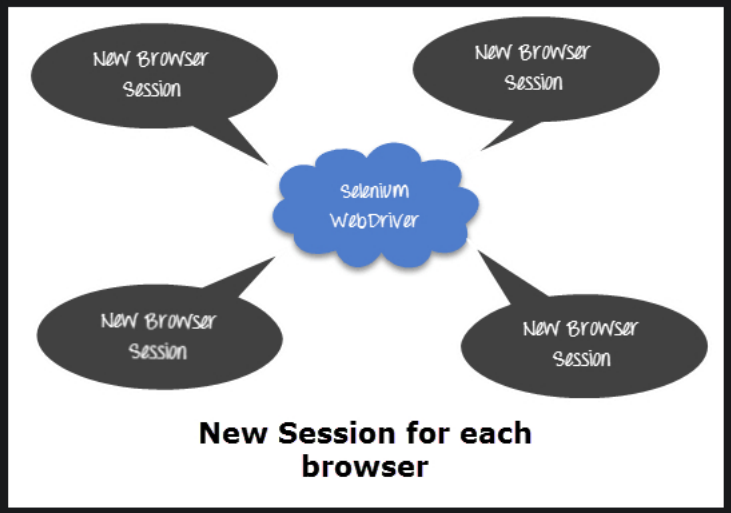
Parallel Execution in Selenium: Session Handling & TestNG Dependency

To understand how to run scripts in parallel, let's first understand

Why do we need Session Handling?

During test execution, the Selenium WebDriver has to interact with the browser all the time to execute given commands. At the time of execution, it is also possible that, before current execution completes, someone else starts execution of another script, in the same machine and in the same type of browser.

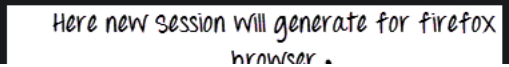


New Session for each browser

In such situation, we need a mechanism by which our two different executions should not overlap with each other. This can be achieved using Session Handling in Selenium.

How to achieve Session Handling in Selenium WebDriver?

If you check the source code of Selenium WebDriver, you will find a variable named as 'sessionId'. Whenever we create a new instance of a WebDriver object, a new 'sessionId' will be generated and attached with that particular Firefox/Chrome/IE Driver ().



Selenium Tutorials

21) Gecko (Marionette) Driver
22) Install TestNG in Eclipse
23) Selenium & TestNG
24) Introduction to TestNG Groups
25) Test Case Priority in TestNG
26) Sessions,Parallel & Dependency
27) Execute multiple test suites
28) TestNG Listeners
29) TestNG Tutorial
30) TestNG Report Generation
31) PDF, Emails and Screenshot

```
webdriver=new FirefoxDriver();
```

So anything we do after this will execute only in that particular Firefox browser session.

As this is an in-built functionality, there is no explicit need to assign the session id

Code Example: Here two different sessions will be generated for two different WebDriver.

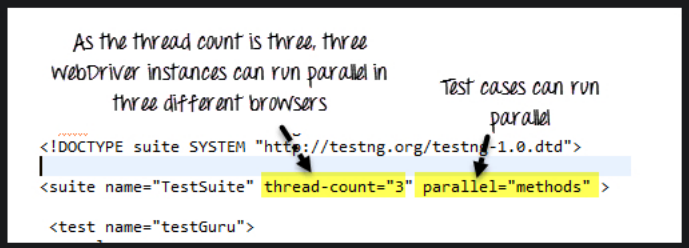

```
import org.openqa.selenium.WebDriver;
import org.openqa.selenium.firefox.FirefoxDriver;
public class SessionHandling {
public static void main(String...strings ){
    //First session of WebDriver
    WebDriver driver = new FirefoxDriver();
    //Goto guru99 site
    driver.get("http://demo.guru99.com/V4/");

    //Second session of WebDriver
    WebDriver driver2 = new FirefoxDriver();
    //Goto guru99 site
    driver2.get("http://demo.guru99.com/V4/");
}
}
```

How to run Parallel Tests with Selenium

There are situations where you want to run multiple tests at the same time.

In such cases, one can use "parallel" attribute



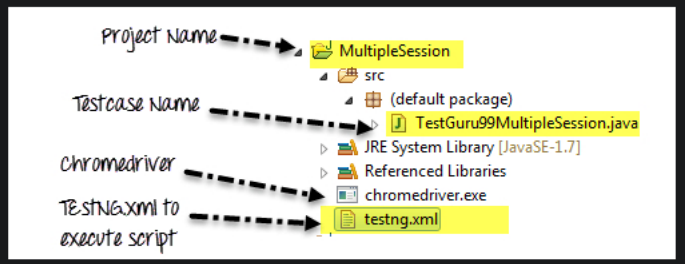
The parallel attribute of suite tag can accept four values:

tests	All the test cases inside <test> tag of Testing xml file will run parallel.
classes	All the test cases inside a Java class will run parallel
methods	All the methods with @Test annotation will execute parallel.
instances	Test cases in same instance will execute parallel but two methods of two different instances will run in different thread.

The attribute *thread-count* allows you to specify how many threads should be allocated for this execution.

Complete Example: In this Example, three test cases will run parallel and fill login data in http://demo.guru99.com

The Complete project will look like:



TestGuru99MultipleSession.java

```
import org.openqa.selenium.WebDriver;
import org.openqa.selenium.chrome.ChromeDriver;
import org.testng.annotations.Test;
public class TestGuru99MultipleSession {
    @Test
    public void executSessionOne(){
            //First session of WebDriver
        System.setProperty("webdriver.chrome.driver","chromedriver.exe");
            WebDriver driver = new ChromeDriver();
            //Goto guru99 site
            driver.get("http://demo.guru99.com/V4/");
            //find user name text box and fill it
            driver.findElement(By.name("uid")).sendKeys("Driver 1");

        }

    @Test
        public void executeSessionTwo(){
            //Second session of WebDriver
        System.setProperty("webdriver.chrome.driver","chromedriver.exe");
        WebDriver driver = new ChromeDriver();
            //Goto guru99 site
        driver.get("http://demo.guru99.com/V4/");
        //find user name text box and fill it
        driver.findElement(By.name("uid")).sendKeys("Driver 2");

        }

    @Test
        public void executSessionThree(){
            //Third session of WebDriver
        System.setProperty("webdriver.chrome.driver","chromedriver.exe");
        WebDriver driver = new ChromeDriver();
            //Goto guru99 site
        driver.get("http://demo.guru99.com/V4/");
        //find user name text box and fill it
        driver.findElement(By.name("uid")).sendKeys("Driver 3");

        }
}
```

TestNG.XML

```
<?xml version="1.0" encoding="UTF-8"?>
<!DOCTYPE suite SYSTEM "http://testng.org/testng-1.0.dtd">
<suite name="TestSuite" thread-count="3" parallel="methods" >
<test name="testGuru">
<classes>
<class name="TestGuru99MultipleSession">
</class>
</classes>
</test>
</suite>
```

Test Case order and Dependency

You can set order and dependency of Test Case execution.

Suppose you have two test cases , 'testGuru99TC1' and 'testGuru99TC2' and you want to execute test case 'testGuru99TC2' before 'testGuru99TC1'. In that case we will use 'dependsOnMethods' attribute to make dependency and order of execution.

```
<?xml version="1.0" encoding="UTF-8"?>
<!DOCTYPE suite SYSTEM "http://testng.org/testng-1.0.dtd">
<suite name="TestSuite" thread-count="3" parallel="methods" >
<test name="testGuru">
<classes>
<class name="TestGuru99MultipleSession">
<include value="testGuru99TC1" dependsOnMethods=" testGuru99TC2"/>
<include value="testGuru99TC2"/>
</class>
</classes>
</test>
</suite>
```

Summary

- A new sessionID is created for a new instance of WebDriver.
- One session will bind with one particular browser.
- Using attribute thread and parallel, you run your scripts in parallel.
- You can use attribute dependency to set the order to test execution

Prev Report a Bug Next

YOU MIGHT LIKE:

SELENIUM

Top 15 Selenium Alternatives in 2019

{loadposition top-ads-automation-testing-tools} Selenium is an open-source automated testing

SELENIUM

How to Click on Image in Selenium Webdriver

Accessing Image Links Image links are the links in web pages represented by an image

SELENIUM

How to Select Value from DropDown using Selenium Webdriver

In this tutorial, we will learn how to handle Drop Down and Multiple Select Operations.

Read more »

Read more »

Select...

Read more »

SELENIUM

How to Drag and Drop in Selenium WebDriver (EXAMPLE)

Some web application, have a functionality to drag web elements and drop them on defined area or...

Read more »

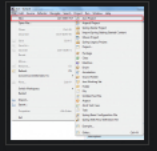
SELENIUM

Selenium Webdriver using Python: Tutorial with Example

Selenium supports Python and thus can be utilized with Selenium for testing. Python is easy...

Read more »

SELENIUM



How to Execute Failed Test Cases in TestNG: Selenium WebDriver

In this tutorial, you will learn- Create a Selenium Project Convert and Execute Selenium Project to...

Read more »

Top Tutorials

Selenium | Testing | Hacking

SAP | Java | Python

Jmeter | Informatica | JIRA

About

About Us
Advertise with Us
Write For Us
Contact Us

Career Suggestion

SAP Career Suggestion Tool
Software Testing as a Career

Interesting

Books to Read!
Blog
Quiz
eBook

Execute online

Execute Java Online
Execute Javascript
Execute HTML
Execute Python

