DASISH Web Annotator (DWAN)

Test Plan for Reliability

Test Plan Identifier

DWAN release 1.0 Test Plan for Reliability version 0.9 (draft)

Introduction

A system's reliability is a measure of stability and overall performance of a system collated during an extended period of time under various specific sets of test conditions. This type of testing incorporates the results from non-functional testing such as stress testing, security testing, network testing, along with functional testing. It is a combined metric to define a system's overall reliability. A measure of reliability should be defined by business requirements in the form of service levels. These requirements should then be used to measure test results and the overall reliability metric of a system under test.

Reliability testing will be carried out only through the server API.

Features and Functions to Test

RE1 - High
The DWAN server was able to handle (albeit very slowly) the worst load that can be expected to occur at least once a month. Maximum number of simultaneous sessions for testing is 50.

RE2 - Medium
The DWAN server is able to run for long periods of time (i.e. at least one week) without any noticeable deterioration in resource utilization.

RE3 - Medium
The DWAN server was able to successfully process an entire week's worth of input data (~600 input scenarios).

RE4 - Low
An estimate of the robustness of the DWAN server will be determined by randomly selecting several data entry fields for destructive error routine checking. The Pyhton scripts will be used to send values that could not have been entered via a browser. These "illegal" values will be submitted to the DWAN server to check its error handling are robust enough to handle this unusual event.

Features and Functions not to Test

Notable features and functions that will not be tested include: None.

Although we do not test server-side software, one could check the following aspects:

- After a server is unexpected restarted, are all the transactions that were mid-way through being processed, rolled back/aborted cleanly?
- Restarting the DWAN server does not significantly improve performance (symptomatic of a memory leaks).
- Can the failover/recovery take place within the required time period (SLA)? Especially when the DWAN server is operating under stressful conditions.

- Can the DWAN server handle one or more of the database servers being saturated to the point where either the server automatically reboots it self or completely locks up?
- Can the DWAN server handle individual database servers being unexpectedly turned off and/or rebooted without warning? e.g. the load balancer.

Test Deliverables

The following documents will be generated as a result of these testing activities:

- Test plan for Reliability (this document)
- Test log for each testing effort
- Automated test scripts and supporting test data

Under normal testing conditions, the incident reports would be produced in GitHub.
With the exception of the automated test scripts, all documents will be delivered as PDF documents.

Test Environment

Testing is performed on the client side with operating system Windows 7, Windows 8, Mac OS X or Linux. For the testing of the server API the Python programming environment with the unit testing framework and the package Requests 2.3.0 (https://pypi.python.org/pypi/requests/) is used.