TestnG - Dependencies

We will learn about the dependency feature in TestNG. Dependency allows users of TestNG to specify a dependency **method** or a dependency **group** for a test method. This will help in executing a set of tests to be executed before a test method. Method dependency only works if the depend-on-method is part of the same class or any of the inherited base class (that is, while extending a class).

* Dependency test
* Writing a multiple dependency test
* Dependency on group
* Using regular expressions
* Defining dependency through XML

Single Method Dependency

Below test class contains two test methods which print a message name onto the console when executed. Here, test method testOne depends on test method testTwo. This is configured by using the attribute dependsOnMethods while using the Test annotation as shown is the preceding code.

**package** pack3;

**import** org.testng.annotations.Test;

**public** **class** SimpleDependencyTest {

@Test(dependsOnMethods = { "testTwo" })

**public** **void** testOne() {

System.***out***.println("Test method one");

}

@Test

**public** **void** testTwo() {

System.***out***.println("Test method two");

}

}

Output:

[RemoteTestNG] detected TestNG version 6.14.2

Test method two

Test method one

PASSED: testTwo

PASSED: testOne

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Default test

Tests run: 2, Failures: 0, Skips: 0

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Default suite

Total tests run: 2, Failures: 0, Skips: 0

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MultiDependency

Below test class contains three test methods which print a message name onto the console when executed. Here test method testOne depends on test methods testTwo and testThree. This is configured by using the attribute dependsOnMethods while using the Test annotation as shown in the preceding code.

**package** pack3;

**import** org.testng.annotations.Test;

**public** **class** MultiDependencyTest {

@Test(dependsOnMethods = { "testTwo", "testThree" })

**public** **void** testOne() {

System.***out***.println("Test method one");

}

@Test

**public** **void** testTwo() {

System.***out***.println("Test method two");

}

@Test

**public** **void** testThree() {

System.***out***.println("Test method three");

}

}

Output:

[RemoteTestNG] detected TestNG version 6.14.2

Test method three

Test method two

Test method one

PASSED: testThree

PASSED: testTwo

PASSED: testOne

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Default test

Tests run: 3, Failures: 0, Skips: 0

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Default suite

Total tests run: 3, Failures: 0, Skips: 0

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Inherited Tests

Below test class contains two test methods which print a message name onto the console when executed. Here test method testThree depends on test method testOne. This is configured by using the attribute dependsOnMethods while using the Test annotation

**package** pack3;

**import** org.testng.annotations.Test;

**public** **class** InheritedTest **extends** SimpleDependencyTest {

@Test(dependsOnMethods = { "testOne" })

**public** **void** testThree() {

System.***out***.println("Test three method in Inherited test");

}

@Test

**public** **void** testFour() {

System.***out***.println("Test four method in Inherited test");

}

}

**package** pack3;

**import** org.testng.annotations.Test;

**public** **class** SimpleDependencyTest {

@Test(dependsOnMethods = { "testTwo" })

**public** **void** testOne() {

System.***out***.println("Test method one");

}

@Test

**public** **void** testTwo() {

System.***out***.println("Test method two");

}

}

testng.xml

<?xml version=*"1.0"* encoding=*"UTF-8"*?>

<!DOCTYPE suite SYSTEM "<http://testng.org/testng-1.0.dtd>">

<suite name=*"Suite"* time-out=*"500"*>

<test name=*"Test"*>

<classes>

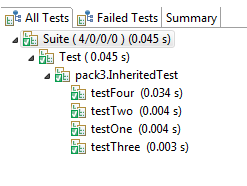
<class name=*"pack3.InheritedTest"*></class>

</classes>

</test> <!-- Test -->

</suite> <!-- Suite -->

See below screenshot and console output



[RemoteTestNG] detected TestNG version 6.14.2

Test four method in Inherited test

Test method two

Test method one

Test three method in Inherited test

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Suite

Total tests run: 4, Failures: 0, Skips: 0

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Group Dependency

The dependency on the group is configured using the attribute dependsOnGroups while using

the Test annotation, as shown in the below code.

Method dependency only works with other methods that belong to the same class or in one of the inherited classes but not across different classes. In case you need a test method that exists in a separate class; you can achieve this by assigning the said test method to a group and configuring the dependent test method to be dependent on that group.

Example of dependsOnGroups defined in same class:

**package** pack3;

**import** org.testng.annotations.Test;

**public** **class** GroupDependency {

@Test(dependsOnGroups = { "grouptest" })

**public** **void** groupTestOne() {

System.***out***.println("Group Test method one");

}

@Test(groups = { "grouptest" })

**public** **void** groupTestTwo() {

System.***out***.println("Group test method two");

}

@Test(groups = { "grouptest" })

**public** **void** groupTestThree() {

System.***out***.println("Group Test method three");

}

}

testng.xml

<?xml version=*"1.0"* encoding=*"UTF-8"*?>

<!DOCTYPE suite SYSTEM "<http://testng.org/testng-1.0.dtd>">

<suite name=*"Suite"* time-out=*"500"*>

<test name=*"Test"*>

<classes>

<class name=*"pack3.GroupDependency"*></class>

</classes>

</test> <!-- Test -->

</suite> <!-- Suite -->

Output:

[RemoteTestNG] detected TestNG version 6.14.2

Group Test method three

Group test method two

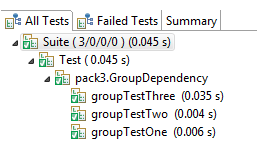
Group Test method one

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Suite

Total tests run: 3, Failures: 0, Skips: 0

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Example of dependsOnGroups defined in another class:

**package** pack3;

**import** org.testng.annotations.Test;

**public** **class** GroupDependency {

@Test()

**public** **void** groupTestOne() {

System.***out***.println("Group Test method one");

}

@Test(groups = { "grouptest" })

**public** **void** groupTestTwo() {

System.***out***.println("Group test method two");

}

@Test

**public** **void** groupTestThree() {

System.***out***.println("Group Test method three");

}

}

**public** **class** MultiDependencyTest {

@Test(dependsOnGroups= {"grouptest"})

**public** **void** testOne() {

System.***out***.println("Test method one");

}

@Test

**public** **void** testTwo() {

System.***out***.println("Test method two");

}

@Test

**public** **void** testThree() {

System.***out***.println("Test method three");

}

}

<?xml version=*"1.0"* encoding=*"UTF-8"*?>

<!DOCTYPE suite SYSTEM "<http://testng.org/testng-1.0.dtd>">

<suite name=*"Suite1"* time-out=*"500"*>

<test name=*"Test"*>

<classes>

<class name=*"pack3.MultiDependencyTest"*></class>

</classes>

</test> <!-- Test -->

</suite> <!-- Suite -->

Run above testng.xml and below error is thrown

[RemoteTestNG] detected TestNG version 6.14.2

org.testng.TestNGException:

DependencyMap::Method "MultiDependencyTest.testOne()[pri:0, instance:pack3.MultiDependencyTest@3b0090a4]" depends on nonexistent group "grouptest"

at org.testng.DependencyMap.getMethodsThatBelongTo(DependencyMap.java:41)

at org.testng.internal.DynamicGraphHelper.createDynamicGraph(DynamicGraphHelper.java:76)

at org.testng.TestRunner.privateRun(TestRunner.java:618)

at org.testng.TestRunner.run(TestRunner.java:505)

at org.testng.SuiteRunner.runTest(SuiteRunner.java:455)

at org.testng.SuiteRunner.runSequentially(SuiteRunner.java:450)

at org.testng.SuiteRunner.privateRun(SuiteRunner.java:415)

at org.testng.SuiteRunner.run(SuiteRunner.java:364)

at org.testng.SuiteRunnerWorker.runSuite(SuiteRunnerWorker.java:52)

at org.testng.SuiteRunnerWorker.run(SuiteRunnerWorker.java:84)

at org.testng.TestNG.runSuitesSequentially(TestNG.java:1208)

at org.testng.TestNG.runSuitesLocally(TestNG.java:1137)

at org.testng.TestNG.runSuites(TestNG.java:1049)

at org.testng.TestNG.run(TestNG.java:1017)

at org.testng.remote.AbstractRemoteTestNG.run(AbstractRemoteTestNG.java:114)

at org.testng.remote.RemoteTestNG.initAndRun(RemoteTestNG.java:251)

at org.testng.remote.RemoteTestNG.main(RemoteTestNG.java:77)

<?xml version=*"1.0"* encoding=*"UTF-8"*?>

<!DOCTYPE suite SYSTEM "<http://testng.org/testng-1.0.dtd>">

<suite name=*"Suite1"* time-out=*"500"*>

<test name=*"Test"*>

<classes>

<class name=*"pack3.MultiDependencyTest"*></class>

<class name=*"pack3.GroupDependency"*></class>

</classes>

</test> <!-- Test -->

</suite> <!-- Suite -->

Run above testng.xml and below is the output

[RemoteTestNG] detected TestNG version 6.14.2

Test method three

Test method two

Group Test method one

Group Test method three

Group test method two

Test method one

PASSED: testThree

PASSED: testTwo

PASSED: groupTestOne

PASSED: groupTestThree

PASSED: groupTestTwo

PASSED: testOne

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Default test

Tests run: 6, Failures: 0, Skips: 0

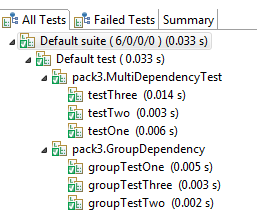
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Default suite

Total tests run: 6, Failures: 0, Skips: 0

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**Using Regular Expressions**

**package** pack3;

**import** org.testng.annotations.Test;

**public** **class** RegularExpressionTest {

@Test(dependsOnGroups = { "starts-with.\*" })

**public** **void** regularExpMethod() {

System.***out***.println("Dependent method");

}

@Test(groups = { "starts-with-one" })

**public** **void** startsWithMethodOne() {

System.***out***.println("Starts with method one");

}

@Test(groups = { "starts-with-two" })

**public** **void** startsWithMethodTwo() {

System.***out***.println("Starts with method two");

}

}

testng.xml

<?xml version=*"1.0"* encoding=*"UTF-8"*?>

<!DOCTYPE suite SYSTEM "<http://testng.org/testng-1.0.dtd>">

<suite name=*"Suite1"* time-out=*"500"*>

<test name=*"Test"*>

<groups>

<run>

<include name=*"starts-with.\*"*>

</include>

</run>

</groups>

<classes>

<class name=*"pack3.RegularExpressionTest"*></class>

</classes>

</test> <!-- Test -->

</suite> <!-- Suite -->

Output:

[RemoteTestNG] detected TestNG version 6.14.2

Starts with method one

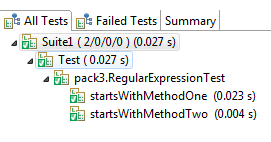
Starts with method two

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Suite1

Total tests run: 2, Failures: 0, Skips: 0

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Defining dependency through XML

In the below SimpleXmlDependency, test 'groupTestOne' depends on group 'testgroup' i.e on methods groupTestTwo() and groupTestThree()

**package** pack3;

**import** org.testng.annotations.Test;

**public** **class** SimpleXmlDependency {

@Test(dependsOnGroups= {"testgroup"})

**public** **void** groupTestOne() {

System.***out***.println("Group Test method one");

}

@Test(groups = { "testgroup" })

**public** **void** groupTestTwo() {

System.***out***.println("Group test method two");

}

@Test(groups = { "testgroup" })

**public** **void** groupTestThree() {

System.***out***.println("Group Test method three");

}

}

**Below is testng.xml to run '**SimpleXmlDependency'

<?xml version=*"1.0"* encoding=*"UTF-8"*?>

<!DOCTYPE suite SYSTEM "<http://testng.org/testng-1.0.dtd>">

<suite name=*"Suite"* time-out=*"500"*>

<test name=*"Test"*>

<classes>

<class name=*"pack3.SimpleXmlDependency"*>

</class>

</classes>

</test> <!-- Test -->

</suite> <!-- Suite -->

**Output:**

[RemoteTestNG] detected TestNG version 6.14.2

Group Test method three

Group test method two

Group Test method one

PASSED: groupTestThree

PASSED: groupTestTwo

PASSED: groupTestOne

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Default test

Tests run: 3, Failures: 0, Skips: 0

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Default suite

Total tests run: 3, Failures: 0, Skips: 0

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See below modified SimpleXmlDependency. There is no mention of 'dependsOnGroups' for method 'groupTestOne'

**package** pack3;

**import** org.testng.annotations.Test;

**public** **class** SimpleXmlDependency {

@Test(groups = { "dependentgroup" })

**public** **void** groupTestOne() {

System.***out***.println("Group Test method one");

}

@Test(groups = { "testgroup" })

**public** **void** groupTestTwo() {

System.***out***.println("Group test method two");

}

@Test(groups = { "testgroup" })

**public** **void** groupTestThree() {

System.***out***.println("Group Test method three");

}

}

Below testng.xml defined dependencies

<?xml version=*"1.0"* encoding=*"UTF-8"*?>

<!DOCTYPE suite SYSTEM "<http://testng.org/testng-1.0.dtd>">

<suite name=*"Suite"* time-out=*"500"*>

<test name=*"Test"*>

<groups>

<dependencies>

<group depends-on=*"testgroup"* name=*"dependentgroup"*></group>

</dependencies>

</groups>

<classes>

<class name=*"pack3.SimpleXmlDependency"*>

</class>

</classes>

</test> <!-- Test -->

</suite> <!-- Suite -->

Output:

[RemoteTestNG] detected TestNG version 6.14.2

Group Test method three

Group test method two

Group Test method one

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Suite

Total tests run: 3, Failures: 0, Skips: 0

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