QueryRepaymentSchedule
	CreateLoanStimulation
	CreateRetailLoan
	QueryLoanDetails
	CreatePartialRepaySimulation
	PostPartialRepayment
	QueryFuturePoint
	QueryLoanExtraDetails
	QueryQuaterlyStatement
End- end transactions - BaNCS	View customer details
	View loan details
	Writing off loans
	Loan cancellation

Note:

- If there are any deviations from the identified scope and increase in number of transactions that leads to increase in effort, then we would revise the effort and timelines. The same shall be discussed with BFS team for approval.

2.3. Out of Scope

- Maveric will not test other applications & transactions apart from the agreed scope in this phase
- Performance testing will not be conducted for any integration services will be conducted using stumps and harnesses
- Other Non-Functional testing including Database testing, Disaster Recovery, Fail-over / Fail Back, High Availability, Usability testing, Security Testing, Network emulation, Compatibility Testing

across different browsers / OS, Data migration testing & Data Integrity Testing of migrated data along with base data volume creation in the database

- Any form of functional testing including field level validations, systems testing, integration testing and user acceptance testing are not in scope
- Performance testing in any other environment other than the finalized SIT test environment will not be tested
- Performance execution will not cover any testing types other than agreed scope (Load & Volume, Stress and Endurance)
- Batch processing / offline processing initiation along with environment setup and configuration are not in scope some key batch processing must be benched marked
- Bandwidth simulation will not be covered as part of performance testing
- Browser UI rendering time will not be measured as part of performance testing
- Client-side encryption, CAPTCHA, Email / SMS alerts, OTP and any other security level challenges will not be simulated as part of performance testing
- Performance tuning would be out of scope

2.4. Work Load Mix

Workload mix has been derived based on the statistics provided by BSF IT for finalized transactions in scope and agreed performance scenarios:

End to End Transactions:

Transactions	Total Volume/peak hour	Total Users	Weightage	SLA	Sanity Test		Load test				Stress Test		Endurance Test	
					15%		50%		100%		100% 2x Volume		70% 4 Hours	
					No. of Users	Volume / hr	No. of Users	Volume / hr	No. of Users	Volume / hr	No. of Users	Volume / hr	No. of Users	Volume / hr
View customer details	3111	165	10%	3 s	3	47	9	156	17	311	17	622	12	218
View loan details			50%	3 s	13	234	42	778	83	1556	83	3111	58	1089
Writing off loans			20%	5 s	5	94	17	312	33	622	33	1244	24	436
Loan cancellation			20%	5 s	5	94	17	312	33	622	33	1244	24	436
			100%		26	469	85	1558	165	3111	165	6222	118	2178

Web services Transactions:

Transactions	Total Volume	Total TPS	Weightage	SLA	Sanity test		Load test				Stress Test		Endurance Test	
					15%		50%		100%		100% 2x TPS, Volume		70% 4 Hours	
					TPS	Volume / hr	TPS	Volume / hr	TPS	Volume / hr	TPS	Volume / hr	TPS	Volume / hr
QueryLoanList	54000	15	20%	5 s	1	1620	2	5400	3	10800	6	21600	3	7560
QueryRepaymentSchedule			20%	5 s	1	1620	2	5400	2	10800	6	21600	3	7560
CreateLoanStimulation			5%	5 s	1	405	1	1350	1	2700	2	5400	1	1890
CreateRetailLoan			3%	7 s	1	243	1	810	1	1620	2	3240	1	1134
QueryLoanDetails			15%	5 s	1	1215	2	4050	2	8100	5	16200	2	5670
CreatePartialRepaySimulation			5%	5 s	1	405	1	1350	1	2700	2	5400	1	1890
PostPartialRepayment			2%	7 s	1	162	1	540	1	1080	2	2160	1	756
QueryFuturePoint			10%	5 s	1	810	1	2700	1	5400	3	10800	2	3780
QueryLoanExtraDetails			15%	7 s	1	1215	2	4050	2	8100	5	16200	2	5670
QueryQuaterlyStatement			5%	7 s	1	405	1	1350	1	2700	2	5400	1	1890
Total			100%		10	8100	14	27000	15	54000	33	108000	17	37800

2.5. Service Level Agreement

Response time SLA for all the web services and GUI End to End transactions were identified as below and agreed with BSF IT;

S.No	#	Transaction Name	SLA	TPS
1.	Web service transactions	QueryLoanList	5000 milliseconds	**50**
2.		QueryRepaymentSchedule	5000 milliseconds	
3.		CreateLoanStimulation	5000 milliseconds	
4.		CreateRetailLoan	7000 milliseconds	
5.		QueryLoanDetails	5000 milliseconds	
6.		CreatePartialRepaySimulation	5000 milliseconds	
7.		PostPartialRepayment	7000 milliseconds	
8.		QueryFuturePoint	5000 milliseconds	
9.		QueryLoanExtraDetails	7000 milliseconds	
10.		QueryQuaterlyStatement	7000 milliseconds	
11.	End to End Transactions	View customer details	3 seconds	
12.		View loan details	3 seconds	
13.		Writing off loans	5 seconds	
14.		Loan cancellation	5 seconds	
15.	Hardware Resource Utilization (CPU)		< 90 % of utilization	
16.	Hardware Resource Utilization (Memory)		< 90 % of utilization	

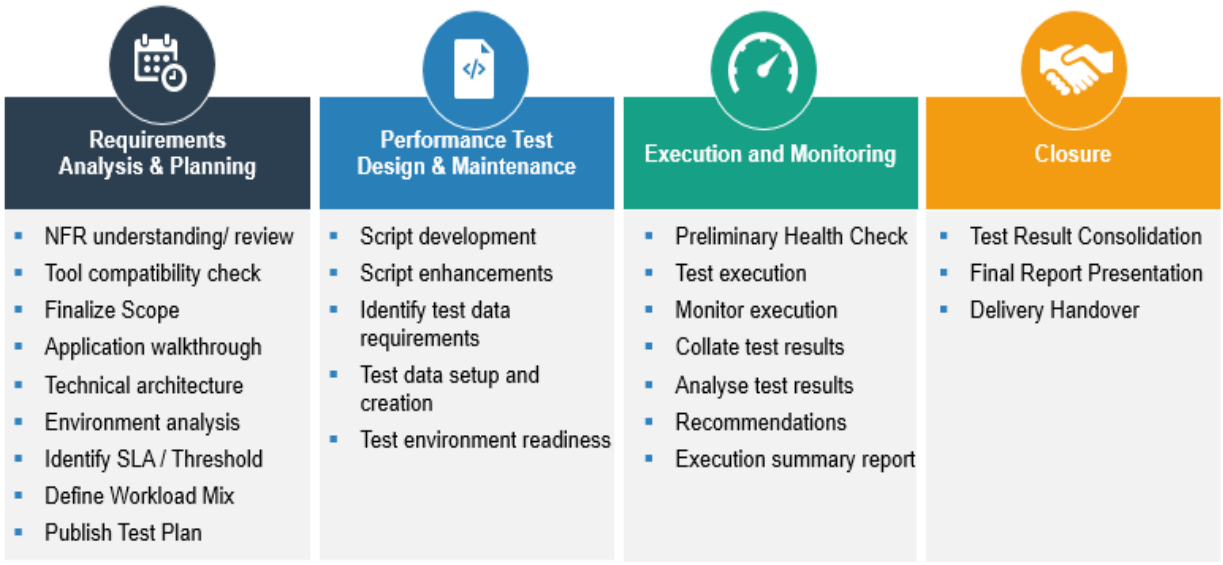
2.6. Key Considerations and Assumptions

Area	Assumptions
Infrastructure	▶ BSF IT team will facilitate in providing required number of machines with user access rights and application access (BaNCS) in prior to planning phase for application understanding and walkthrough ▶ Fulfilling the IT requests (Firewall / ports / tool installation etc.) before design phase in order to commence performance scripting on time ▶ BSF Datacentre team will initiate batch job execution and providing applications logs and result metrics post execution for reporting ▶ BSF IT team should setup necessary logs and utilization reports at server level or using the monitoring tool for performance measurements ▶ BSF IT team should configure the environment and server parameters for optimal performance & also support in fixing the performance issues between execution rounds
Environment	▶ Dedicated SIT environment that has been provided for SIT must be a stable test environment ▶ SIT environment should not be shared with other parties during execution ▶ SIT environment should be made available before the end of design phase ▶ SIT Environment should be loaded with PROD data volume for closer results ▶ Benchmark and performance test results are subjected to the environment setup ▶ Any changes to the setup or in the environment between execution cycles might vary the results
Application	▶ The indicative effort is calculated based on the applications list, transactions count and execution scope. Any major inclusions to scope after the planning has to be formally communicated to Maveric, post which, renewed effort would be calculated and intimated to BSF ▶ The indicative effort is calculated based on the applications list, transactions count and execution scope. Any major inclusions to scope after the planning has to be formally communicated to Maveric, post which, renewed effort would be calculated and intimated to BSF ▶ Identified transactions for performance scope should be stable with no critical / high priority defects ▶ Client-side Encryption, OTP, CAPTCHA and other security level challenges would be either disabled or made static before scripting

Area	Assumptions
	▶ Performance execution stages and scenarios are derived based on the discussion with BSF team. No additional scenarios or performance testing types would be covered as part of execution scope ▶ Each benchmarking round will have one cycle and no additional rounds would be covered as part of scope ▶ Detailed test summary report will be published only for benchmark rounds and for any ad-hoc runs, a high-level summary will be shared ▶ Technical architecture and NFR document to be shared ▶ BaNCS Application / Environment down time should be negligible throughout the course of engagement. ▶ Response time SLA's and resource utilization limit will be agreed with BSF IT & respective teams and the test will be conducted against the same.
Test Data	▶ Test data for design activity to be provided by BSF IT as per the pre-requisites for all the services in scope. ▶ Number of test data required for design and execution would be shared with BSF IT for test data creation. ▶ Application team will support in providing required test data for execution with necessary pre-requisites ▶ Necessary database to be loaded with base data volume for performance testing. ▶ The proposed schedule and its timelines & effort will have an impact if no proper test data is available for Performance Testing
Fix Turn Around Time	▶ Turnaround time for defect fixing should not exceed more than 1 day. ▶ Root cause analysis will be done with the support of BSF IT/ DBA/ ESB & BaNCS team.
Tool	▶ RPT should be available in the identified PT machines before test design phase.

3. Performance Test Approach

The major tasks focused on each stages of performance testing are elaborated in the below approach diagram



As part of Requirement Analysis & Planning stage, following activities are performed.

- Identify pre-requisites for each phase of performance testing and share with BSF IT for support
- Scope for Performance Testing will be finalized with the help of BSF IT team
- Understand the functional workflow and test data for the finalized business transactions with the help of BSF IT / App team
- The required test data volume for test design and planned rounds of execution along with pre-requisites will be shared to BSF IT
- Workload Mix will be derived based on the provided transaction volume & user load statics from production for the planned rounds of execution.
- An environment study would be carried out to understand the production and the performance test environment in terms of hardware details and server configuration
- Identify the required server metrics for result analysis and share with BSF IT / App team for monitoring
- Test plan will be prepared highlighting scope, approach, schedule, along with dependencies, risks, entry and exit criteria and the same will be published for review and signoff to BSF IT
- Any changes or suggestions to the rolled-out plan can be discussed with performance team and relevant changes will be incorporated before commencing the design

Detailed approach for Test Design & Execution is illustrated in the following sections (Refer section 3.1 Performance Test Design Methodology) & (Refer section 3.2. Performance Test Execution).

3.1 Performance Test Design Methodology

Performance test design for the identified transactions will be carried out in the below ways.

- The end to end functional workflow for the finalized transactions scope will be identified and the same would be converted into test scripts using performance testing tool in the performance test environment once all the entry criteria's (Refer section 8. Entry & Exit criteria) as mentioned in the test plan for design activity is met
- The plain test script will be further enhanced to simulate user actions for multiple users to achieve derived transaction volume which includes varying the user input, keeping check points to validate the desired output from the responses and configuring run-time settings to emulate real time behaviour
- Scripting and execution will be done on the same environment identified for performance testing

3.2 Performance Test Execution

3.2.1 Performance Test Scenarios

Detailed planned rounds of execution for performance testing is illustrated below. The execution rounds and scenarios are aligned with the scope of benchmarking BaNCS application performance in SIT environment

Test Scenario	User Load	Test Rounds
Sanity Test	~~10% Load~~ 15% Load	Round 1
Load Test	~~25% Overall Load & Volume~~	~~Round 2~~
	50% Overall Load & Volume	Round 3
	~~75% Overall Load & Volume~~	~~Round 4~~
	100% Overall Load & Volume	Round 5
Stress Test (2X load)	100% Overall Load & 2x Load	Round 6
Endurance Test (4 hours)	70% Overall Load	Round 7

Note:

- The above planned tests will be conducted based on the timeline agreed with BSF IT. If we foresee any delay in timelines due to data dependency, environment unavailability, or delay in providing defect tunings, the necessary changes / deviations / reduction in the agreed rounds of testing from details as mentioned above would be discussed with BSF IT
- In case of any showstopper/critical issues identified in any of the rounds, that particular round would be re-run post fixes before moving to next round of execution

- Maveric will execute more than 1 cycle of testing if that particular round requires additional cycles based on the test results. However, this is applicable as long as the cycles of testing fall under proposed effort & schedule
- 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 1 hour except endurance test for 4 hours
- Key performance metrics will be captured using performance tool and the same will be collated at the end of each benchmark 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 BSF 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 vendors (IT, Infra, DBA, Network Team) if required for further analysing on the performance metrics

4. Batch Job Performance

Performance testing of Batch jobs would differ from the one performed for Online Application, as the underline process and expectations are different for the batch process. Unlike web-based application, Batch Process concentrates more on the parameters like Throughput achieved, total elapse time for complete batch execution and optimum use of available resources for the batch execution.

- BSF IT team will own the job scheduling and will be responsible for running and monitoring these End to End Batch Job activities
- BSF IT team will be responsible for providing information to the Performance testing team on the job execution status, overall timings and success / fail ratio after each EOD run executed on the days of planned test execution for benchmarking
- Performance team will analyse the information gathered from BSF IT team after each batch job execution from a performance perspective
- If there are any deviations on the batch jobs processing time, then those jobs will be monitored for further analysis. These bottlenecks will be reported as defects as per the defect management process

5. Performance Testing Tool

A performance test creation, execution and analysis tool, Rational Performance Tester 8.7 helps to validate the reliability of the BaNCS application. The software offers a simple-to-use test recorder, automated data

manipulation, advanced scheduling, real-time reporting and a highly scalable execution engine to ensure that applications are prepared to handle large user loads. The tool as well as required number of user licenses would be derived during the Discovery & Planning phase and would be procured by Maveric at the cost of BSF.

6. Work Breakdown Structure

The below is the detailed performance testing schedule proposed which is tentative and subjected to change based on the change in scope:

S.No.	Activity	Start Date	End Date	Revised Start Date	Revised End Date	Responsibility	Dependent On
1	**Performance Testing**	**13-Sep-20**	**09-Nov-20**	**17-Sep-20**	**09-Nov-20**	**-**	**-**
2	**Performance Testing Discovery & Planning**	**13-Sep-20**	**17-Sep-20**	**17-Sep-20**	**30-Sep-20**	**BSF IT Team & PT Team**	**-**
3	Identifying and finalize transactions and services in scope			17-Sep-20	27-Sep-20	BSF IT Team & PT Team	-
4	Identifying performance test environment(SIT)			17-Sep-20	20-Sep-20	IT/Infra/App Team	-
5	Gather technical details/architecture of identified performance test environment			17-Sep-20	20-Sep-20	Infra & PT Team	4
6	Evaluate SIT environment configuration against production environment			20-Sep-20	20-Sep-20	PT Team	7
7	Understanding performance related requirements & collecting benchmark / SLA			21-Sep-20	23-Sep-20	BSF IT Team & PT Team	3
8	Gather endpoint details and sample request and response for the finalized services			20-Sep-20	24-Sep-20	BSF IT Team & PT Team	3
9	Derive work load model for finalized transactions in scope			27-Sep-20	28-Sep-20	BSF IT Team & PT Team	3
10	Application walkthrough			22-Sep-20	22-Sep-20	PT Team	3
11	Client side encryption (e.g. password) should be either disabled / made static by the Application team.			22-Sep-20	27-Sep-20	BSF IT Team & App Team	
12	Identifying test data requirements for design & planned rounds of execution			27-Sep-20	28-Sep-20	PT Team	10
13	Test Plan preparation & publishing for review & signoff			29-Sep-20	30-Sep-20	BSF IT Team & PT Team	3 to 12
14	**Pre-requisite Readiness**	**15-Sep-20**	**17-Sep-20**	**24-Sep-20**	**28-Sep-20**	**-**	**-**
15	Work station allocation			24-Sep-20	27-Sep-20	BSF IT Team & PT Team	-
16	Domain ID creation			24-Sep-20	27-Sep-20	BSF IT Team & PT Team	-
17	VPN Access for offshore connectivity			24-Sep-20	27-Sep-20	BSF IT Team & PT Team	-
18	PT Tools installation			27-Sep-20	28-Sep-20	BSF IT Team & PT Team	15 to 17
19	Access to AUT in test environment			27-Sep-20	28-Sep-20	App Team	15 to 17
20	**Performance Testing Scripting**	**20-Sep-20**	**03-Oct-20**	**01-Oct-20**	**14-Oct-20**	**-**	**-**
21	Prepare click stream document			01-Oct-20	01-Oct-20	PT Team	10
22	Develop and enhancement scripts for finalized transaction and services in scope			02-Oct-20	12-Oct-20	PT Team	25
23	Adhoc executions for completed scripts(Baseline)			13-Oct-20	14-Oct-20	PT Team	25
24	**Environment Readiness**	**01-Oct-20**	**03-Oct-20**	**08-Oct-20**	**12-Oct-20**	**-**	**-**
25	Prepare of test environment (SIT)			08-Oct-20	08-Oct-20	IT/Infra/App Team	5
26	Test data preparation			08-Oct-20	12-Oct-20	App & PT Team	12
27	**Performance Testing Execution**	**04-Oct-20**	**04-Nov-20**	**15-Oct-20**	**08-Nov-20**	**-**	**-**
28	Sanity Test - 15% Load & Volume Test			15-Oct-20	19-Oct-20	PT/Infra/IT/ App Team	20 & 26
29	TAT - 1 day					App Team	
30	Round 2 - 50% Load & Volume Test			20-Oct-20	22-Oct-20	PT/Infra/IT/ App Team	20 & 26
31	TAT - 1 day					App Team	
32	Round 3 - 100% Load & Volume Test			25-Nov-20	27-Oct-20	PT/Infra/IT/ App Team	20 & 26
33	TAT - 1 day					App Team	
34	Round 4 - Endurance Test(70% Load for 4 hrs)			28-Oct-20	01-Nov-20	PT/Infra/IT/ App Team	20 & 26
35	TAT - 1 day					App Team	
36	Round 5 - Stress Test			02-Nov-20	04-Nov-20	PT/Infra/IT/ App Team	20 & 26
37	TAT - 1 day					App Team	
38	**Performance Testing Closure**	**05-Nov-20**	**09-Nov-20**	**05-Nov-20**	**09-Nov-20**	**-**	**-**
39	Collate test results of all rounds of execution			05-Nov-20	05-Nov-20	PT Team	27
40	Preparation of Final Performance Test Report and review			08-Nov-20	08-Nov-20	PT Team	27
41	Performance Testing Closure & Sign Off			09-Nov-20	09-Nov-20	IT Team & PT Team	27

7. Deliverables

Phases	Performance Deliverables
Requirement Gathering & Planning	Test Plan document
Design	Performance Test Scripts
Execution	Execution Summary Report at the end of each rounds
Closure	Final Performance Test Closure Report

8. Entry and Exit Criteria

Phase	Entry Criteria	Exit Criteria
Test Design	▶ Workstation should be allocated for PT resources ▶ Required tools installations in allocated PT machines ▶ Performance Test Plan document should be reviewed and signed-off by BSF IT ▶ Transactions scope should be finalized along with user volume distribution. ▶ Access to BaNCS in 3 identified workstations for performance testing. ▶ Test data required should be made available and remain valid during the course of design. ▶ Transactions finalized should be functionally stable in performance test environment (SIT) ▶ UAT environment availability ▶ Password encryption, CAPTCHA, OTP and other security level challenges should be either disabled or made static	▶ Test Scripts for all the identified end to end transactions should be ready for execution ▶ Stable test scripts with a sanity test in the execution environment

TestExecution	▶ Performance Test Environment (SIT) should be stable & be closer or similar to production environment in terms of configuration & hardware sizing. ▶ All test scripts developed by testing team should be validated internally before starting the performance testing ▶ Required amount of test data for the planned rounds of execution should be ready for execution ▶ Monitoring tools should be installed and configured in the respective servers for real time monitoring during test execution by BSF Infra Team ▶ Support required from BSF IT, application team, Infrastructure and other teams would be made available for execution ▶ Application logs setup to be made available for execution	▶ All the performance objectives should be met and agreed with stakeholders ▶ Transaction Response time should be within the acceptable level as agreed. ▶ Infrastructure should be stable and at acceptable levels at all times during execution. ▶ Performance Test results should be presented to BSF-IT Management and formally approved/accepted

9. Risks & Contingencies

Types of Risk	Owner	Risk Description	Mitigation Action
Schedule Risk	BSF -Project Management Team	Delivery documents sign-off	All the relevant deliverables which require BSF IT sign off to be completed on time to avoid delay in test schedule
Technical Risk	BSF IT Team	The non-availability of dedicated performance environment for scripting & execution	For scripting a SIT environment may be used. Execution is mandatorily to be done in the dedicated SIT environment. Additional effort to be included in scope, for modification required on recorded script before execution.
Technical Risk	BSF IT Team/ Infra team / Testing Team	Delay in processing prerequisites requests (firewall/ ports configuration, tool setup, enabling logs, monitoring tool access etc.) will delay overall project timelines	Required timely support (before planning phase) to avoid any delays
Technical Risk/Schedule Risk	Development vendor	Non-availability / down time of BaNcs application in performance environment (SIT)	Intimate down time in advance to re-plan design & execution activities
Technical Risk/Schedule Risk	Development vendor / BSF IT / Business	Support by development / IT / Business in various test activities	Timely support to be provided to avoid any delays in the test schedule and activities

Scope	BSF IT	Deviations from the signed off Test Plan document	The changes / modifications / deviations in any form from details as mentioned in the Test Plan due to stringent timeline would be discussed with BSF. Additional effort required to be finalized and approved by BSF
Technical Risk/Schedule Risk	Development vendor / BSF IT	Delay in the performance fixes (TAT)	Any changes / delays in schedule would be discussed with BSF and appropriate Change Requests would be raised. Additional effort required to be finalized and approved by BSF
Technical Risk	Maveric / BSF IT	Delay in configuration of monitoring tools solutions in the respective servers.	The BSF IT should provide all the required access privileges for the respective servers and provide the prompt supports