# Integration with CircleCI

CircleCl is a well-known CI/CD tool available on-premises and as SaaS.

Xray does not provide yet a plugin for CircleCI. However, it is easy to setup CircleCI in order to integrate it with Xray.

Since Xray provides a full REST API, you may interact with Xray, for submitting results for example.

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## JUnit example

In this scenario, we want to get visibility of the automated test results from some tests implemented in Java, using the JUnit framework.

This recipe could also be applied for other frameworks such as NUnit, TestNG or Robot.

We need to setup a project based on a Git repository containing the code along with the configuration for CircleCI build process.

The tests are implemented in a JUnit class as follows.

#### CalcTest.java

```
package com.xpand.java;
import org.junit.After;
import org.junit.Before;
import org.junit.Test;
import static org.hamcrest.CoreMatchers.is;
import static org.junit.Assert.assertThat;
public class CalcTest {
   @Before
   public void setUp() throws Exception {
    }
   @After
   public void tearDown() throws Exception {
    }
       @Test
    public void CanAddNumbers()
    {
        assertThat(Calculator.Add(1, 1), is(2));
       assertThat(Calculator.Add(-1, 1), is(0));
    }
   @Test
   public void CanSubtract()
    {
       assertThat(Calculator.Subtract(1, 1), is(0));
       assertThat(Calculator.Subtract(-1, -1), is(0));
       assertThat(Calculator.Subtract(100, 5), is(95));
    }
    @Test
   public void CanMultiply()
    {
        assertThat(Calculator.Multiply(1, 1), is(1));
       assertThat(Calculator.Multiply(-1, -1), is(1));
       assertThat(Calculator.Multiply(100, 5), is(500));
    }
    public void CanDivide()
    {
       assertThat(Calculator.Divide(1, 1), is(1));
       assertThat(Calculator.Divide(-1, -1), is(1));
       assertThat(Calculator.Divide(100, 5), is(20));
    }
   @Test
   public void CanDoStuff()
    {
       assertThat(true, is(true));
    }
}
```

The CircleCl configuration file .circleci/config.yml contains the definition of the build steps, including running the automated tests and submitting the results.

```
.circleci/config.yml
version: 2 # use CircleCI 2.0
jobs: # a collection of steps
 build: # runs not using Workflows must have a `build` job as entry point
   working_directory: ~/demo/java-junit-calc # directory where steps will run
   docker: # run the steps with Docker
     - image: circleci/openjdk:8-jdk-browsers # ...with this image as the primary container; this is where all
`steps` will run
   steps: # a collection of executable commands
     - checkout: # check out source code to working directory
         path: ~/demo
     - restore_cache: # restore the saved cache after the first run or if `pom.xml` has changed
         key: circleci-java-junit-calc-demo # circleci-java-junit-calc-demo-{{ checksum "pom.xml" }}
     - run: mvn dependency:go-offline # gets the project dependencies
     - run: mvn test # run the actual tests
     - save cache: # saves the project dependencies
         paths:
           - ~/.m2
         key: circleci-java-junit-calc-demo # circleci-java-junit-calc-demo-{{ checksum "pom.xml" }}
      - store_test_results: # uploads the test metadata from the `target/surefire-reports` directory so that it
can show up in the CircleCI dashboard.
         path: target/surefire-reports
     - run: 'curl -H "Content-Type: multipart/form-data" -u $jira_user:$jira_password -F "file=@target
/surefire-reports/TEST-com.xpand.java.CalcTest.xml" "$jira_server_url/rest/raven/1.0/import/execution/junit?
projectKey=CALC" '
```

In order to submit those results, we'll just need to invoke the REST API (as detailed in Import Execution Results - REST).

However, we do not want to have the Xray credentials hardcoded in CircleCI's configuration file. Therefore, we'll use some environment variables defined in project settings, including:

- **jira\_user**: for the Jira username
- jira\_password: for the Jira user's password
- jira\_server\_url: for the Jira's base URL (e.g. http://yourjiraserver)

### Please note

The user present in the configuration below must exist in the JIRA instance and have permission to Create Test and Test Execution Issues.

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JOBS	Settings » sergiofreire » automation-samples			View automation-samples »
WORKFLOWS	PROJECT SETTINGS Overview			
II. INSIGHTS	Org Settings BUILD SETTINGS	Environment Variables for sergiofreire/automation-samples		Import Variables Add Variable
ADD PROJECTS	Build Environment Adjust Parallelism	Add environment variables to the job. You can add sensitive data (e.g. API keys) here, rather than placing them in the repository.		
*	Environment Variables	Name	Value	Remove
TEAM	Advanced Settings	client_id	xxxx368F	×
		client_secret	xxxx2db2	×
¢\$	TEST COMMANDS	jira_password	ххххре	×
SETTINGS	Dependency Commands	jira_server_url	xxxx.com	×
	Test Commands	jira_user	xxxxmin	×

In.circleci/config.yml a "step" must be included that will use "curl" in order to submit the results to the REST API.

curl -H "Content-Type: multipart/form-data" -u \$jira\_user:\$jira\_password -F "file=@target/surefire-reports/TESTcom.xpand.java.CalcTest.xml" "\$jira\_server\_url/rest/raven/1.0/import/execution/junit?projectKey=CALC"

We're using "curl" utility that comes in Unix based OS'es but you can easily use another tool to make the HTTP request; however, "curl" is provided in the container used by CircleCI.

### References

• https://circleci.com/docs/2.0/configuration-reference/