



LFN Developer & Testing Forum

# Spock and Groovy Testing

**Unit Testing in the 2020s**

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# Goals of Unit Testing

- ✓ Documentation: Describes the behavior (happy path, edge cases, error scenarios)
- ✓ Validation: Proves what the code does
- ✓ Assurance: Prevent regression
- ✓ Design: TDD / BDD

# Misunderstandings

Common

Misunderstandings



“Unit test is for Code Coverage”



“Unit test should test only one class”  
Don't be dogmatic, be pragmatic!



“Mocking is difficult”  
No, not since Spock!



“Unit test are redundant I have good  
integration test”  
Please read up on the testing pyramid!

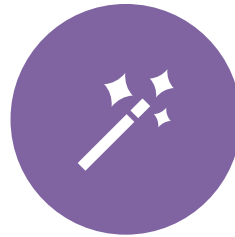
# Advantages of Spock & Groovy



LANGUAGE STRUCTURE  
PERFECTLY SUITED FOR TEST  
METHODS



CAN USE HUMAN READABLE  
STRINGS FOR 'METHOD  
NAMES' AND LABELS



GROOVY MAGIC:  
-ACCESS TO PRIVATE FIELDS  
- GROOVY COLLECTIONS&MAPS  
-ETC



SETTING UP STUBS, MOCKS  
AND BEHAVIOUR EASIER THEN  
EVER BEFORE

## Spock uses 'labels' with descriptions

given: 'a good course'

when: 'I follow it'

then: 'I learned something'

setup: 'bring my laptop'

where: 'in Dublin and Madrid'

cleanup: 'do I have to?'

# Method Names and Descriptions

## Traditional jUnit v. Spock

```
@Test  
public void testCreateAnchor()  
// When a new dataspacespace repository'  
}  
}
```

```
def 'Create a new dataspacespace repository'  
when: 'a new dataspacespace repository'  
  
then: 'the dataspacespace repository'  
}
```

The screenshot shows a test runner interface with a tree view of test results. The root node is 'Test Results' (expanded), which contains 'CpsAdminPersistenceServiceSpec' (expanded). Under 'CpsAdminPersistenceServiceSpec', there are several test cases, each with a green checkmark indicating it passed:

- ✓ Create and retrieve a new dataspacespace repository'
- ✓ Attempt to create a duplicate dataspacespace repository'
- ✓ Create and retrieve a new anchor.
- ✓ Create anchor error scenario: #scenario.
  - ✓ Create anchor error scenario: dataspacespace repository' does not exist
  - ✓ Create anchor error scenario: schema set does not exist
  - ✓ Create anchor error scenario: anchor already exists
- > ✓ Get anchor error scenario: #scenario.
- > ✓ Get all anchors in dataspacespace repository' #dataspacespaceName.
- ✓ Get all anchors in unknown dataspacespace repository'.

# Access to private members

No need to manipulate production code

```
class AdminService {  
  class AdminServiceSpec {  
  
    setup: { objectUnderTest.cpsCache = Mock(CpsCache) }  
  
  }  
}
```

```
AdminServiceTest {  
  :  
  objectUnderTest.setCpsPersistenceService(Mock(CpsCache))  
}
```





- ✓ Project setup
- ✓ Adding some Basic Tests
- ✓ Data Driven Tests
- ✓ Using Mocks
- ✓ Advanced Testing
  - ✓ Spring MVC Rest End points
  - ✓ SQL DB (semi-)Integration Test

# Results

> Releasability

> Reliability ?

> Security ?

> Security Review ?

> Maintainability ?

▼ Coverage **COVERAGE**

Overview

Overall

Coverage	92.9%
Lines to Cover	454
Uncovered Lines	31
Line Coverage	93.2%
Conditions to Cover	52
Uncovered Conditions	5
Condition Coverage	90.4%

cps-rest/src/main/java/org/onap/cps/rest/utills/MultipartFileUtil.java	96.6%
cps-service/src/main/java/org/onap/cps/spi/model/DataNodeBuilder.java	97.4%
cps-service/src/main/java/org/onap/cps/spi/exceptions/AnchorAlreadyDefinedException.java	100%
cps-service/src/main/java/org/onap/cps/spi/exceptions/AnchorNotFoundException.java	100%
cps-ri/src/main/java/org/onap/cps/spi/repository/AnchorRepository.java	100%
cps-service/src/main/java/org/onap/cps/config/CacheConfig.java	100%
cps-service/src/main/java/org/onap/cps/spi/CascadeDeleteAllowed.java	100%
cps-service/src/main/java/org/onap/cps/spi/...	
cps-ri/src/main/java/org/onap/cps/spi/impl/...	
cps-service/src/main/java/org/onap/cps/api/...	
cps-rest/src/main/java/org/onap/cps/config/...	
cps-ri/src/main/java/org/onap/cps/spi/impl/...	
cps-service/src/main/java/org/onap/cps/spi/...	

- Mixing/Migrating junit & Spock is easy
- SonarCloud:
  - Groovy Coverage included
  - Limitation: 1 package 1 report
  - Test not visible?!

# Resources

- <https://www.baeldung.com/groovy-spock>
- <http://spockframework.org/spock/docs>
- <https://github.com/spockframework/spock-example>
- <http://groovy-lang.org/documentation.html>
- [http://spockframework.org/spock/docs/1.3/data\\_driven\\_testing.html](http://spockframework.org/spock/docs/1.3/data_driven_testing.html)
- [https://www.jetbrains.com/help/idea/getting-started-with-groovy.html#create\\_groovy\\_project](https://www.jetbrains.com/help/idea/getting-started-with-groovy.html#create_groovy_project)
- <https://gerrit.onap.org/r/admin/repos/cps>
- <https://wiki.onap.org/pages/viewpage.action?pageId=92998161> (CPS Team Conventions)



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# Q&A



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