General Testing Concepts

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Stage	Role	Name
Author/Lead	QA Lead	Rami
Reviewer	Release Manager/ Product Manager/ Engineering Lead	
Approver	Director QA	

smoke Testing

Smoke Testing is a testing technique that is inspired from hardware testing, which checks for the smoke from the hardware components once the hardware's power is switched on. Similarly in

Software testing context, smoke testing refers to testing the basic functionality of the build.

smoke testing is done in Vidyo on every build arriving to QA in order to validated the basic functionality of the build.

tests are flaged with 'blocker' status, If the Test fails, build is declared as unstable and it is NOT tested anymore until the smoke test of the build passes.

Smoke Testing - Features:

- Identifying the business critical functionalities that a product must satisfy.
- Designing and executing the basic functionalities of the application.
- Ensuring that the smoke test passes each and every build in order to proceed with the testing.
- Smoke Tests enables uncovering obvious errors which saves time and effort of test team.
- Smoke Tests can be manual or automated.

Functional Testing

A type of black-box testing that is based on the specifications of the software that is to be tested.

The application is tested by providing input and then the results are examined that need to conform to the functionality it was intended for.

There are five steps that are involved while testing an application for functionality.

Steps	Description	
I	The determination of the functionality that the intended application is meant to perform.	done by having the requirements from product team

II	The creation of test data based on the specifications of the application.	based on the requirement, designing the high level test plan
III	The output based on the test data and the specifications of the application.	output for the test (expected results) are based on the requirements
IV	The writing of test scenarios and the execution of test cases.	creating test cases for testing the scenarios
V	The comparison of actual and expected results based on the executed test cases.	validating the actual results compare to the expected and submitting a bug when needed

Unit Testing

Performed by developers before SW is handed over to the testing team to formally execute the test cases.

Unit testing is performed on the individual units of source code assigned areas. The goal of unit testing is to isolate each part of the program and show that individual parts are correct in terms

of requirements and functionality. designing the unit testing and creating them is by responsibility of R&D.

Regression Testing

Regression testing is done whenever a change in a software application is made, Regression testing is performed to verify that a fixed bug or new feature development hasn't resulted in another functionality or business rule violation. The intent of regression testing is to ensure that a change, such as a bug fix should not result in another fault being uncovered in the application.

Regression testing is important because of the following reasons:

- Minimise the gaps in testing when an application with changes made has to be tested.
- Testing the new changes to verify that the changes made did not affect any other area of the application.
- Mitigates risks when regression testing is performed on the application.

in Vidyo, test cases are marked as regression in the testrail and performed at least on every major release. after QA performed the smoke testing, then the next after is running the 'critical' and 'major' test cases which is equivalent to regression testing.

any new feature which is added to the software and tested, in the next release, is automatically added to be part of the regression testing.

also, bug fixes, in most cases, require a set of regression tests, to ensure no new regression or bugs are found which were caused by the original fix.

Performance testing

Performance testing, a non-functional testing technique performed to determine the system parameters in terms of responsiveness and stability under various workload. Performance testing measures the quality attributes of the system, such as scalability, reliability and resource usage.

DRAFT : Vidyo Server Capacity Testing Guide

Performance Testing Techniques in Vidyo:

- **Load testing -** It is the simplest form of testing conducted to understand the behaviour of the system under a specific load. Load testing will result in measuring important business critical transactions and load on the database, application server, etc., are also monitored.

- **Stress testing -** It is performed to find the upper limit capacity of the system and also to determine how the system performs if the current load goes well above the expected maximum.

  for Vidyo's performance and stress information (using Agent Smith) please use Vidyo Stress and Performance Tool (Agent Smith) , DRAFT : Vidyo Server Capacity Testing Guide