

Living Documentation

Version 0.7.0

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Chapter 1. Introduction

DBUnit Rules aims for bringing [DBUnit](#) closer to your JUnit tests. Here are the main features:

- [JUnit rule](#) to integrate with DBUnit via annotations:

```
@Rule
public DBUnitRule dbUnitRule = DBUnitRule.instance(jdbcConnection);①

@Test
@DataSet(value = "datasets/yml/users.yml")
public void shouldSeedDataSet(){
    //database is seed with users.yml dataset
}
```

① The rule depends on a JDBC connection.

- CDI interceptor to seed database without rule instantiation;
- Json, Yaml, xml and flat xml support;
- Cucumber integration;
- JPA integration;
- Multiple database support;
- Date/time support in datasets;

The project is composed by 5 modules:

- [Core](#): Contains the dataset executor and JUnit rule;
- [CDI](#): provides the DBUnit interceptor
- [Cucumber](#): a CDI aware cucumber runner;
- [JPA](#): Comes with a dataset executor based on JPA entity manager
- [Examples module](#).

Chapter 2. Summary

Scenarios			Steps							Features: 3	
Passed	Failed	Total	Passed	Failed	Skipped	Pending	Undefined	Missing	Total	Duration	Status
Manage database with DBUnit Rules Core											
1	0	1	4	0	0	0	0	0	4	008ms	passed
Manage database with DBUnit Rules CDI											
1	0	1	4	0	0	0	0	0	4	450ms	passed
Dynamic data using scribable datasets											
2	0	2	7	0	0	0	0	0	7	002ms	passed
Totals											
4	0	4	15	0	0	0	0	0	15	460ms	

Chapter 3. Features

3.1. Manage database with DBUnit Rules Core

In order to manage database state in JUnit tests
As a developer
I want to use DBUnit in my tests.

DBUnit Rules Core module brings [DBunit](#) to your unit tests via [JUnit rules](#).

3.1.1. Scenario: Seed database using yml dataset

Given

The following junit rules 👍 (008ms)

```
@RunWith(JUnit4.class)
public class DBUnitRulesIt {
    @Rule
    public EntityManagerProvider emProvider =
        EntityManagerProvider.instance("rules-it"); ①

    @Rule
    public DBUnitRule dbUnitRule =
        DBUnitRule.instance(emProvider.getConnection()); ②
}
```

- ① [EntityManagerProvider](#) is a simple Junit rule that creates a JPA entityManager for each test. DBunit rule don't depend on EntityManagerProvider, it only needs a JDBC connection.
- ② DBUnit rule responsible for reading [@DataSet](#) annotation and prepare the database for each test.

And

The following dataset 🍌 (000ms)

src/test/resources/dataset/yml/users.yml

```
user:
  - id: 1
    name: "@realpestano"
  - id: 2
    name: "@dbunit"
tweet:
  - id: abcdef12345
    content: "dbunit rules!"
    user_id: 1
  - id: abcdef12233
    content: "dbunit rules!"
    user_id: 2
  - id: abcdef1343
    content: "CDI for the win!"
    user_id: 2
follower:
  - id: 1
    user_id: 1
    follower_id: 2
```

When

The following test is executed: 📱 (000ms)

```
@Test
@DataSet(value = "datasets/yml/users.yml", useSequenceFiltering =
true)
public void shouldSeedUserDataSet() {
    User user = (User) emProvider.em().createQuery("select u from
User u join fetch u.tweets join fetch u.followers where u.id =
1").getSingleResult();
    assertNotNull(user);
    assertEquals(1, user.getId());
    assertNotNull(user.getTweets().hasSize(1));
    Tweet tweet = user.getTweets().get(0);
    assertNotNull(tweet);
    Calendar date = tweet.getDate();
    Calendar now = Calendar.getInstance();

    assertEquals(date.get(Calendar.DAY_OF_MONTH), now.get(Calendar.
DAY_OF_MONTH));
}
```

Then

The database should be seeded with the dataset content before test execution 📱 (000ms)

3.2. Manage database with DBUnit Rules CDI

In order to manage database state in **CDI** based tests
As a developer
I want to use DBUnit in a CDI test environment.

DBUnit CDI integration is done through a [CDI interceptor](#).

CDI must be enabled in your test, see the following example:



```
@RunWith(CdiTestRunner.class) ①  
public class DBUnitCDITest {  
  
}
```

① [CdiTestRunner](#) is provided by [Apache Deltaspike](#) but you should be able to use other CDI test runners.

3.2.1. Scenario: Seed database using yaml dataset

Given

DBUnit interceptor is enabled in your test beans.xml: 🍻 (449ms)

src/test/resources/META-INF/beans.xml

```
<?xml version="1.0" encoding="UTF-8"?>
<beans xmlns="http://java.sun.com/xml/ns/javaee"
       xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
       xsi:schemaLocation="http://java.sun.com/xml/ns/javaee
http://java.sun.com/xml/ns/javaee/beans_1_0.xsd">
  <interceptors>

  <class>com.github.dbunit.rules.cdi.DBUnitInterceptor</class>
  </interceptors>
</beans>
```



Your test itself must be a CDI bean to be intercepted. if you're using [Deltaspike test control](#) just enable the following property in `test/resources/META-INF/apache-deltaspike.properties`:

```
deltaspike.testcontrol.use_test_class_as_cdi_bean=true
```

And

The following dataset 🍌 (000ms)

src/test/resources/dataset/yml/users.yml

```
user:
  - id: 1
    name: "@realpestano"
  - id: 2
    name: "@dbunit"
tweet:
  - id: abcdef12345
    content: "dbunit rules!"
    user_id: 1
  - id: abcdef12233
    content: "dbunit rules!"
    user_id: 2
  - id: abcdef1343
    content: "CDI for the win!"
    user_id: 2
follower:
  - id: 1
    user_id: 1
    follower_id: 2
```

When

The following test is executed: 🍌 (000ms)

```
@Test
@UsingDataSet("yml/users.yml")
public void shouldSeedUserDataSetUsingCdiInterceptor() {
    List<User> users = em.createQuery("select u from User u order
by u.id asc").getResultList();
    User user1 = new User(1);
    User user2 = new User(2);
    Tweet tweetUser1 = new Tweet();
    tweetUser1.setId("abcdef12345");
    assertThat(users).isNotNull().hasSize(2).contains(user1,
user2);
    List<Tweet> tweetsUser1 = users.get(0).getTweets();

    assertThat(tweetsUser1).isNotNull().hasSize(1).contains(tweetUser1);
}
```

Then

The database should be seeded with the dataset content before test execution 🍌 (000ms)

3.3. Dynamic data using scribable datasets

In order to have dynamic data in datasets

As a developer

I want to use scripts in DBUnit datasets.

Scribable datasets are backed by JSR 223. [2: Scripting for the Java Platform, for more information access the official [docs here](#)].

3.3.1. Scenario: Seed database with groovy script in dataset

Given

Groovy script engine is on test classpath 🍌 (001ms)

```
<dependency>
  <groupId>org.codehaus.groovy</groupId>
  <artifactId>groovy-all</artifactId>
  <version>2.4.6</version>
  <scope>test</scope>
</dependency>
```

And

The following dataset 🍌 (000ms)

```
tweet:
- id: "1"
  content: "dbunit rules!"
  date: "groovy:new Date()" ①
  user_id: 1
```

① Groovy scripting is enabled by **groovy:** string.

When

The following test is executed: 🍌 (000ms)

```
@Test
@DataSet(value = "datasets/yml/groovy-with-date-
replacements.yml",cleanBefore = true, disableConstraints = true,
executorId = "scripts-it")
public void shouldReplaceDateUsingGroovyInDataset() {
    Tweet tweet = (Tweet) emProvider.em().createQuery("select t from
    Tweet t where t.id = '1'").getSingleResult();
    assertThat(tweet).isNotNull();

    assertThat(tweet.getDate().get(Calendar.DAY_OF_MONTH)).isEqualTo(now.ge
    t(Calendar.DAY_OF_MONTH));

    assertThat(tweet.getDate().get(Calendar.HOUR_OF_DAY)).isEqualTo(now.get
    (Calendar.HOUR_OF_DAY));
}
```

Then

Dataset script should be interpreted when seeding the database 🍌 (000ms)

3.3.2. Scenario: Seed database with javascript in dataset



Javascript engine comes within JDK so no additional classpath dependency is necessary.

Given

The following dataset 🍌 (000ms)

```
tweet:
  - id: "1"
    content: "dbunit rules!"
    likes: "js:(5+5)*10/2" ①
    user_id: 1
```

① Javascript scripting is enabled by `js:` string.

When

The following test is executed: 🍌 (000ms)

```
@Test
@DataSet(value = "datasets/yml/js-with-calc-
replacements.yml",cleanBefore = true ,disableConstraints = true,
executorId = "scripts-it")
public void shouldReplaceLikesUsingJavaScriptInDataset() {
    Tweet tweet = (Tweet) emProvider.em().createQuery("select t from
Tweet t where t.id = '1'").getSingleResult();
    assertNotNull(tweet);
    assertEquals(50,tweet.getLikes());
}
```

Then

Dataset script should be interpreted when seeding the database 🍌 (000ms)