

# Knowledge Guide for Selenium

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## CONTENTS

<b>OVERVIEW</b> .....	<b>3</b>
WHAT IS SELENIUM? .....	3
SELENIUM VARIANTS .....	4
<b>SELENIUM INSTALLATION</b> .....	<b>5</b>
<b>CONFIGURATION STEPS:</b> .....	<b>6</b>
<b>HOW SELENIUM WORKS?</b> .....	<b>20</b>
<b>SELENIUM IDE</b> .....	<b>21</b>
FEATURES .....	21
HOW TO CREATE A TEST PLAN IN SELENIUM IDE: .....	22
SAMPLE SCRIPT: .....	27
<b>SELENIUM REMOTE CONTROL (RC)</b> .....	<b>28</b>
HOW DOES SELENIUM REMOTE CONTROL INTERNALLY WORKS? .....	29
WHAT ARE THE DIFFERENT MODES THAT SELENIUM RC USES? .....	29
<b>RC COMMANDS</b> .....	<b>30</b>
WHAT IS A COMMAND? .....	30
SOME USEFUL COMMANDS: .....	31
<b>RC STEPS</b> .....	<b>32</b>
NINE IMPORTANT TIPS FOR SELENIUM REMOTE CONTROL JAVA CLIENT TEST TOOL: .....	32
HOW TO START SELENIUM SERVER: .....	33
HOW TO STOP SELENIUM SERVER: .....	33
<b>SELENIUM RC TEST SCRIPT</b> .....	<b>34</b>
<b>HOW TO RUN TEST CASE</b> .....	<b>36</b>
<b>BENEFITS OF USING SELENIUM</b> .....	<b>39</b>

## Overview

### What is Selenium?

Selenium is a suite of tools specifically for testing web applications across many platforms.

Selenium runs in many browsers and operating systems and can be controlled by many programming languages and testing frameworks.

### Browsers

Browser	Selenium IDE	Selenium Remote Control
Firefox 3	Record and playback tests	Start browser, run tests
Firefox 2	Record and playback tests	Start browser, run tests
IE 7	not supported	Start browser, run tests

### Operating Systems

OS	Selenium IDE	Selenium Remote Control
Windows	Works in Firefox 2+	Start browser, run tests
OS X	Works in Firefox 2+	Start browser, run tests
Linux	Works in Firefox 2+	Start browser, run tests

### Programming Language

Language	Selenium IDE	Selenium Remote Control
C#	Generate code	Library ("driver") support
Java	Generate code	Library ("driver") support
Perl	Generate code	Library ("driver") support
PHP	Generate code	Library ("driver") support
Python	Generate code	Library ("driver") support
Ruby	Generate code	Library ("driver") support

### Versions Available

Selenium IDE	1.0 beta 2
Selenium RC	1.0 beta 2

## Selenium Variants

There are three variants of Selenium, which can be used in isolation or in combination to create complete automation test suite for web applications.

**Selenium Core** - In Selenium Core, the tests scripts (written in HTML) and the Selenium Test Runner (written in JavaScript) are uploaded to the same web server that hosts the application we are trying to test. It is a simpler form of Selenium, and suitable for non-developers, but it has some inherent limitations.

**Selenium IDE** - Selenium IDE is a Firefox plug-in, which includes the entire Selenium Core, allows recording, playing back, editing, and debugging tests in browser. It provides the simplest introduction to Selenium and is highly recommended for beginners. We can save the tests / test suite created in xml or html format. However to run them in an automated fashion we need Selenium Remote Control.

**Selenium Remote Control (RC)** - Selenium Remote Control allows us to develop test cases and test suites in **Java** (supports JUnit & NUnit), **PHP**, Ruby, Python, Perl and even .NET. It is the most flexible setup but requires some development knowledge to set up and use.

**Selenium Grid** - Selenium Grid allows several Selenium Remote Control servers to be accessed in parallel by Selenium Grid server. This is extremely useful for automated load and stress testing of web applications.

Here we will discuss Selenium IDE and Selenium RC and their use in applications.

## *Selenium Installation*

### Pre Requisite

- 1) Install Firefox (**latest version -3.0.4**)
- 2) Install Firefox add-ons (**Firebug is recommended**)
- 3) Install Java jdk: Download jdk (not java SE) without Netbeans IDE or JEE.

Here we are using jdk1.5 (but it should work with jdk1.6)

- 3) Install (optional) Junit for java rc client (ONLY if we are using java client,  
Also we need to add Selenium java client driver in class path)

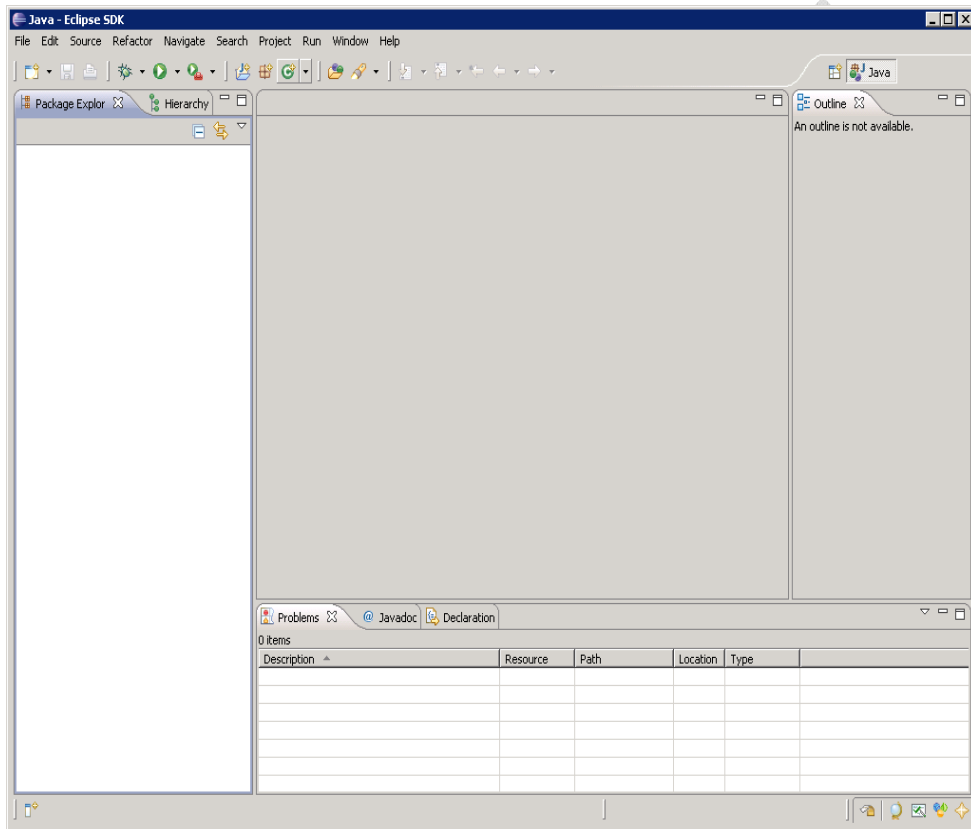
### Main TOOLS Installation:

- 1) Install Selenium IDE (Refer to page 19 for detailed info)
- 2) After installation, we should see Selenium IDE option under “Tools” option in Firefox.
- 3) Install Selenium RC
- 4) After installation, go to directory containing file 'selenium-server.jar'-  
we need to add appropriate bat/sh script.
- 5) Install Eclipse. Here we have installed version 3.4.1.

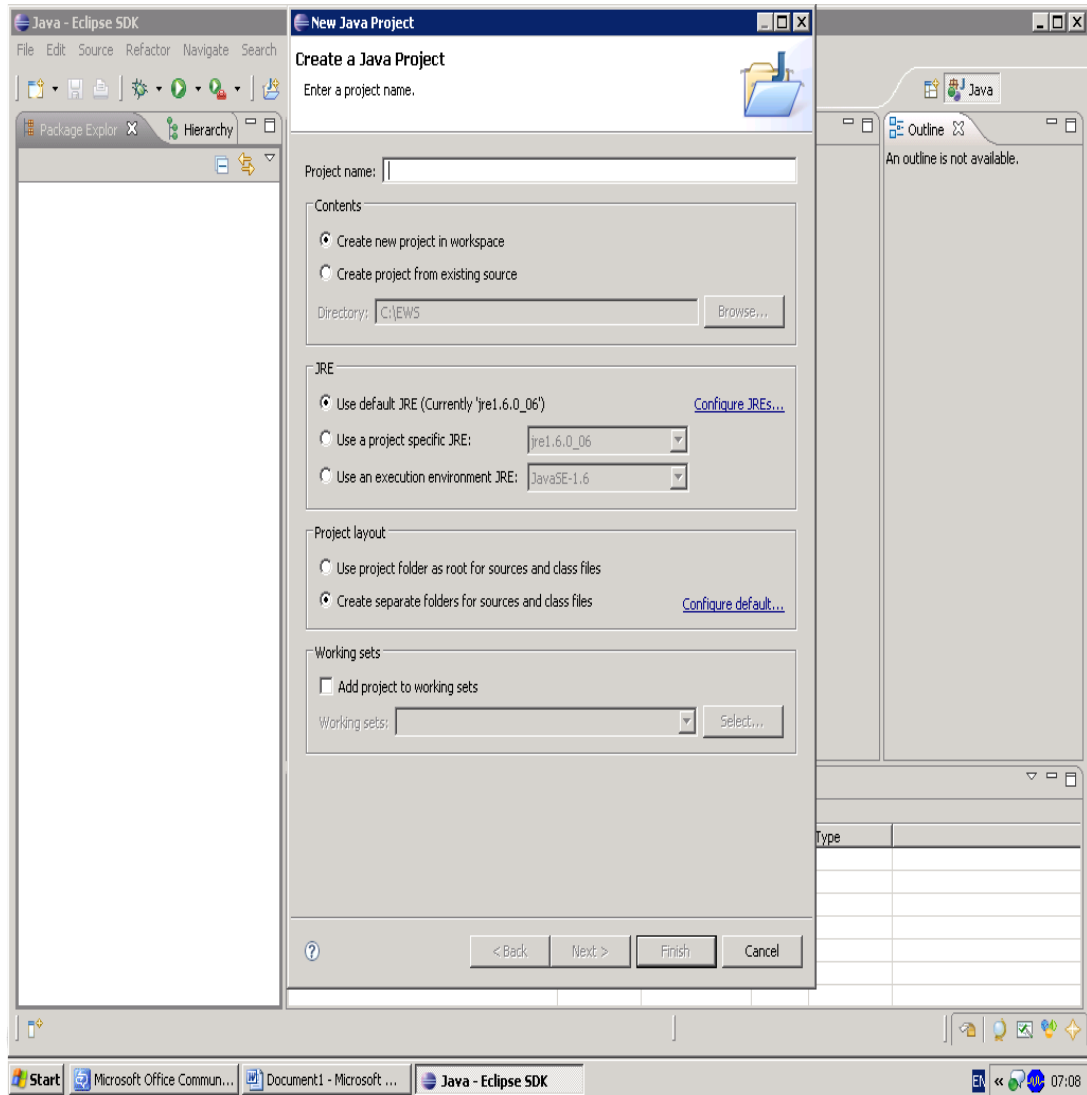
## *Configuration Steps:*

Configuration can be done through IDE's. But here we have chosen Eclipse for configuration.

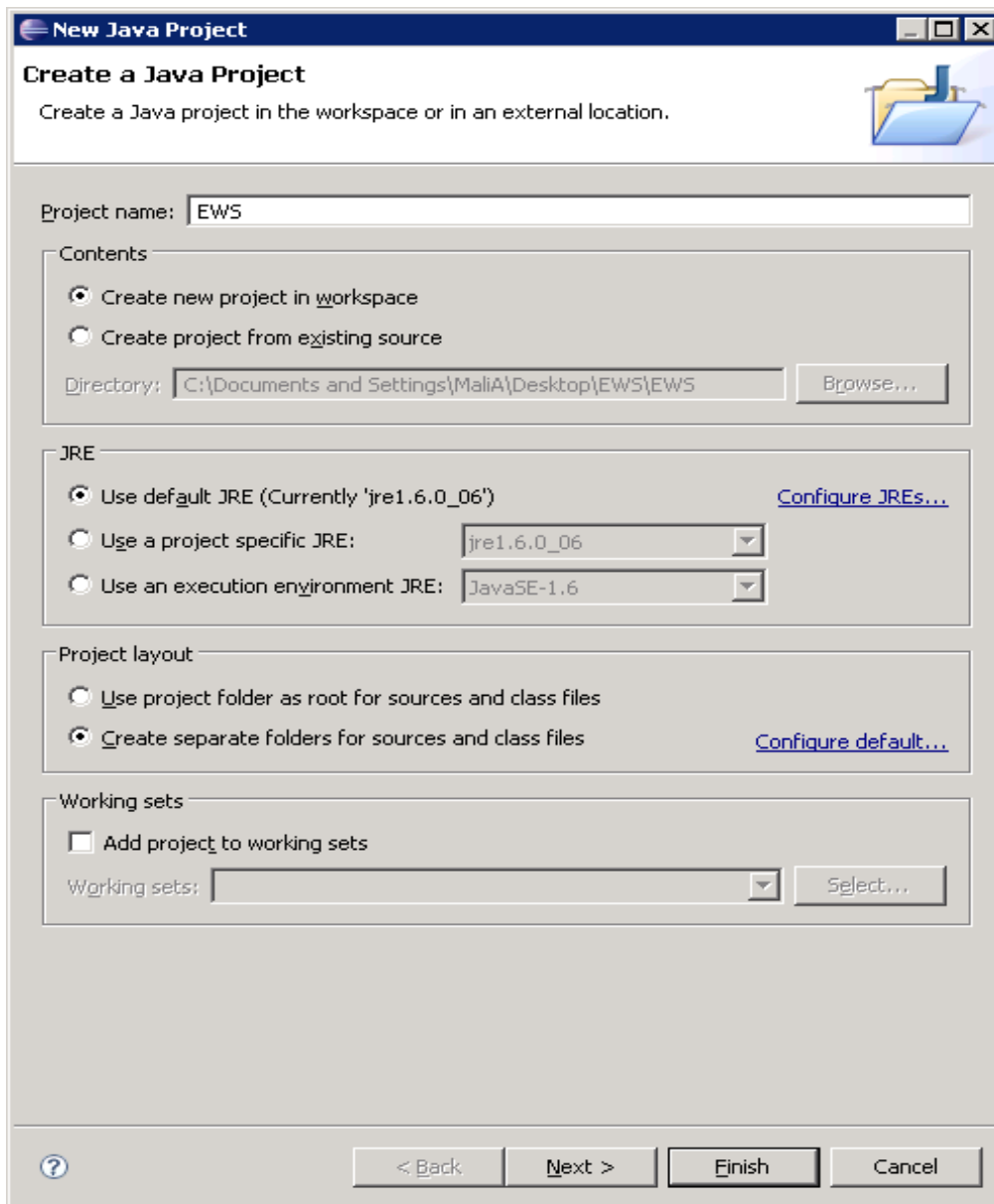
- 1) Open Eclipse.
- 2) Choose a workspace.
- 3) Click on workbench.



4) Go to File Menu -> New Java Project.



- 5) Mention "Project name".
- 6) Click on Finish button.



**New Java Project**

**Create a Java Project**  
Create a Java project in the workspace or in an external location.

Project name:

Contents

Create new project in workspace

Create project from existing source

Directory:

JRE

Use default JRE (Currently 'jre1.6.0\_06') [Configure JREs...](#)

Use a project specific JRE:

Use an execution environment JRE:

Project layout

Use project folder as root for sources and class files

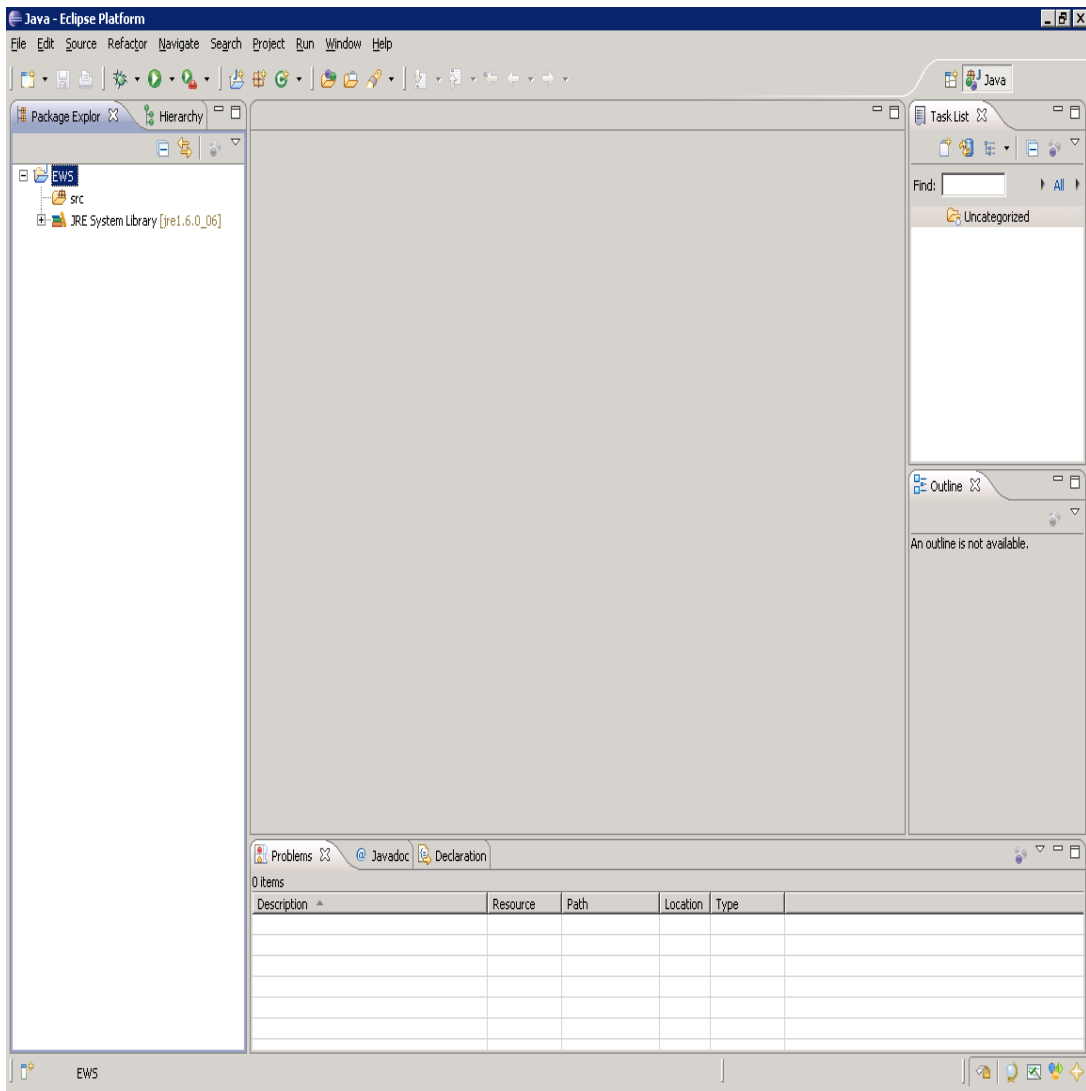
Create separate folders for sources and class files [Configure default...](#)

Working sets

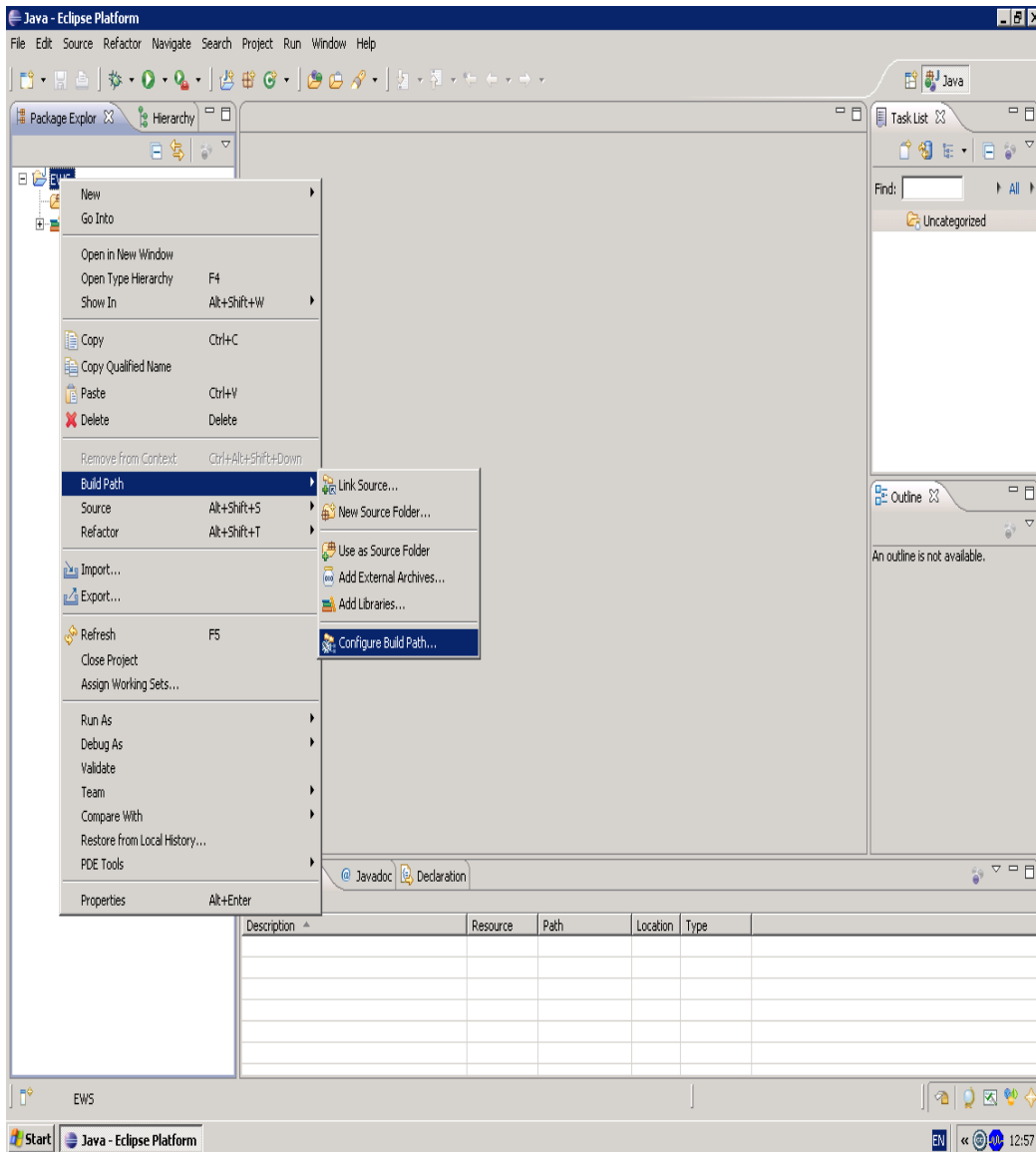
Add project to working sets

Working sets:

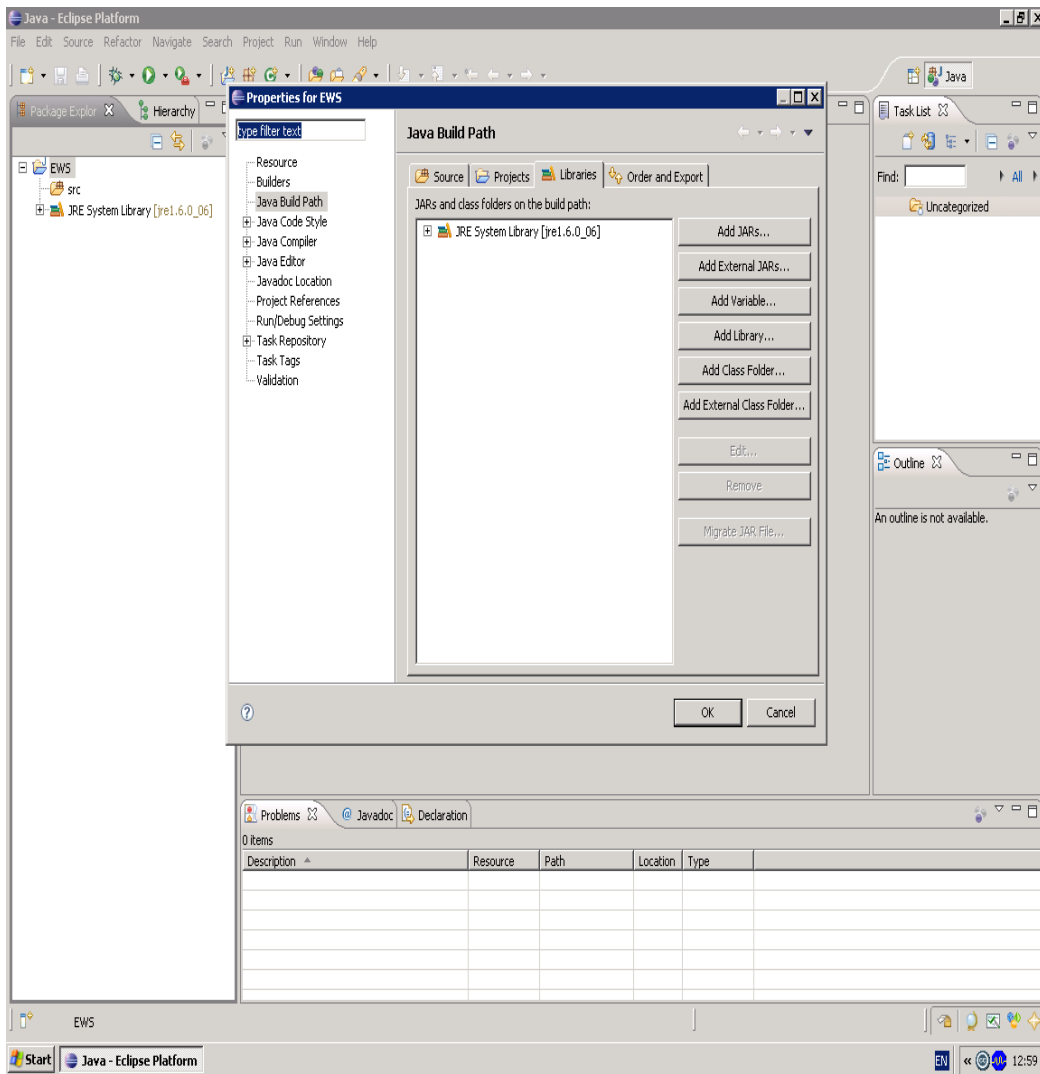
A new Java project will be created as shown below:



- 7) Select the Project that has been created.  
Right click on it.  
Select “Build path”-> Configure Build path.



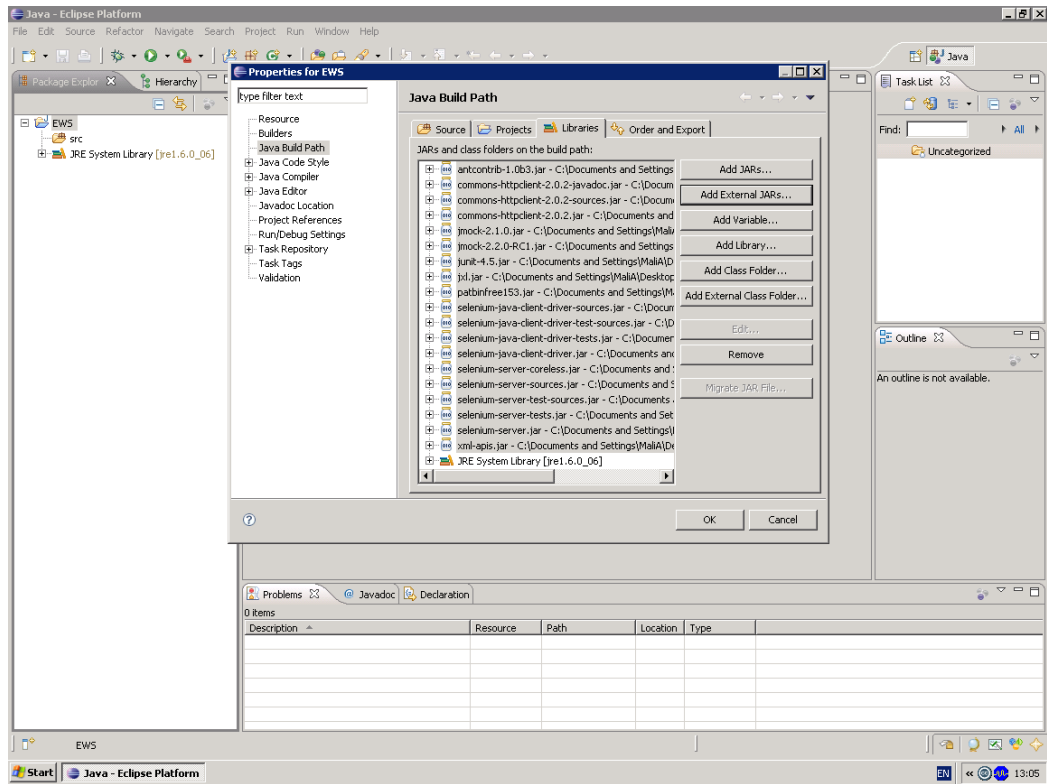
## 8) Click on “Libraries” tab.



9) Click on Add External jars.

Add the below mentioned jars.

- a. antcontrib-1.0b3.jar
- b. commons-httpclient-2.0.2.jar
- c. commons-httpclient-2.0.2-javadoc.jar
- d. commons-httpclient-2.0.2-sources.jar
- e. jmock-2.1.0.jar
- f. jmock-2.2.0-RC1.jar
- g. junit-4.5.jar
- h. jxl.jar
- i. patbinfree153.jar
- j. selenium-java-client-driver.jar
- k. selenium-java-client-driver-sources.jar
- l. selenium-java-client-driver-tests.jar
- m. selenium-java-client-driver-test-sources.jar
- n. selenium-server.jar
- o. selenium-server-coreless.jar
- p. selenium-server-sources.jar
- q. selenium-server-tests.jar
- r. selenium-server-test-sources.jar
- s. xml-apis.jar

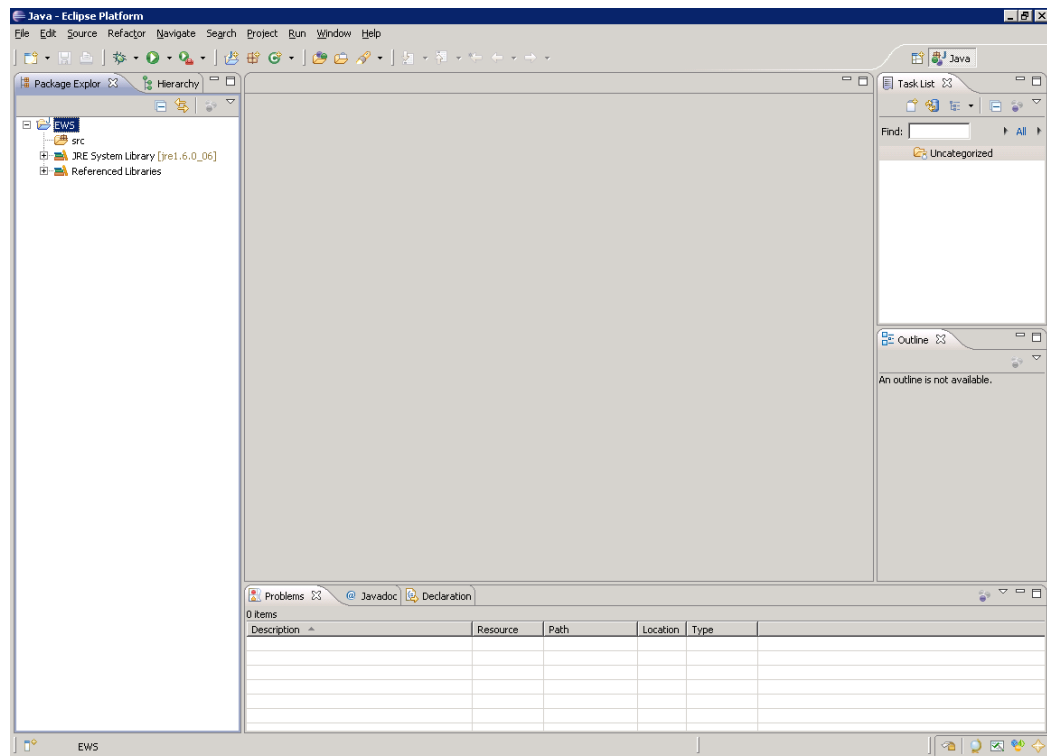


The screenshot shows the Eclipse IDE interface with the 'Properties for EWS' dialog box open. The 'Java Build Path' tab is active, displaying a list of JARs and class folders on the build path. The list includes various Selenium and JUnit dependencies, such as 'selenium-java-client-driver-test-sources.jar', 'selenium-server-sources.jar', and 'junit-4.5.jar'. The 'JRE System Library [jre1.6.0\_06]' is also listed at the bottom of the build path.

Below the dialog box, the 'Problems' tab is visible, showing a table with the following columns: Description, Resource, Path, Location, and Type. The table is currently empty, indicating no problems are present.

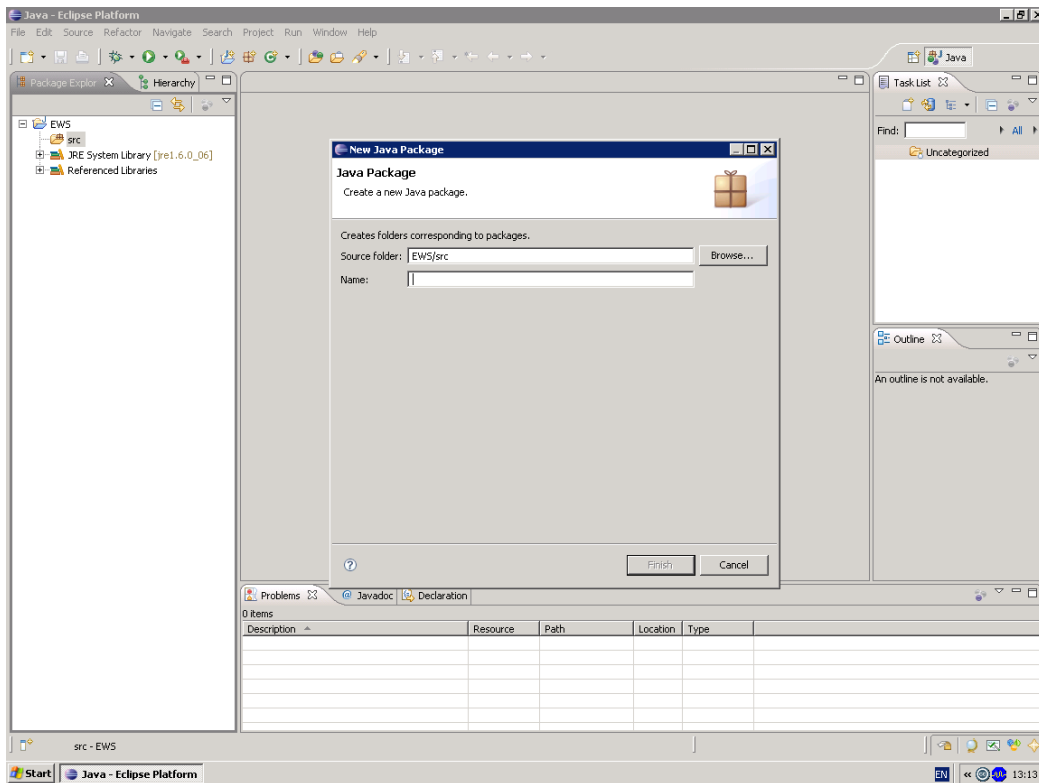
Description	Resource	Path	Location	Type

10) Click on OK button. Refer to the tree structure at the LHS.



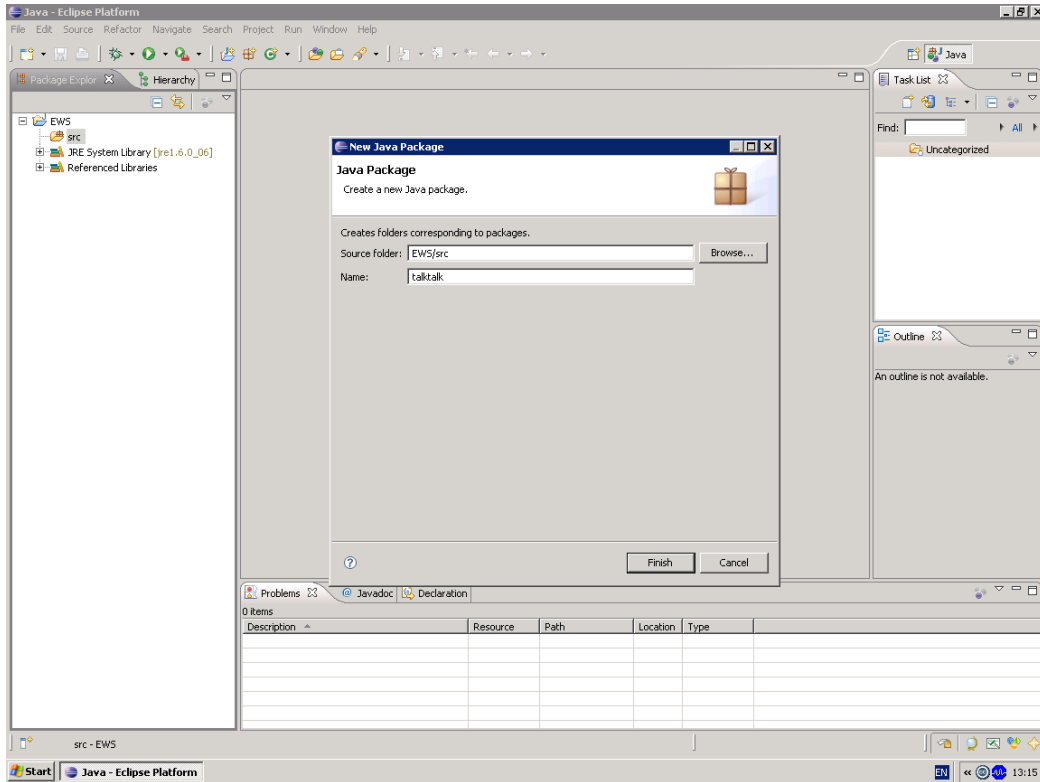
11) Right Click on Source folder (Src) that has been created.

Create a new Package.

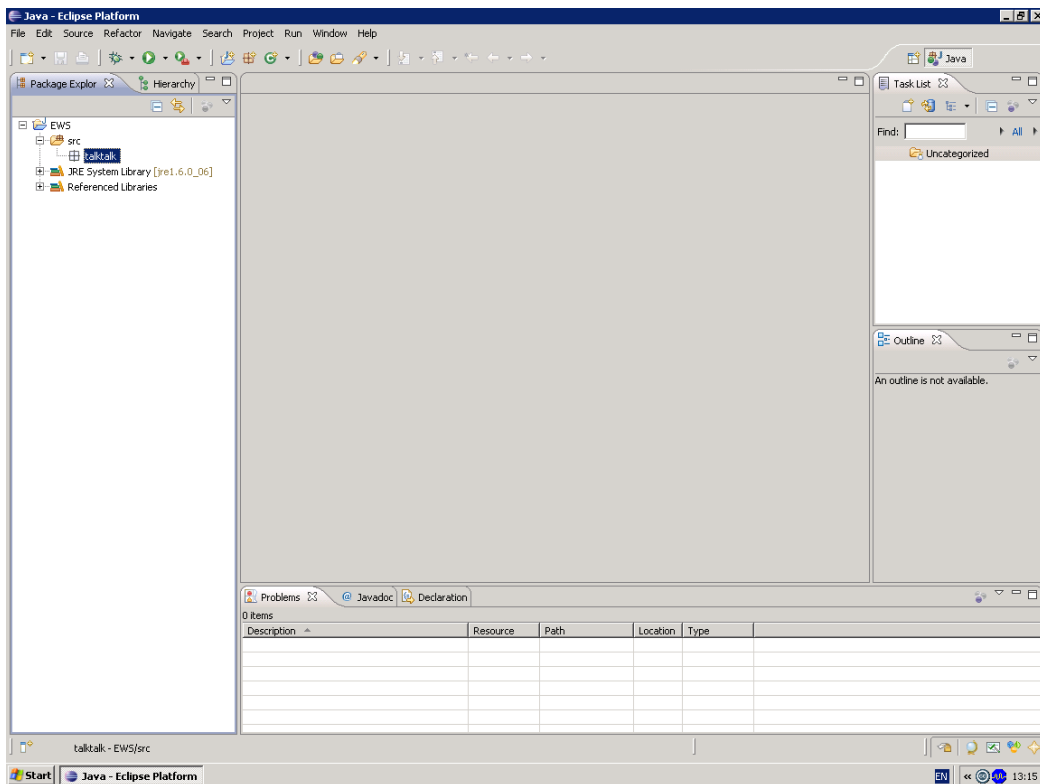


Mention the name of the package and click on Finish button.

SELL

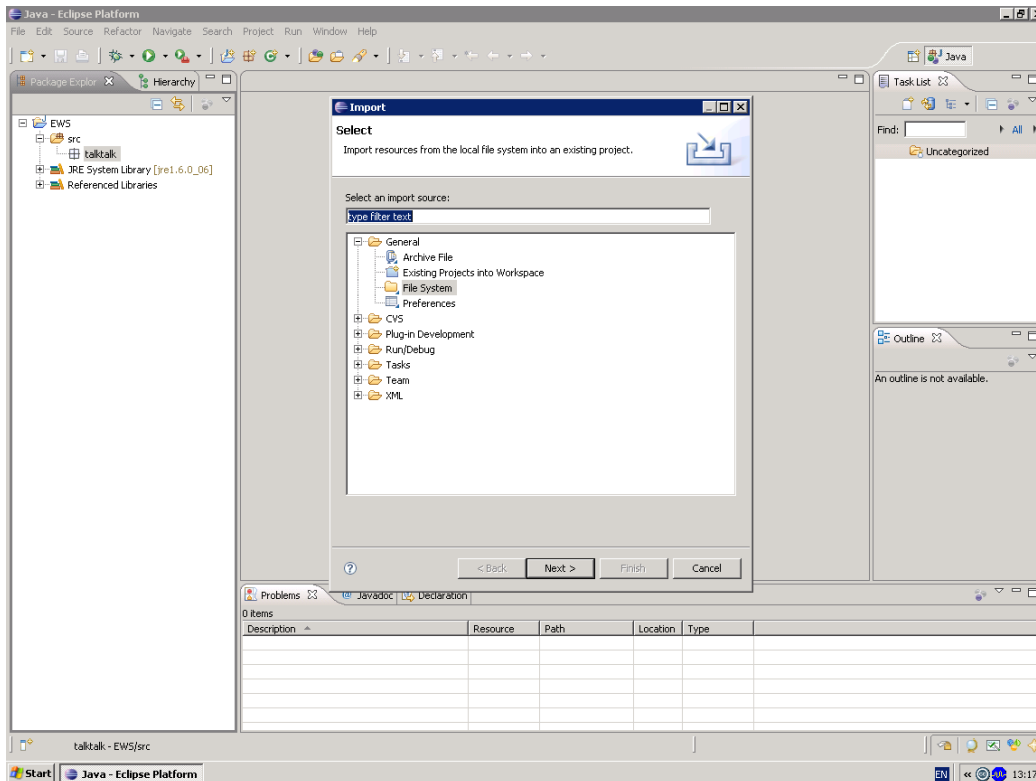


TalkTalk package has been created under Src folder.



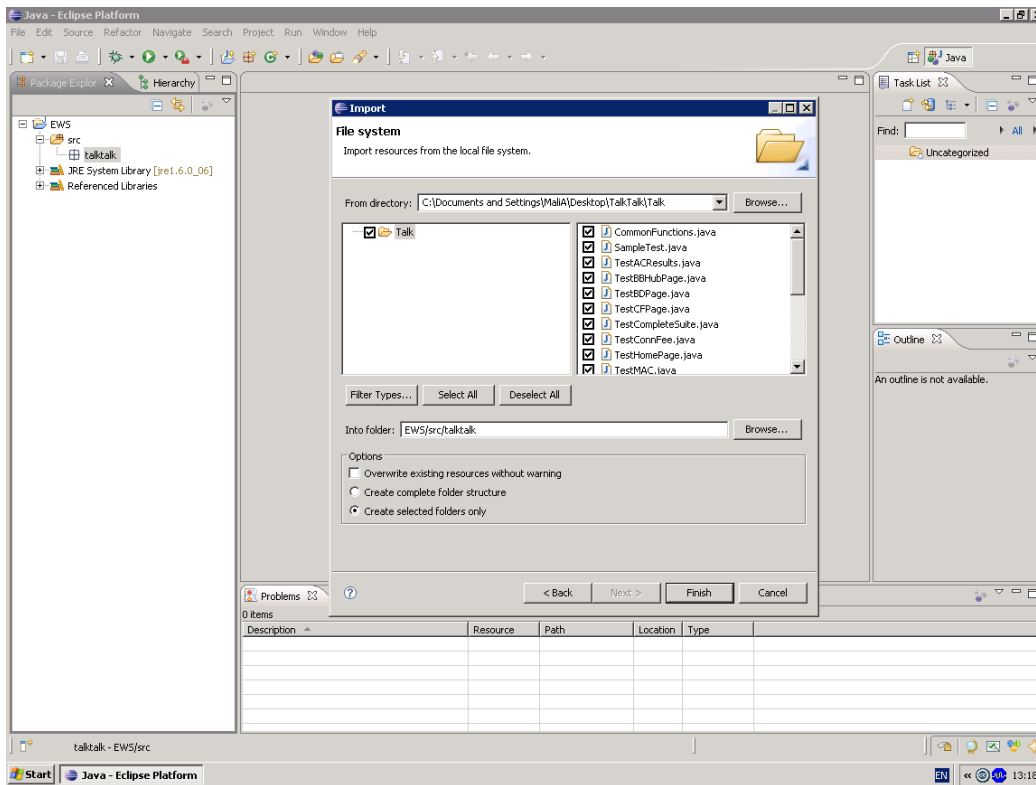
12) Import the Java files. Here we are importing the files related to EWS Talk Talk application.

Right click on the package and select the location from where we need to import the files.



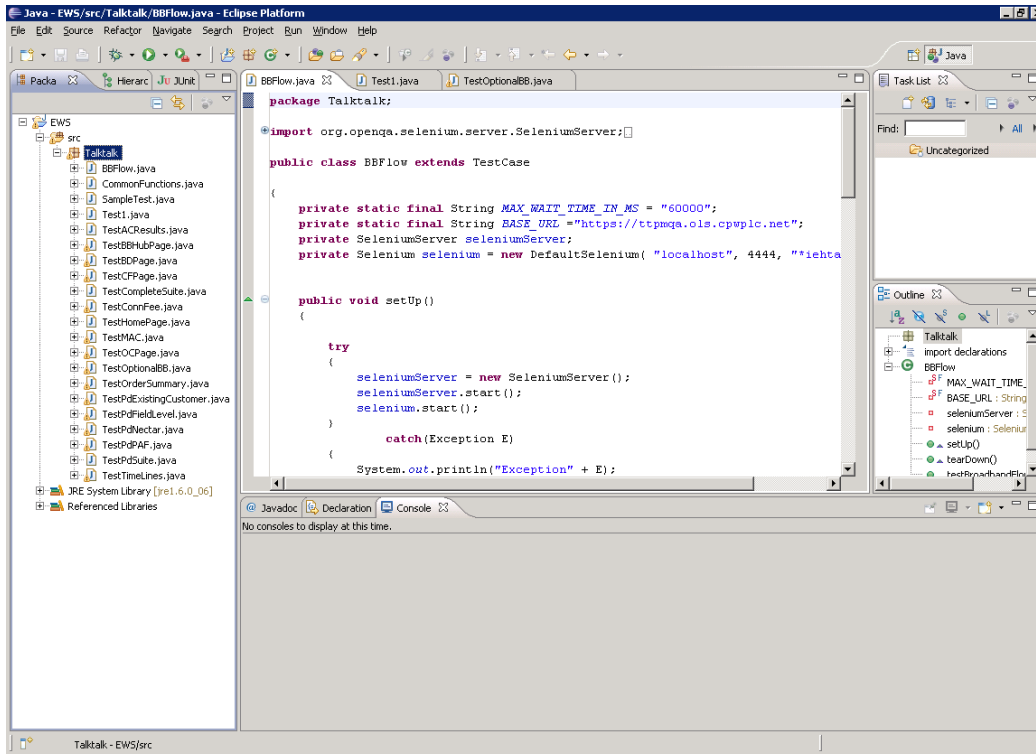
Click on Next button and select the files that need to be imported.





Click on Finish button. Double click on one of the .java file.

SELE



```
package Talktalk;

import org.openqa.selenium.server.SeleniumServer;

public class BBFlow extends TestCase
{
    private static final String MAX_WAIT_TIME_IN_MS = "60000";
    private static final String BASE_URL = "https://tppqa.ols.cpwpc.net";
    private SeleniumServer seleniumServer;
    private Selenium selenium = new DefaultSelenium("localhost", 4444, "*iehta

    public void setUp ()
    {
        try
        {
            seleniumServer = new SeleniumServer();
            seleniumServer.start();
            selenium.start();
        }
        catch(Exception E)
        {
            System.out.println("Exception" + E);
        }
    }
}
```

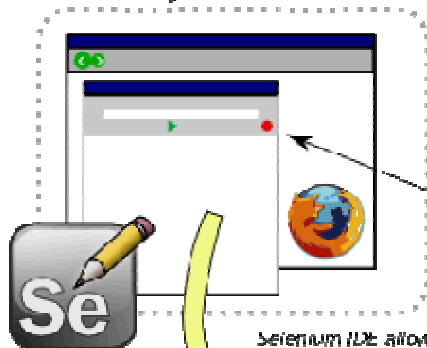
**Note:** The package name defined in the Java file should be same as the package that has been created.

SALE

# How Selenium Works?

## Selenium IDE

Firefox Plugin



Records and plays back tests in Firefox; a great way to get started writing tests.

Selenium IDE allows you export your tests to many programming languages, (including Ruby, PHP, Java, perl, C#, and Python) so you can tweak your tests and even put them into your existing testing framework.



Your tests

Your tests are made of a series of Selenium commands, which are sent to the Selenium Remote Control server or the Selenium Grid server.

## Selenium Remote Control

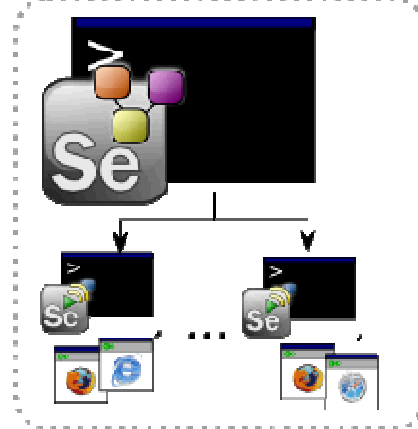
Java-based command line server



Selenium Remote Control starts up browsers (one at a time) and then runs commands you pass along from your tests

## Selenium Grid

Java-based command line server



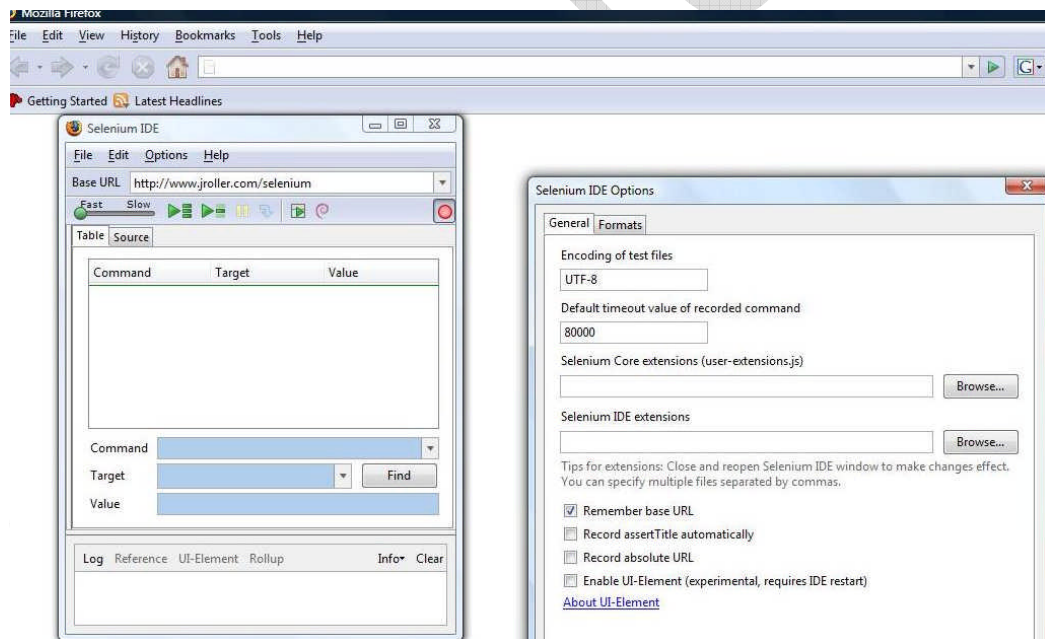
Selenium Grid coordinates multiple Selenium Remote Control servers so you can run tests on lots of platforms at the same time, which saves lots of time and allows wider testing.

# Selenium IDE

It is an integrated development environment for Selenium tests. It is implemented as a Firefox extension, and allows recording, editing, and debugging tests.

## Features

- Easy record and playback
- Intelligent field selection will use IDs, names, or XPath as needed
- Walk through tests
- Auto complete for all common Selenium commands
- Debug and set breakpoints
- Save tests as HTML, Ruby scripts, or any other format
- Support for Selenium *user-extensions.js* file
- Option to automatically assert the title of every page



## How to create a Test Plan in Selenium IDE:

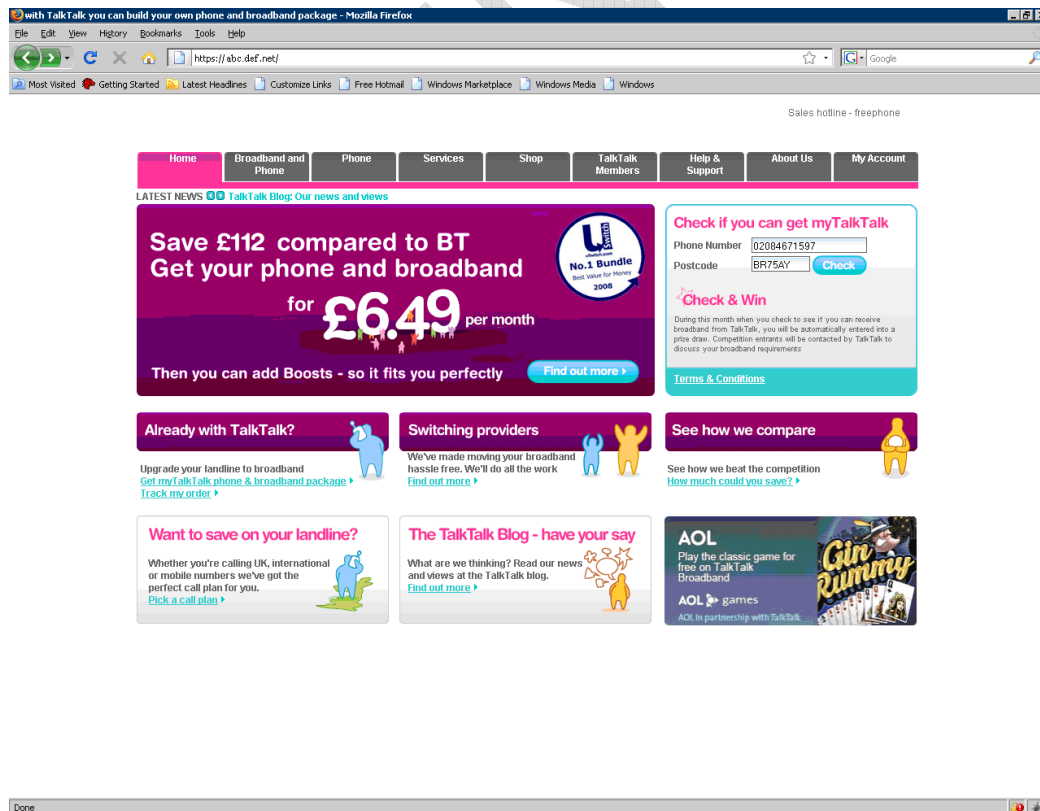
- Install **Selenium IDE 0.8.7**, a Firefox plug-in.
- After installing Selenium IDE, restart Firefox browser for the plug-in to be activated.
- New added menu item named **Selenium IDE** should appear under Firefox *Tools* menu.
- Open / browse the site for which we want to prepare a test case.
- Start Selenium IDE from Firefox *Tools*->*Selenium IDE*.
- Browse some pages.
- Now click **red** button to stop recording.

At this point, Selenium will automatically record the actions. We can create and insert our own commands/ modify or even delete them.

For Eg:

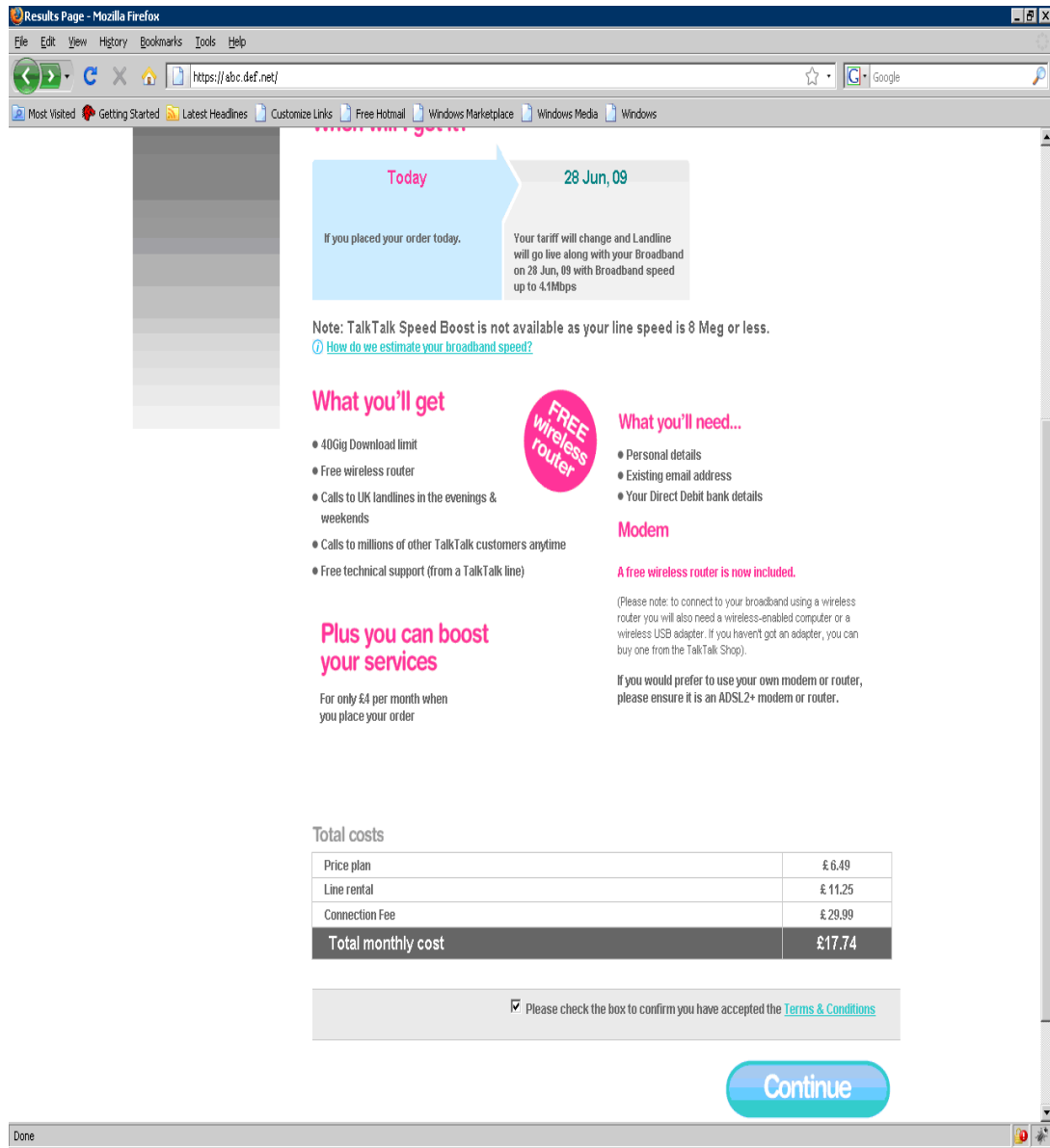
Here we have recorded few sessions using given website i.e. on Test environment. We have browsed few pages of the site as follow.

1. Browse the site – **https://abc.def.net**  
Enter Phone number & post code. Click on Check button.



The screenshot shows a Mozilla Firefox browser window with the title "with TalkTalk you can build your own phone and broadband package - Mozilla Firefox". The address bar contains "https://abc.def.net/". The website content includes a navigation menu with links like Home, Broadband and Phone, Phone, Services, Shop, TalkTalk Members, Help & Support, About Us, and My Account. The main content area features a large purple banner for "Save £112 compared to BT Get your phone and broadband for £6.49 per month". Below this are several promotional tiles: "Already with TalkTalk?", "Switching providers", "See how we compare", "Want to save on your landline?", "The TalkTalk Blog - have your say", and "AOL Give Rummy".

2. “What you’ll get” page should be displayed.  
Click on “Terms & Conditions” checkbox. Click on Continue button.



Results Page - Mozilla Firefox

File Edit View History Bookmarks Tools Help

https://abc.def.net/

Most Visited Getting Started Latest Headlines Customize Links Free Hotmail Windows Marketplace Windows Media Windows

**Today** 28 Jun, 09

If you placed your order today, Your tariff will change and Landline will go live along with your Broadband on 28 Jun, 09 with Broadband speed up to 41Mbps

Note: TalkTalk Speed Boost is not available as your line speed is 8 Meg or less.  
[How do we estimate your broadband speed?](#)

**What you'll get**

- 40Gig Download limit
- Free wireless router
- Calls to UK landlines in the evenings & weekends
- Calls to millions of other TalkTalk customers anytime
- Free technical support (from a TalkTalk line)

**What you'll need...**

- Personal details
- Existing email address
- Your Direct Debit bank details

**Modem**

**A free wireless router is now included.**

(Please note: to connect to your broadband using a wireless router you will also need a wireless-enabled computer or a wireless USB adapter. If you haven't got an adapter, you can buy one from the TalkTalk Shop).

If you would prefer to use your own modem or router, please ensure it is an ADSL2+ modem or router.

**Plus you can boost your services**

For only £4 per month when you place your order

**Total costs**

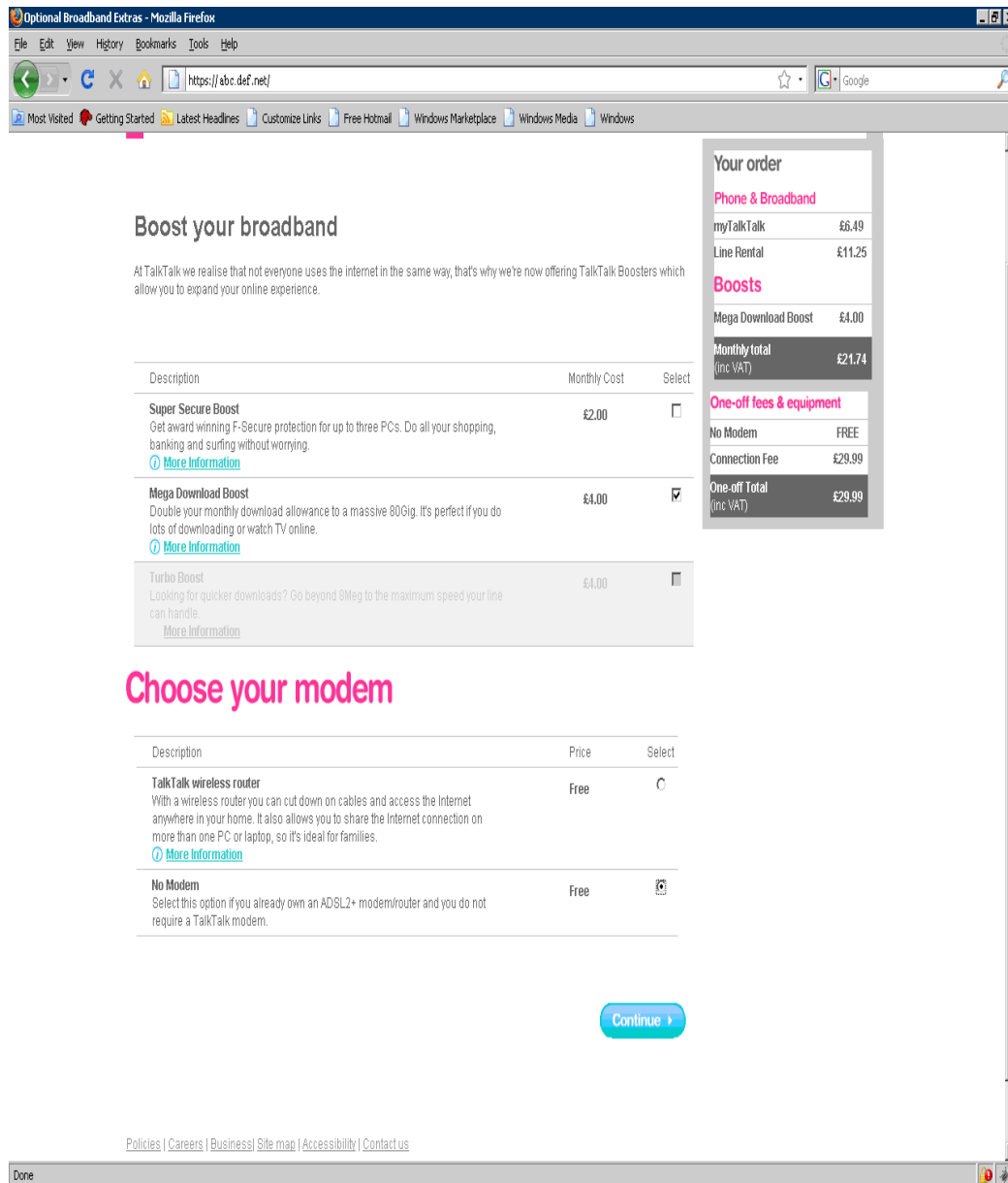
Price plan	£ 6.49
Line rental	£ 11.25
Connection Fee	£ 29.99
<b>Total monthly cost</b>	<b>£17.74</b>

Please check the box to confirm you have accepted the [Terms & Conditions](#)

**Continue**

Done

3. **Optional Broadband** page should be displayed.  
Choose any of the boosters and modem.  
Click on Continue button.



**Optional Broadband Extras - Mozilla Firefox**

File Edit View History Bookmarks Tools Help

Address bar: <https://abc.def.net/>

Search: Google

Most Visited Getting Started Latest Headlines Customize Links Free Hotmail Windows Marketplace Windows Media Windows

## Boost your broadband

At TalkTalk we realise that not everyone uses the internet in the same way, that's why we're now offering TalkTalk Boosters which allow you to expand your online experience.

Description	Monthly Cost	Select
<b>Super Secure Boost</b> Get award winning F-Secure protection for up to three PCs. Do all your shopping, banking and surfing without worrying. <a href="#">More Information</a>	£2.00	<input type="checkbox"/>
<b>Mega Download Boost</b> Double your monthly download allowance to a massive 80Gig. It's perfect if you do lots of downloading or watch TV online. <a href="#">More Information</a>	£4.00	<input checked="" type="checkbox"/>
<b>Turbo Boost</b> Looking for quicker downloads? Go beyond 8Meg to the maximum speed your line can handle. <a href="#">More Information</a>	£4.00	<input type="checkbox"/>

## Choose your modem

Description	Price	Select
<b>TalkTalk wireless router</b> With a wireless router you can cut down on cables and access the Internet anywhere in your home. It also allows you to share the Internet connection on more than one PC or laptop, so it's ideal for families. <a href="#">More Information</a>	Free	<input type="radio"/>
<b>No Modem</b> Select this option if you already own an ADSL2+ modem/router and you do not require a TalkTalk modem.	Free	<input checked="" type="radio"/>

[Continue](#)

Policies | Careers | Business | Site map | Accessibility | Contact us

Done

### Your order

**Phone & Broadband**

myTalkTalk	£6.49
Line Rental	£11.25

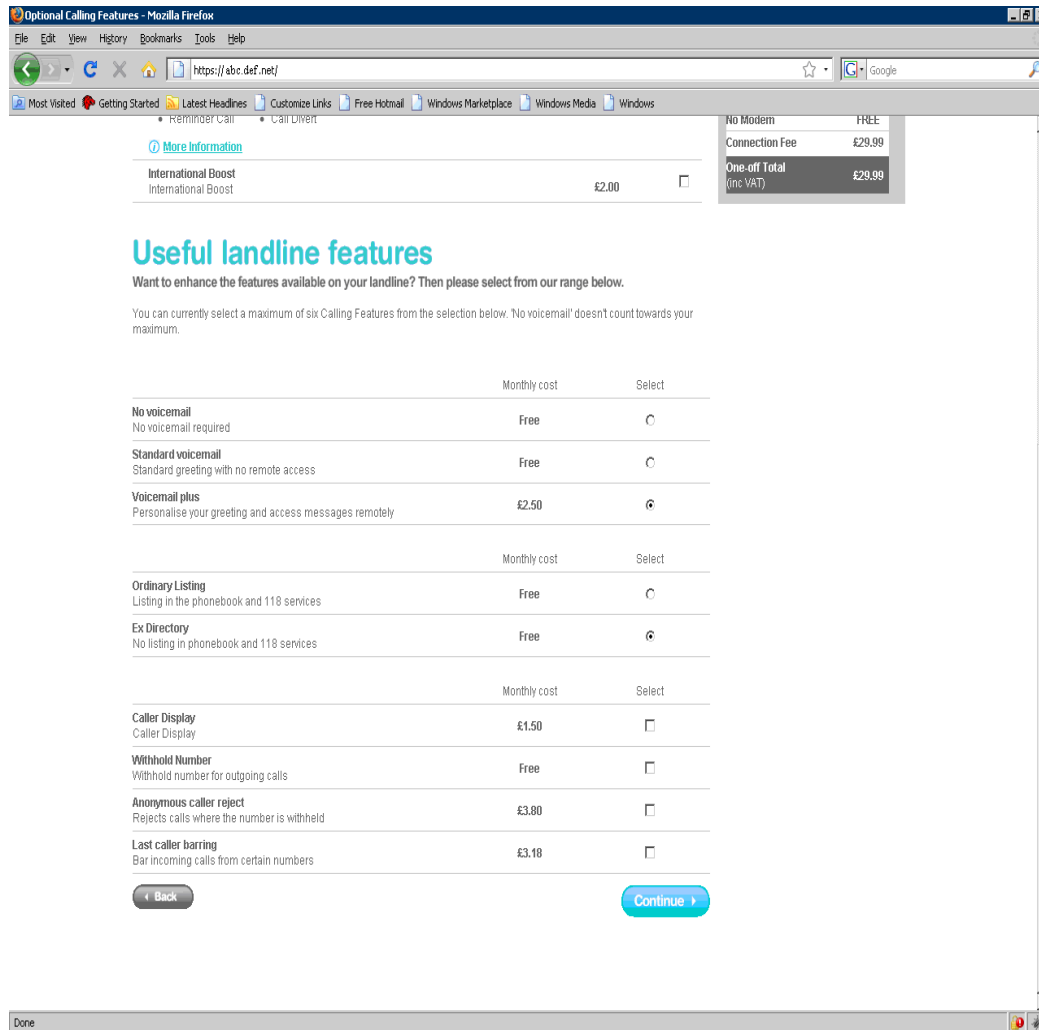
**Boosts**

Mega Download Boost	£4.00
<b>Monthly total (inc VAT)</b>	<b>£21.74</b>

**One-off fees & equipment**

No Modem	FREE
Connection Fee	£29.99
<b>One-off Total (inc VAT)</b>	<b>£29.99</b>

4. **Calling Features** page should be displayed  
Select some calling features on the page & click on Continue button.



**Optional Calling Features - Mozilla Firefox**

File Edit View History Bookmarks Tools Help

https://abc.def.net/

Most Visited Getting Started Latest Headlines Customize Links Free HTML Windows Marketplace Windows Media Windows

REMINDER Call Call DIVER

No Modem	FREE
Connection Fee	£29.99
<b>One-off Total (inc. VAT)</b>	<b>£29.99</b>

[More Information](#)

**International Boost**  
International Boost £2.00

### Useful landline features

Want to enhance the features available on your landline? Then please select from our range below.

You can currently select a maximum of six Calling Features from the selection below. 'No voicemail' doesn't count towards your maximum.

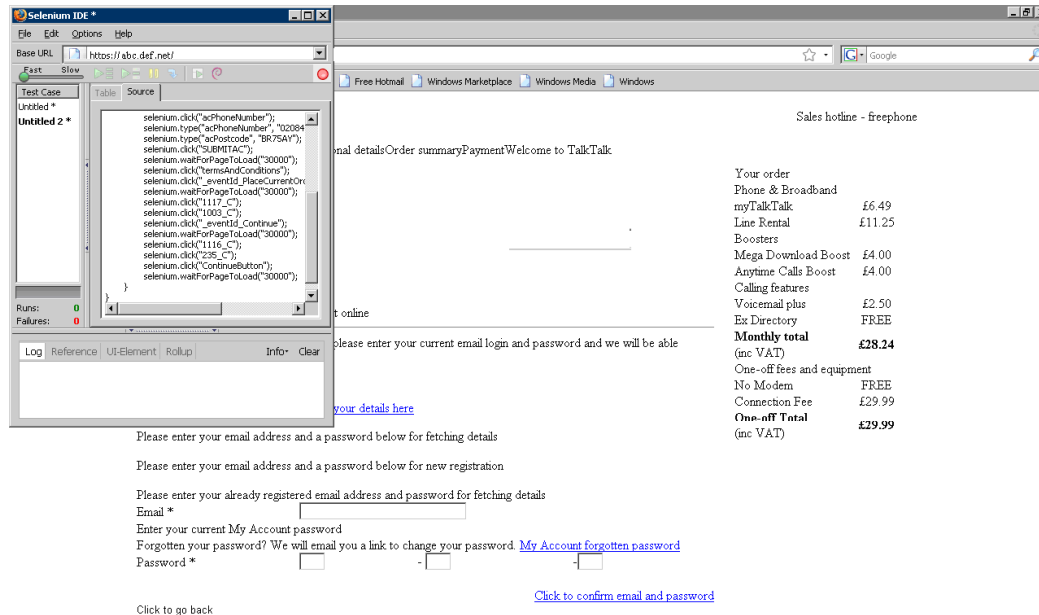
	Monthly cost	Select
<b>No voicemail</b> No voicemail required	Free	<input type="radio"/>
<b>Standard voicemail</b> Standard greeting with no remote access	Free	<input type="radio"/>
<b>Voicemail plus</b> Personalise your greeting and access messages remotely	£2.50	<input checked="" type="radio"/>

	Monthly cost	Select
<b>Ordinary Listing</b> Listing in the phonebook and 118 services	Free	<input type="radio"/>
<b>Ex Directory</b> No listing in phonebook and 118 services	Free	<input checked="" type="radio"/>

	Monthly cost	Select
<b>Caller Display</b> Caller Display	£1.50	<input type="checkbox"/>
<b>Withhold Number</b> Withhold number for outgoing calls	Free	<input type="checkbox"/>
<b>Anonymous caller reject</b> Rejects calls where the number is withheld	£3.80	<input type="checkbox"/>
<b>Last caller barring</b> Bar incoming calls from certain numbers	£3.18	<input type="checkbox"/>

Done

## 5. Personal Details page should be displayed.



The screenshot shows Selenium IDE on the left with a recorded script for navigating to the Personal Details page. The script includes actions like clicking on phone number, post code, and submit buttons, and waiting for page loads. On the right, a browser window displays the Personal Details page with a form for registration and a list of services and their prices.

**Personal Details Page Content:**

Sales hotline - freephone

Personal details Order summary Payment Welcome to TalkTalk

Your order

Phone & Broadband	
myTalkTalk	£6.49
Line Rental	£11.25
Boosters	
Mega Download Boost	£4.00
Anytime Calls Boost	£4.00
Calling features	
Voice mail plus	£2.50
Ex Directory	FREE
<b>Monthly total</b>	<b>£28.24</b>
(inc VAT)	
One-off fees and equipment	
No Modem	FREE
Connection Fee	£29.99
<b>One-off Total</b>	<b>£29.99</b>
(inc VAT)	

Please enter your email address and a password below for fetching details

Please enter your email address and a password below for new registration

Please enter your already registered email address and password for fetching details

Email \*

Enter your current My Account password

Forgotten your password? We will email you a link to change your password. [My Account forgotten password](#)

Password \*

[Click to confirm email and password](#)

[Click to go back](#)

After recording, click on “Options” menu & choose Format Java – Selenium RC. Then recorded script will be converted into Java scripts as follow. Else, export the file as Java file by navigating **File->Export Test As->Java - Selenium RC**

### Sample script:

```
Package com.example.tests;
```

```
import com.thoughtworks.selenium.*;  
import java.util.regex.Pattern;
```

```
public class NewTest extends SeleneseTestCase  
{  
    public void setUp() throws Exception  
    {  
        setUp("https://abc.def.net/", "*chrome");  
    }  
    public void testNew() throws Exception  
    {  
        selenium.open("/");  
        selenium.click("acPhoneNumber");  
        selenium.click("acPhoneNumber");  
        selenium.type("acPhoneNumber", "02084671597");  
        selenium.type("acPostcode", "BR75AY");  
        selenium.click("SUBMITAC");  
        selenium.waitForPageToLoad("30000");  
        selenium.click("termsAndConditions");  
        selenium.click("_eventId_PlaceCurrentOrder");  
        selenium.waitForPageToLoad("30000");  
        selenium.click("1117_C");  
        selenium.click("1003_C");  
        selenium.click("_eventId_Continue");  
        selenium.waitForPageToLoad("30000");  
        selenium.click("1116_C");  
        selenium.click("235_C");  
        selenium.click("ContinueButton");  
        selenium.waitForPageToLoad("30000");  
    }  
}
```

We need to modify the script using commands and use the same for Selenium RC.

## *Selenium Remote Control (RC)*

Selenium Remote Control (RC) is a test tool that allows you to write automated web application UI tests in any programming language against any HTTP website using any mainstream JavaScript-enabled browser.

Selenium RC comes in two parts.

1. A server which automatically launches and kills browsers, and acts as a HTTP proxy for web requests from them.
2. Client libraries for your favourite computer language.

The RC server also bundles Selenium Core, and automatically loads it into the browser.

It is also an ideal solution for users of Selenium Core or Selenium IDE who want to write tests in a more expressive programming language than the Selenium HTML table format customarily used with Selenium Core.

SELENIUM

## How does Selenium Remote control internally works?

Selenium RC launches the browser with itself as the proxy server (hence you may get certificate warning in some modes) and then it injects JavaScript - to play the test.

It can easily work in ALL browsers/platform.

## What are the different modes that Selenium RC uses?

With latest release of Selenium RC(1.0 beta 2) there are two modes for IE:

- 1) \*iexplore(same as \*iehta)
- 2) \*iexploreproxy

Similarly for Firefox:

- 1) \*firefox(same as \*chrome)
- 2) \*firefoxproxy

**Note:** Prefer \*iexplore (i.e. \*iehta) and \*firefox (i.e. \*chrome) respectively as they work with cross domain.

## *RC Commands*

### What is a Command?

A command is what tells Selenium what to do. Each command call is one line in the test table of the form.

Entered as:

| command | target | value |

Rendered in the UI as:

command target value

Selenium commands come in three 'flavours' - Action, Accessor and Assertion.

Actions are commands that generally manipulate the state of the application. They do things like "click this link" and "select that option". If an Action fails, or has an error, the execution of the current test is stopped.

Many Actions can be called with the "AndWait" suffix (e.g. "clickAndWait"). This suffix tells Selenium that the action will cause the browser to make a call to the server, and that Selenium should wait for a new page to load.

Accessors examine the state of the application and store the results in variables, e.g. "storeTitle". They are also used to automatically generate Assertions.

Assertions are like Accessors, but they verify that the state of the application conforms to what is expected. Examples include "make sure the page title is X" and "verify that this checkbox is checked".

### Some useful commands:

- **Open** - Opens an URL in the test frame. This accepts both relative and absolute URLs. The "open" command waits for the page to load before proceeding.
- **Type** - Sets the value of an input field, as typed in. It can also be used to set the value of combo boxes, check boxes, etc.
- **Click** - Clicks on a link, button, checkbox or radio button. If the click action causes a new page to load (like a link usually does), call `waitForPageToLoad`.
- **ClickAndWait** – Click & wait for sometime to load the next page.
- **Select** - Select an option from a drop-down using an option locator.
- **Close** - Simulates the user to click the "close" button in the titlebar of a popup window or tab.
- **Echo** - Prints the specified message. Useful for debugging.
- **waitForPageToLoad** - Setting time to load the page completely.
- **verifyText** – Verify the text available is right or wrong.
- **verifyEditable** – Verify if the text box is editable or not.
- **storeAllButtons** - Returns the IDs of all buttons on the page.
- **Pause** - Wait for the specified amount of time (in milliseconds).

## *RC steps*

- Record your test case using Selenium IDE.
- Play your test case using Selenium IDE itself to make sure that your test case works. Modify the recorded code if necessary.
- Export your recording test case - as html file and/or optionally in programming languages like java, perl etc.
- Here we are saving the Test case as .Java file.
- Run your exported test case in programming like java by using tools like Eclipse.

Resolve errors if any.

### **Nine important tips for Selenium Remote Control java client test tool:**

- To run the Java client you need to only have selenium-java-client-driver.jar (located in selenium-remote-control-1.0-beta-1/selenium-java-client-driver-1.0-beta-1) in your class path.
- Ensure at least you have the following import statements:  
`import com.thoughtworks.selenium.*;`  
`import junit.framework.*;`  
`import java.util.regex.Pattern;`
- Ensure that the saved file name matches the generated class file name.
- Remove the package statement or replace it with your own package statement. Initially just remove it.

### How to start Selenium server:

```
public void setUp()
{
    System.out.println("in set up");
    try{
        seleniumServer = new seleniumServer();
        seleniumServer.start();
        selenium.start();
    } catch(Exception E){
        System.out.println("Exception" + E);
    }
}
```

### How to stop Selenium server:

```
public void tearDown() {
    try{
        selenium.stop();
        seleniumServer.stop();
    } catch (Exception E) {
        System.out.println("Exception While tearing.... " + E);
    }
}
```

Note: Declare Selenium server before.

## *Selenium RC Test script*

URL: <https://abc.def.net>

Description: Script to show modems available in Optional Broadband page of given site.

Code:

```
package Talktalk;
import org.openqa.selenium.server.seleniumServer;
import com.thoughtworks.selenium.Defaultselenium;
import com.thoughtworks.selenium.selenium;
import junit.framework.TestCase;

public class TestOptionalBB extends CommonFunctions
{
    private static final String MAX_WAIT_TIME_IN_MS = "60000";
    private final String BASE_URL = "https://abc.def.net";
    private seleniumServer seleniumServer;
    public selenium selenium = new Defaultselenium("localhost", 4444, "*iehta",
BASE_URL);
    public void setUp()
    {
        System.out.println("in set up");
        try{
            seleniumServer = new seleniumServer();
            seleniumServer.start();
            selenium.start();
        } catch(Exception E){
            System.out.println("Exception" + E);
        }
    }
    public void tearDown() {
        try{
            selenium.stop();
            seleniumServer.stop();
        } catch (Exception E) {
            System.out.println("Exception While tearing.... " + E);
        }
    }

    public void testOptBroadband()
    {
        String CLI = "01206845345";
        String PostCode = "CO4 9BA";
        selenium.open(BASE_URL);
        selenium.type("acPhoneNumber",CLI);
        selenium.type("acPostcode", PostCode);
    }
}
```

```
selenium.click("xpath=/html/body//input[@name=\"SUBMITAC\"]");
selenium.waitForPageToLoad(getDelay());
selenium.check("xpath=//*[@id=\"termsAndConditions\"]");
selenium.click("_eventId_PlaceCurrentOrder");
selenium.waitForPageToLoad(getDelay());

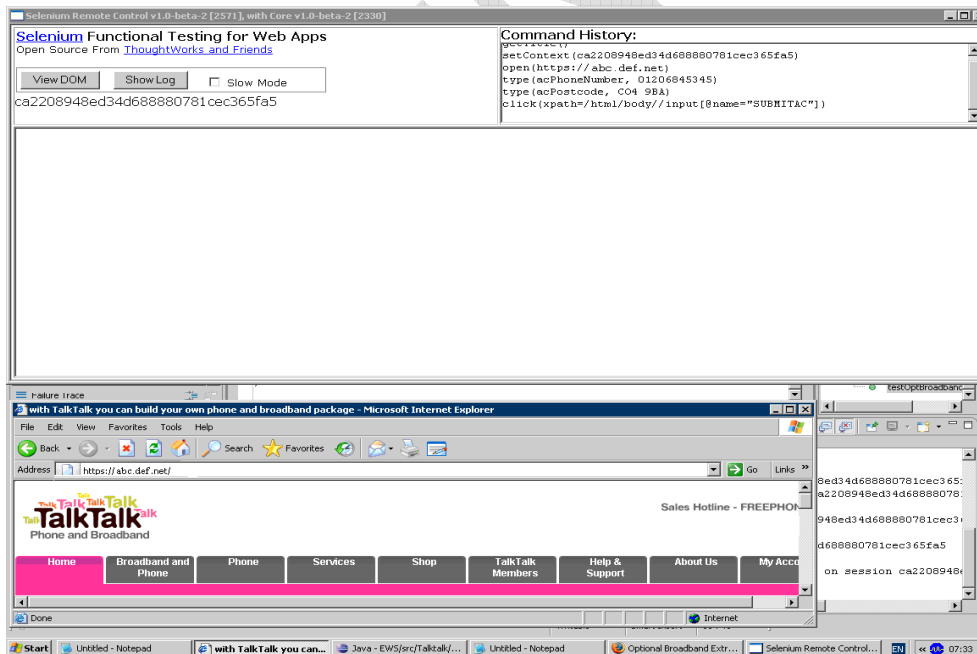
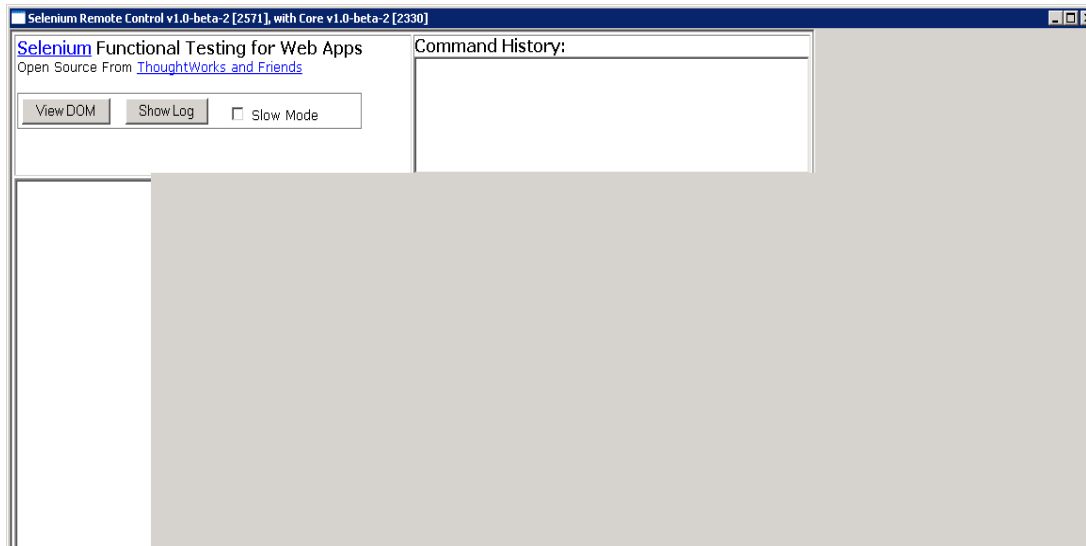
selenium.click("xpath=//*[@id=\"1003_C\"]");
String ActualText = selenium.getText("xpath=//*[@id=\"RB_Wrapper\"]");
String ExpectedText = "No Modem" + "\n" + "Free";
assertEquals(ActualText.contains(ExpectedText), false);

selenium.click("xpath=//*[@id=\"1001_C\"]");
ActualText = selenium.getText("xpath=//*[@id=\"RB_Wrapper\"]");
ExpectedText = "TalkTalk wireless router" + "\n" + "FREE";
assertEquals(ActualText.contains(ExpectedText), false);

selenium.click("_eventId_Continue");
selenium.waitForPageToLoad(getDelay());
assertEquals(selenium.getTitle(), "Optional Calling Features");
}
}
```

# How to Run Test case

1. Right click on the Test case and Run as Junit Test case.



Optional Broadband Extras - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Refresh Home Search Favorites

Address <https://abc.def.net/> Go





Sales Hotline - FREEPHONE  
**0800 049 7802**

**Broadband features** Calling features Personal details Order Summary Payment Welcome to TalkTalk

## Boost your broadband

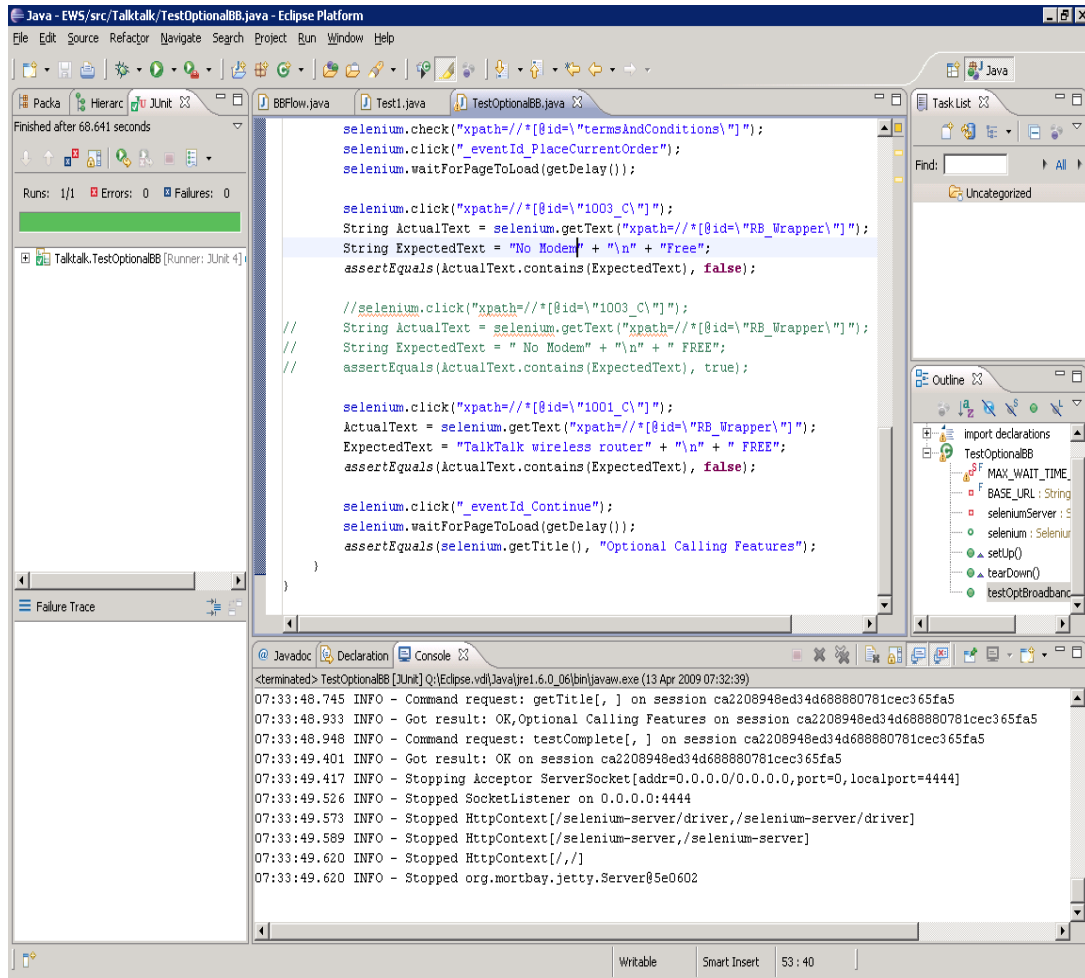
At TalkTalk we realise that not everyone uses the internet in the same way, that's why we're now offering TalkTalk Boosters which allow you to expand your online experience.

	Description	Monthly Cost	Select
	<b>Security Boost</b> Get award winning F-Secure protection for up to three PCs. Do all your shopping, banking and surfing without worrying.	£4.00	<input type="checkbox"/>
	<b>Download Plus</b> Double your monthly download allowance to a massive 80Gig. It's perfect if you do lots of downloading or watch TV online.	£4.00	<input type="checkbox"/>

### Your order

Phone & Broadband	
myTalkTalk	£6.49
Line Rental	£11.25
<b>Monthly total (inc VAT)</b>	<b>£17.74</b>
One-off fees & equipment	
Connection Fee	£29.99
<b>One-off Total (inc VAT)</b>	<b>£29.99</b>

SELECTED



The screenshot displays the Eclipse IDE interface with the following components:

- Editor:** Shows the source code for `TestOptionalBB.java`. The code includes Selenium WebDriver commands for clicking elements, retrieving text, and performing assertions. Key lines include:

```
selenium.click("xpath=//*[@id='termsAndConditions']");
selenium.click("_eventId_PlaceCurrentOrder");
selenium.waitForPageToLoad(getDelay());

selenium.click("xpath=//*[@id='1003_C']");
String ActualText = selenium.getText("xpath=//*[@id='RB_Wrapper']");
String ExpectedText = "No Modem" + "\n" + "Free";
assertEquals(ActualText.contains(ExpectedText), false);

//selenium.click("xpath=//*[@id='1003_C']");
//String ActualText = selenium.getText("xpath=//*[@id='RB_Wrapper']");
//String ExpectedText = "No Modem" + "\n" + "FREE";
//assertEquals(ActualText.contains(ExpectedText), true);

selenium.click("xpath=//*[@id='1001_C']");
ActualText = selenium.getText("xpath=//*[@id='RB_Wrapper']");
ExpectedText = "TalkTalk wireless router" + "\n" + "FREE";
assertEquals(ActualText.contains(ExpectedText), false);

selenium.click("_eventId_Continue");
selenium.waitForPageToLoad(getDelay());
assertEquals(selenium.getTitle(), "Optional Calling Features");
```
- JUnit Runner:** Shows the test execution progress: "Finished after 68.641 seconds", "Runs: 1/1", "Errors: 0", "Failures: 0".
- Outline:** Displays the package structure: `TestOptionalBB` with sub-elements like `MAX_WAIT_TIME`, `BASE_URL`, `seleniumServer`, `selenium`, `setUp()`, `tearDown()`, and `testOptBroadband`.
- Console:** Shows the Selenium server logs, including session IDs and status messages such as "Command request: getTitle", "Got result: OK, Optional Calling Features", and "Stopped SocketListener".

SELL

## *Benefits of using Selenium*

Selenium test scripts are portable, can be run from browsers (using Selenium IDE) or from JUnit or NUnit (using Selenium RC) etc.

For example, test scripts written using Selenium IDE in Firefox on Windows can run on Firefox in Mac or Linux, without changing any code.

Selenium tests run directly in browsers and so match the end-user experience closely.

There are two main issues that needs to be addressed while automating web applications involving flash objects -

- Verifying a certain value is set or it exists or not or in simple terms you need to 'get' certain properties of the object and compare it against your benchmarks
- Performing actions on an object or 'set' certain values.

These two issues could easily be handled by Selenium for most of the website objects except for Flash.