Flaky Test Handler Plugin

Plugin Information
View Flaky Test Handler on the plugin site for more information.

This plugin is used to provide various support for handling flaky tests. It currently supports for Git and Maven. It includes support for the latest version of the Maven surefire plug-in which produces additional data about test flakiness using the new "rerunFailingTestsCount" option. It also supports re-running only failed tests for a failed build at the exact failed Git revision. Finally it aggregates statistics of tests (passes, fails and flakes) over Git revisions.

Introduction and Prerequisite

A flaky test is a test which could fail or pass for the same configuration. Flaky tests could be harmful for developers because their failures do not always indicate bugs in the code.

This plugin is designed to handle flaky tests, including re-running failed tests, aggregate and report flaky tests statistics and so on.

Note: Currently most features of this plugin are designed for Git, Maven and freestyle build projects.

Publish re-run information for flaky tests

We recently made some contributions to Maven Surefire to add the new option "rerunFailingTestsCount". It lets users to choose to re-run failed tests up to N times, and if it passes within any of those N times, the re-run will stop and the test will be marked as a "Flake". The build will be marked as successful if there is no failed tests but only "flaky" tests.

The new option may be release with Maven Surefire 2.18 in the near future: https://github.com/apache/maven-surefire/commit/fefaae7f0534a59f52c046a64c96987e8561dd48

So the first part of our plugin is to integrate with this new feature from Maven Surefire. Once the "rerunFailingTestsCount" is used either by command line or in pom.xml, the plugin will parse the report and display flaky tests, output information of all the re-runs(stacktrace, output, etc) on test result page.

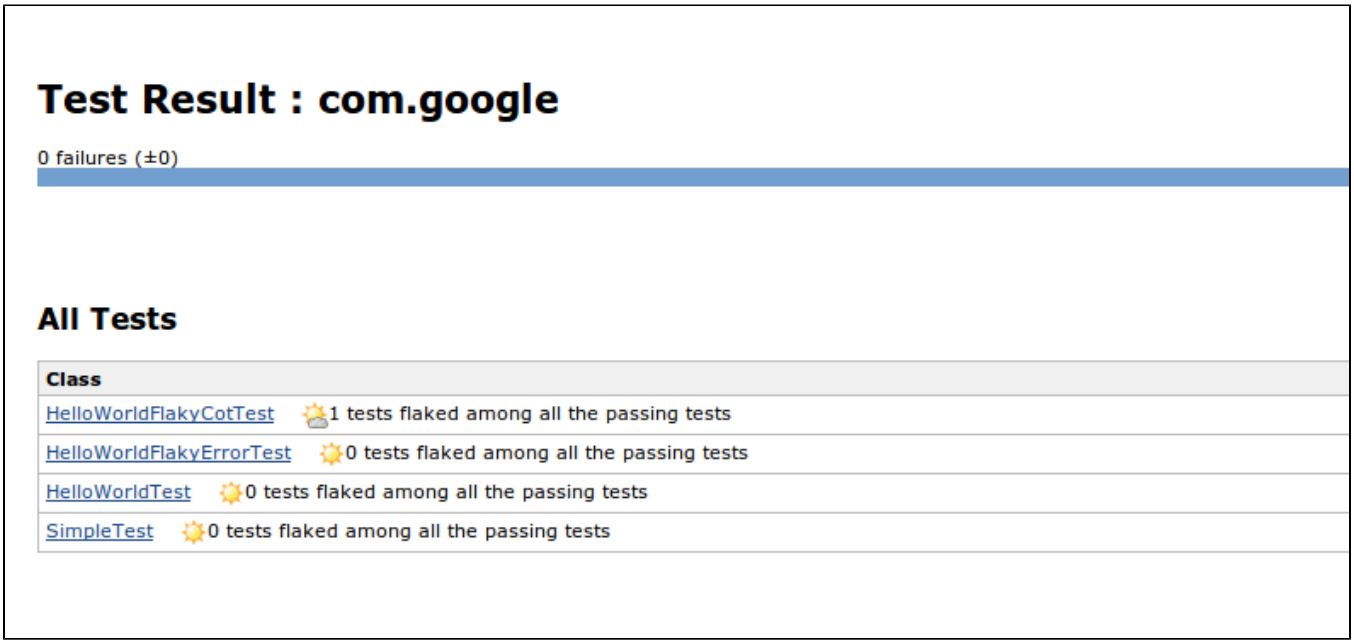
Configuration:

After the plugin is installed and JUnit test report is published, check on “Publish JUnit flaky test reports” under “Additional test report features.

Usage:

Display all the re-runs in the test result page:

Display flaky tests information in the test result table as a badge:



Aggregating Tests Statistics over Revisions

Configuration:

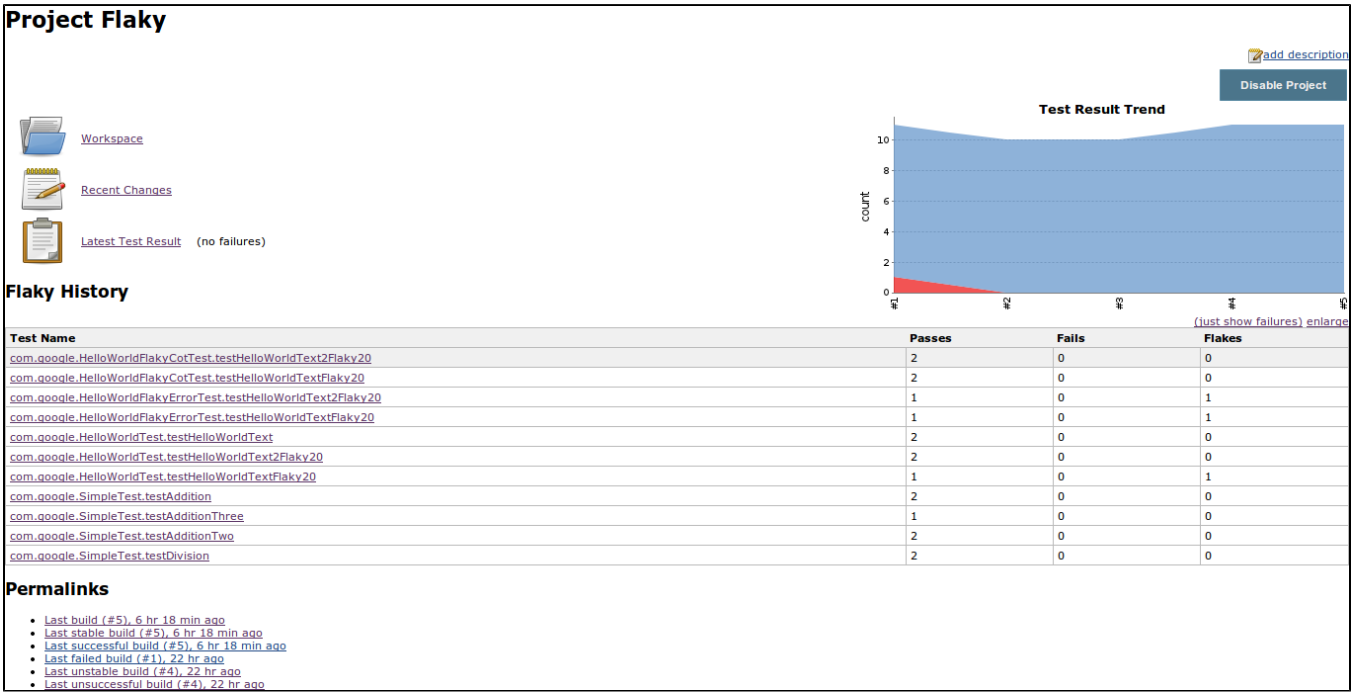
Add “Publish JUnit flaky stats” as a post build step

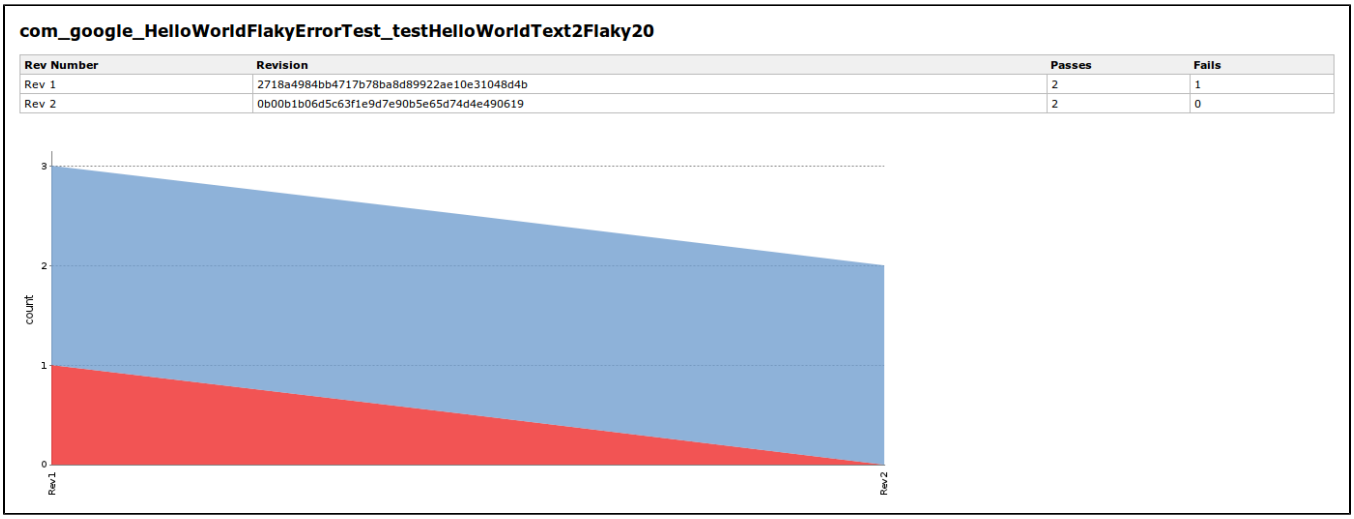
Note: This feature requires JUnit test result report being published, and this step has to be placed **after** “Publish JUnit test result report”.

Usage:

For each Git revision and each test, we count how many times it passed, how many times it failed. So if a test passed and failed for the both revision, we count it as a flake; if it always failed, then it's a fail, otherwise it's a pass.

If Git is not used as scm, then we use build number as revision number.

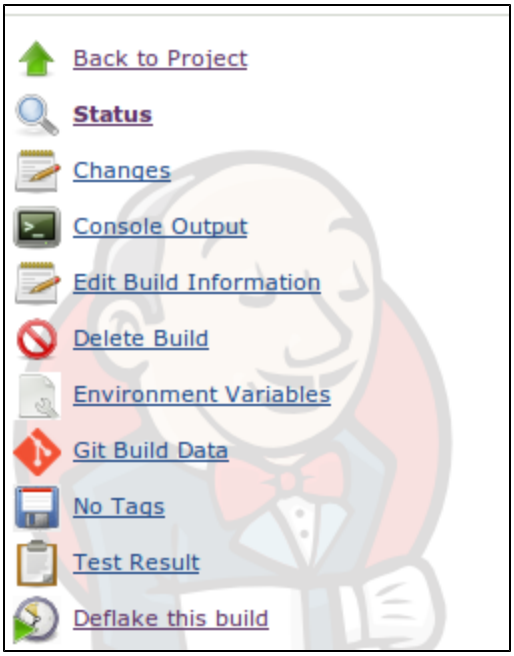




"Deflake" Action for Builds with Failed Tests

Usage:

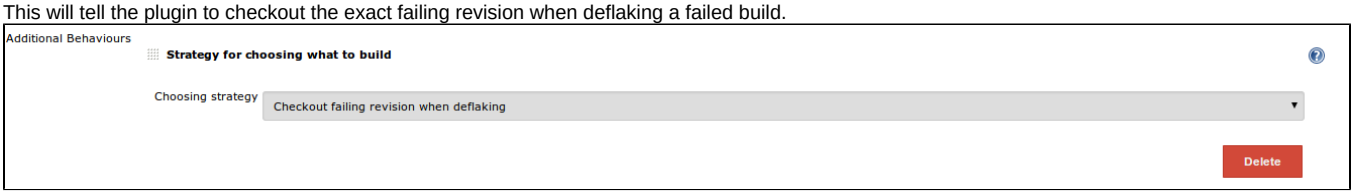
For each failing build we provide a "Deflake" action. It is different from rebuilding the project, as it will:
1) Checkout the exact revision of that failing build (GIT)
2) Only run all those failed tests.
So this will give developers a good idea about how many tests are flaky for this build.



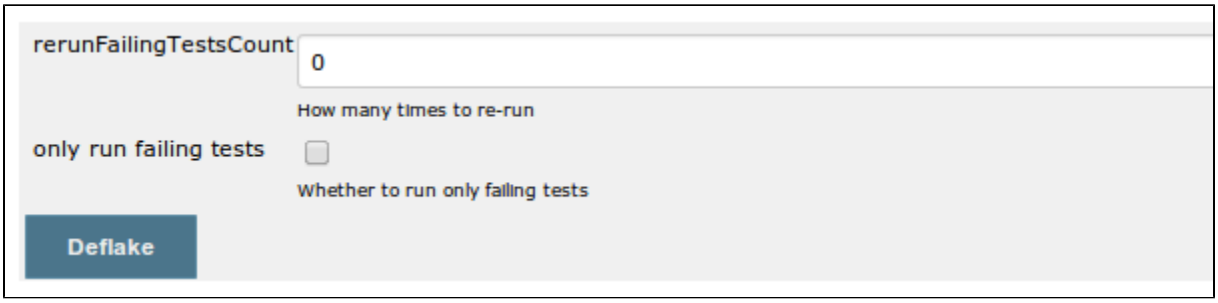
Configuration:

When configuring project's scm with Git plugin, use Add button to add "Strategy for choosing what to build", and then select "Checkout failing revision when deflaking".

This will tell the plugin to checkout the exact failing revision when deflaking a failed build.



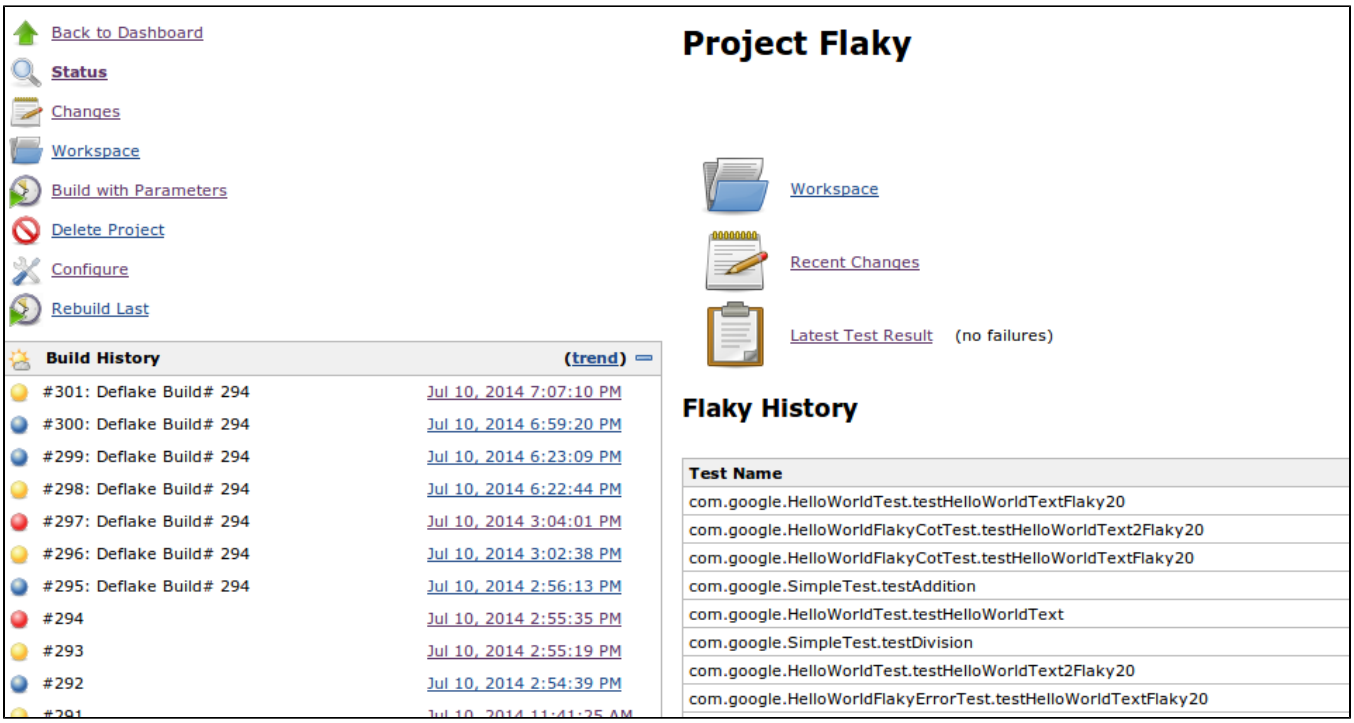
After clicking "Deflake", there is another configuration window.



"rerunFailingTestsCount" is the new Surefire option, it can be set and passed to the deflake build. However if this parameter is already set in the project pom.xml, then it cannot be overwritten.

"only run failing tests": when checked, the plugin will generate -Dtest=... to pass to Maven, so only previous failed tests will be re-run.

Deflake build will show up as "Deflake Build # ...".


Back to Dashboard
Status
Changes
Workspace
Build with Parameters
Delete Project
Configure
Rebuild Last
Build History
(trend)
#301: Deflake Build# 294
Jul 10, 2014 7:07:10 PM
#300: Deflake Build# 294
Jul 10, 2014 6:59:20 PM
#299: Deflake Build# 294
Jul 10, 2014 6:23:09 PM
#298: Deflake Build# 294
Jul 10, 2014 6:22:44 PM
#297: Deflake Build# 294
Jul 10, 2014 3:04:01 PM
#296: Deflake Build# 294
Jul 10, 2014 3:02:38 PM
#295: Deflake Build# 294
Jul 10, 2014 2:56:13 PM
#294
Jul 10, 2014 2:55:35 PM
#293
Jul 10, 2014 2:55:19 PM
#292
Jul 10, 2014 2:54:39 PM
Project Flaky
Workspace
Recent Changes
Latest Test Result
(no failures)
Flaky History
Test Name
com.google.HelloWorldTest.testHelloWorldTextFlaky20
com.google.HelloWorldFlakyCotTest.testHelloWorldText2Flaky20
com.google.HelloWorldFlakyCotTest.testHelloWorldTextFlaky20
com.google.SimpleTest.testAddition
com.google.HelloWorldTest.testHelloWorldText
com.google.SimpleTest.testDivision
com.google.HelloWorldTest.testHelloWorldText2Flaky20
com.google.HelloWorldFlakyErrorTest.testHelloWorldTextFlaky20