**Agenda**:

* In this document I’m just explain how to work/implement Selenium\_Grind in 2 different machines.

**Pre-Requests**:

* Before going to Selenium Grid, we must have work experience with Selenium & it good if we experienced with TestNG.
* I prefer to use selenium 2.5 to avoid driver problems.

**Let’s Go**:

* Keep selenium-server-standalone-2.53.1.jar file in both machine in some location.
* Open command prompt in both machine and navigate to the location where we kept the jar file.
  + **Tips**: go to the folder and Shift+Right Mouse click
  + This will open command prompt in particular location.
  + **Example**: I kept my jar file in Desktop/Selenium folder. So i went to Selenium folder and Shift+Right Click and I got my command prompt.

**Hub & Node**:

***Hub***: It’s the central machine in which we develop our program. It acts as a server, because it controls Test machines.

***Node***: a node is referred to a Test Machine which opts to connect with the Hub. This test machine will be used by Hub to run tests on.

**Hub Configuration**:

* Step 1: Choose any one machine as HUB
* Step 2: Go to selenium-server-standalone-2 folder and open command prompt.
* Step 3: Run below code to make/run HUB.
  + C:\Users\VinothKumar\Desktop\Vinoth\Selenium>java -jar selenium-server-standalone-2.53.1.jar -role hub
  + Below are the results

C:\Users\VinothKumar\Desktop\Vinoth\Selenium>java -jar selenium-server-standalon

e-2.53.1.jar -role hub

16:21:34.412 INFO - Launching Selenium Grid hub

2018-09-29 16:21:37.688:INFO::main: Logging initialized @3899ms

16:21:37.732 INFO - Will listen on 4444

16:21:37.937 INFO - Will listen on 4444

2018-09-29 16:21:37.949:INFO:osjs.Server:main: jetty-9.2.z-SNAPSHOT

2018-09-29 16:21:38.064:INFO:osjsh.ContextHandler:main: Started o.s.j.s.ServletC

ontextHandler@17211155{/,null,AVAILABLE}

2018-09-29 16:21:38.135:INFO:osjs.ServerConnector:main: Started ServerConnector@

aecb35a{HTTP/1.1}{0.0.0.0:4444}

2018-09-29 16:21:38.139:INFO:osjs.Server:main: Started @4350ms

16:21:38.143 INFO - Nodes should register to http://192.168.1.3:4444/grid/regist

er/

16:21:38.150 INFO - **Selenium Grid hub is up and running**

* + Make sure we get this message at last
* Now our HUB is ready

**Node Configuration**:

* Step 1: open node machine and navigate to selenium server jar file location
* Step 2: Open command prompt in jar file location.
* Run below command:
  + java -jar selenium-server-standalone-2.53.1.jar -role node -hub http://192.168.1.3:4444/grid/register -port 5555
  + Below are the results:

17:20:59.146 INFO - Launching a Selenium Grid node

17:21:01.902 INFO - Java: Oracle Corporation 25.111-b14

17:21:01.903 INFO - OS: Windows 7 6.1 amd64

17:21:01.913 INFO - v2.53.1, with Core v2.53.1. Built from revision a36b8b1

17:21:02.011 INFO - Driver class not found: com.opera.core.systems.OperaDriver

17:21:02.011 INFO - Driver provider com.opera.core.systems.OperaDriver is not re

gistered

17:21:02.025 INFO - Driver provider org.openqa.selenium.safari.SafariDriver regi

stration is skipped:

registration capabilities Capabilities [{browserName=safari, version=, platform=

MAC}] does not match the current platform VISTA

17:21:02.027 INFO - Driver class not found: org.openqa.selenium.htmlunit.HtmlUni

tDriver

17:21:02.027 INFO - Driver provider org.openqa.selenium.htmlunit.HtmlUnitDriver

is not registered

17:21:02.076 INFO - Version Jetty/5.1.x

17:21:02.079 INFO - Started HttpContext[/selenium-server,/selenium-server]

17:21:02.082 INFO - Started org.openqa.jetty.jetty.servlet.ServletHandler@8b8714

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17:21:02.082 INFO - Started HttpContext[/wd,/wd]

17:21:02.083 INFO - Started HttpContext[/selenium-server/driver,/selenium-server

/driver]

17:21:02.083 INFO - Started HttpContext[/,/]

17:21:02.088 INFO - Started SocketListener on 0.0.0.0:5555

17:21:02.088 INFO - Started org.openqa.jetty.jetty.Server@7b49cea0

17:21:02.089 INFO - Selenium Grid node is up and ready to register to the hub

17:21:02.146 INFO - Starting auto registration thread. Will try to register ever

y 5000 ms.

17:21:02.147 INFO - **Registering the node to the hub**: http://192.168.1.3:4444/gri

d/register

17:21:02.180 INFO - **The node is registered to the hub and ready to use**

* Now our NODE is registered to HUB machine.
* Meanwhile if you see HUB computer command prompt below line will be populated. It says node is registered to hub.
  + 17:20:52.947 INFO - **Registered a node** http://192.168.1.2:5555
* Now we are configured HUB & NODE is registered to it.

**Program Development:**

We are going to develop our code in HUB machine which will run in NODE machine. So, we are not making any setup in NODE machine. We just create our Test Suit or program in HUB machine and we are going to run in NODE.

**NOTE**: All programming parts takes place in HUB machine. Not in NODE machine.

**My program**:

* **Scenario**: Opening Facebook in NODE machine
* I’m using TestNG. Even we can try without TestNG.
* TestNG is for parallel execution as we may already know in TestNG.
* I developed below code in HUB machine.
* **Running code in Firefox Browser**: Im using single method.

public class SeleniumGrid\_Example {

WebDriver driver;

@Test

public void hub() throws MalformedURLException {

// below URL is NODE

String node = "http://192.168.1.2:5555/wd/hub";

DesiredCapabilities cap = DesiredCapabilities.firefox();

// cap.setBrowserName("firefox");

cap.setPlatform(Platform.WIN8);

driver = new RemoteWebDriver(new URL(node), cap);

// Here we are launching facebook

driver.get("https://www.facebook.com/");

}

}

* **Running code in Chrome Browser**: Here im using 2 method

public class SeleniumGrid\_Chrome {

WebDriver driver;

@BeforeTest

// here we are configuring NODE and all drivers

public void hub() throws MalformedURLException {

// below URL is NODE machine IP address and port

String node = "http://192.168.1.2:5555/wd/hub";

DesiredCapabilities cap = DesiredCapabilities.chrome();

// This chrome driver location is on NODE machine

System.setProperty("webdriver.chrome.driver","C://Users//manju//Desktop//besant//Drivers//chromedriver\_win32//chromedriver.exe");

// Platform we can give specific or just give WIN8

cap.setPlatform(Platform.WIN8);

driver = new RemoteWebDriver(new URL(node), cap);}

@Test

// Here we are executing actual scenario

public void chromeBrowser() {

driver.get("https://www.facebook.com/");

}}

* Whenever we run the code we can see the progress or logs going on NODE machine command prompt.
* Even we can see the error in command prompt, same will be populated in HUB Eclipse console.

**Exceptions (or) Failures**:

1. org.openqa.selenium.remote.unreachablebrowserexception
   1. I have given NODE port number in program instead of HUB port number.
   2. Ref: <https://github.com/SeleniumHQ/selenium/issues/5679>
2. org.openqa.selenium.SessionNotCreatedException: Unable to create session from [org.openqa.selenium.remote.NewSessionPayload@86e1c7](mailto:org.openqa.selenium.remote.NewSessionPayload@86e1c7)
   1. After giving port as hub, i got this exception.
3. The best matching driver provider org.openqa.selenium.ie.InternetExplorerDriver can't create a new driver instance for Capabilities
   1. Initially I have given below capability in my code, which caused the issue
      1. DesiredCapabilities cap = DesiredCapabilities.chrome();
      2. cap.setBrowserName("firefox");
   2. I found this piece of code tried to open InternetExplorer. But in code I mentioned Firefox.
   3. So I removed cap.setBrowserName("firefox") piece then it worked well.
   4. My program ran on Firefox browser in NODE machine.
4. ChromeDriver error: java.lang.IllegalStateException: The path to the driver executable must be set by the webdriver.chrome.driver system property
   1. Previously i was giving the path of HUB machine, so i got the error.
   2. I have given chromedriver.exe path of NODE machine in code.
   3. Ref: <https://groups.google.com/forum/#!topic/selenium-users/21QB-MElwio>

**Final**:

* After all these error, I removed Chrome.exe location piece of code, without this path my code ran as expected in Chrome browser in NODE machine.
* I did change in “SeleniumGrid\_Chrome” class file. If you compare below code with above one, you can see the difference that I removed chrome.exe file location code.

@BeforeTest

public void hub() throws MalformedURLException {

// below URL is NODE machine IP address and port

String node = "http://192.168.1.2:5555/wd/hub";

DesiredCapabilities cap = DesiredCapabilities.chrome();

// Platform we can give specific or just give WIN8

cap.setPlatform(Platform.WIN8);

driver = new RemoteWebDriver(new URL(node), cap);

* Now im able to perform Grid successfully. Even I tried with parallel execution with different browser, its working fine.

Thanks for reading.

For more info or doubt you can always send your doubts to my mail id. I will do my best to help you.

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