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Selenium An Effective Weapon In The Open Source Armory

Komal Joshi
Director: Atlantis Software Limited
Anand Ramdeo
Head of Quality Assurance: GCAP Media

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Agenda

- Introduction to Selenium
- Selenium IDE – Lets play
- Limitations of Selenium IDE
- Selenium RC – Play Again
- Ruby with Selenium RC
- Discussion / Questions

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What is Selenium?

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Selenium is…

- Test automation tool for web applications.
- Developed in Java Script.
- Can be used for most of the browser / platform combinations.
- Support many languages, including Ruby, Python, Java and so on.
- Free & Open Source !!!

Effect of Open Source on Selenium

- Selenium IDE
- Selenium Core
- Selenium Remote Control
- Selenium Grid

  User / developer community solving problems for most of us and making us more productive.

Why Learn Selenium?

To make this world a better place!!!

How??

Well tested web applications will result in less frustration for the end-users and will make them happy!!!

Learn Selenium Because..

- Web is becoming important.
- Desktop applications are slowly becoming history.
- Most of the Rich Web and AJAXified Applications involve Java Script.
- Selenium is the best tool for testing Java Script and Java Script interactions.

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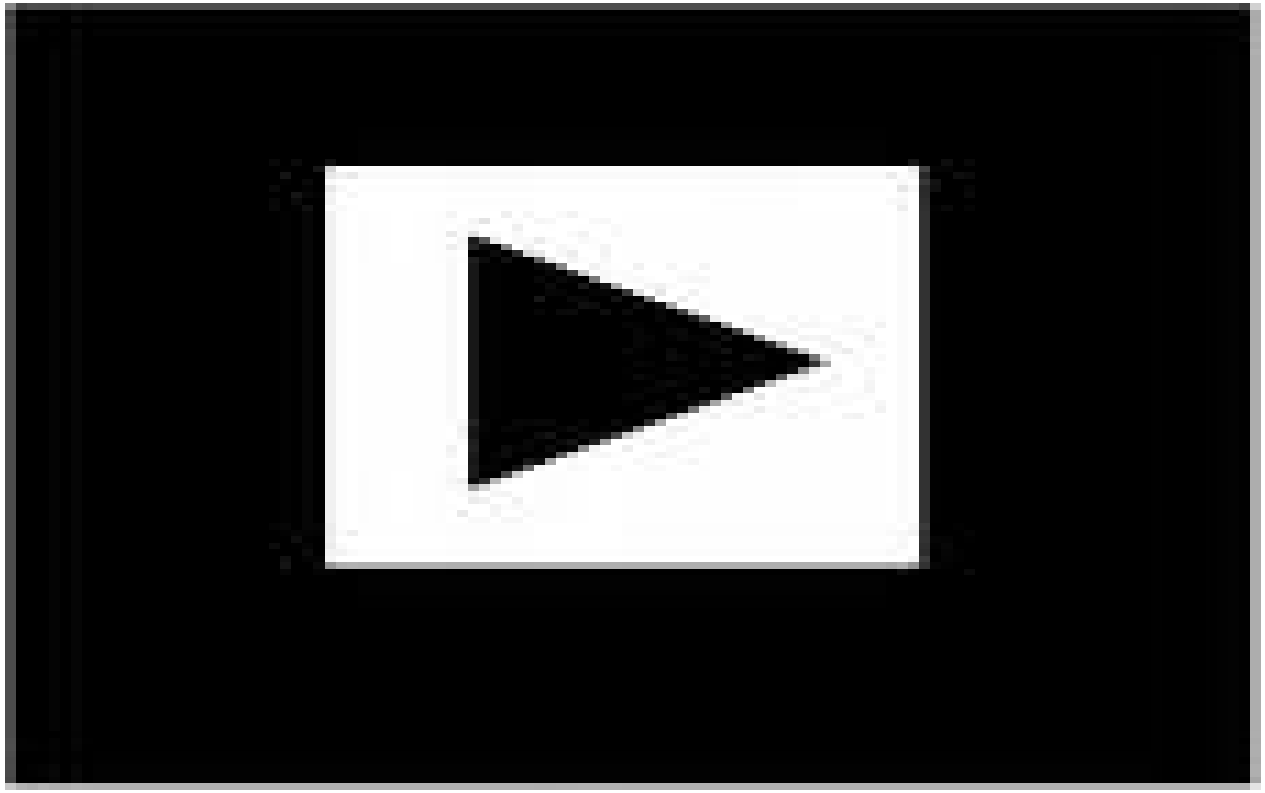
Let’s Play



Selenium IDE

- Firefox plug-in
- Integrated Development Environment for Selenium Tests.
- Provides record and playback functionality.
- Provides the ability to debug test scripts.
- Auto complete common selenium commands.
- Export tests in different formats like HTML, Ruby, Python and so on.
- Supports user extensions.

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Install & Start

- Download from - http://www.openqa.org
- Access

  Tools – Selenium IDE from Firefox browser toolbar.

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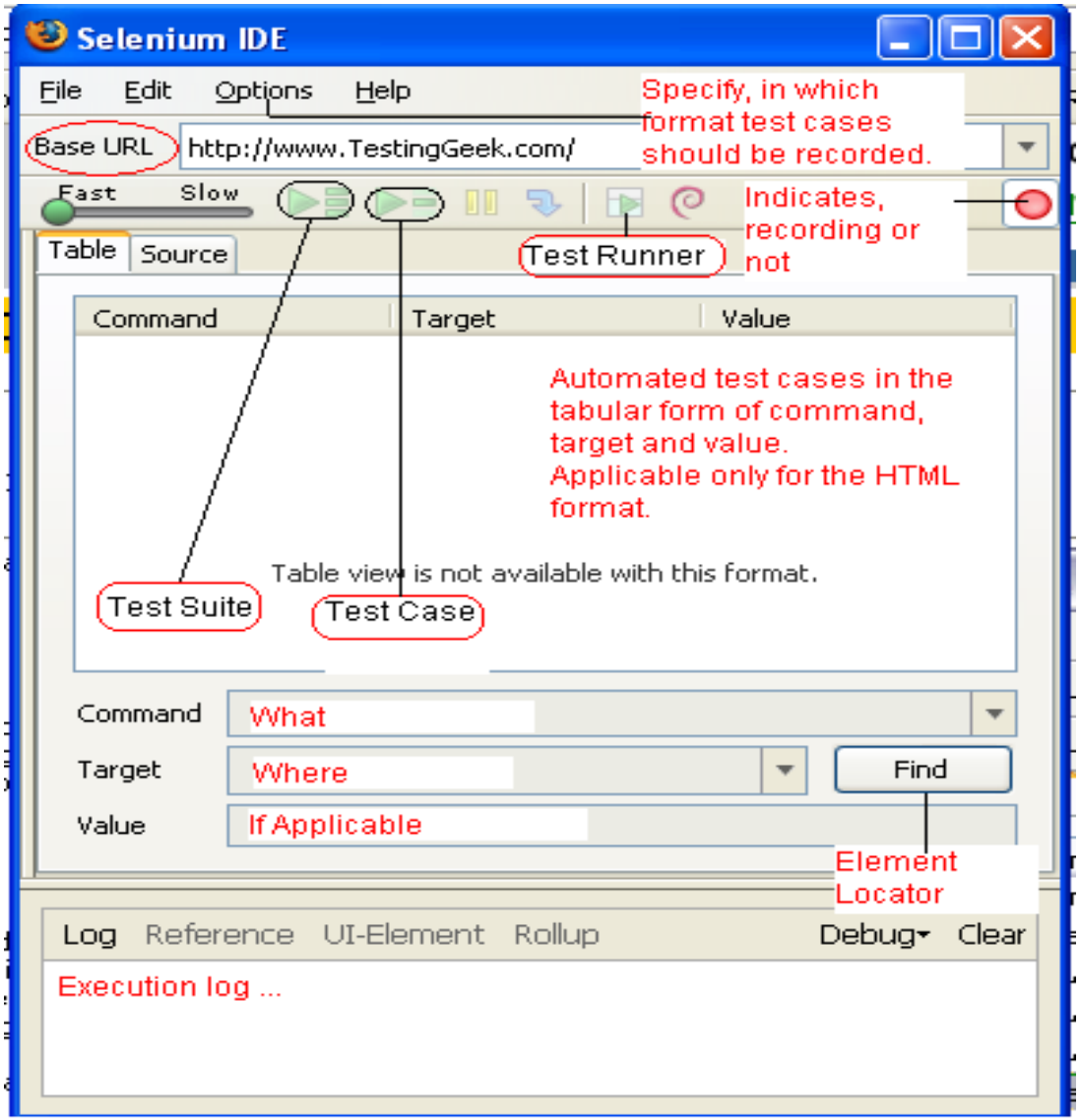
IDE Explained



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Exercise

Ensure that http://www.TestingGeek.com is the first link for Google search on “Testing Geek”

- Open http://www.google.co.uk in Firefox
- Open Selenium IDE, Tools – Selenium IDE
- Ensure that Selenium IDE is in recording mode.
- Type “Testing Geek” in the Google search bar and click Search
- On the search results verify that
  - “Software Testing - Geek” is present at the first place.
- Save the test case as google_ide
- Run the saved test case back again using the IDE.
- View the results back in the IDE

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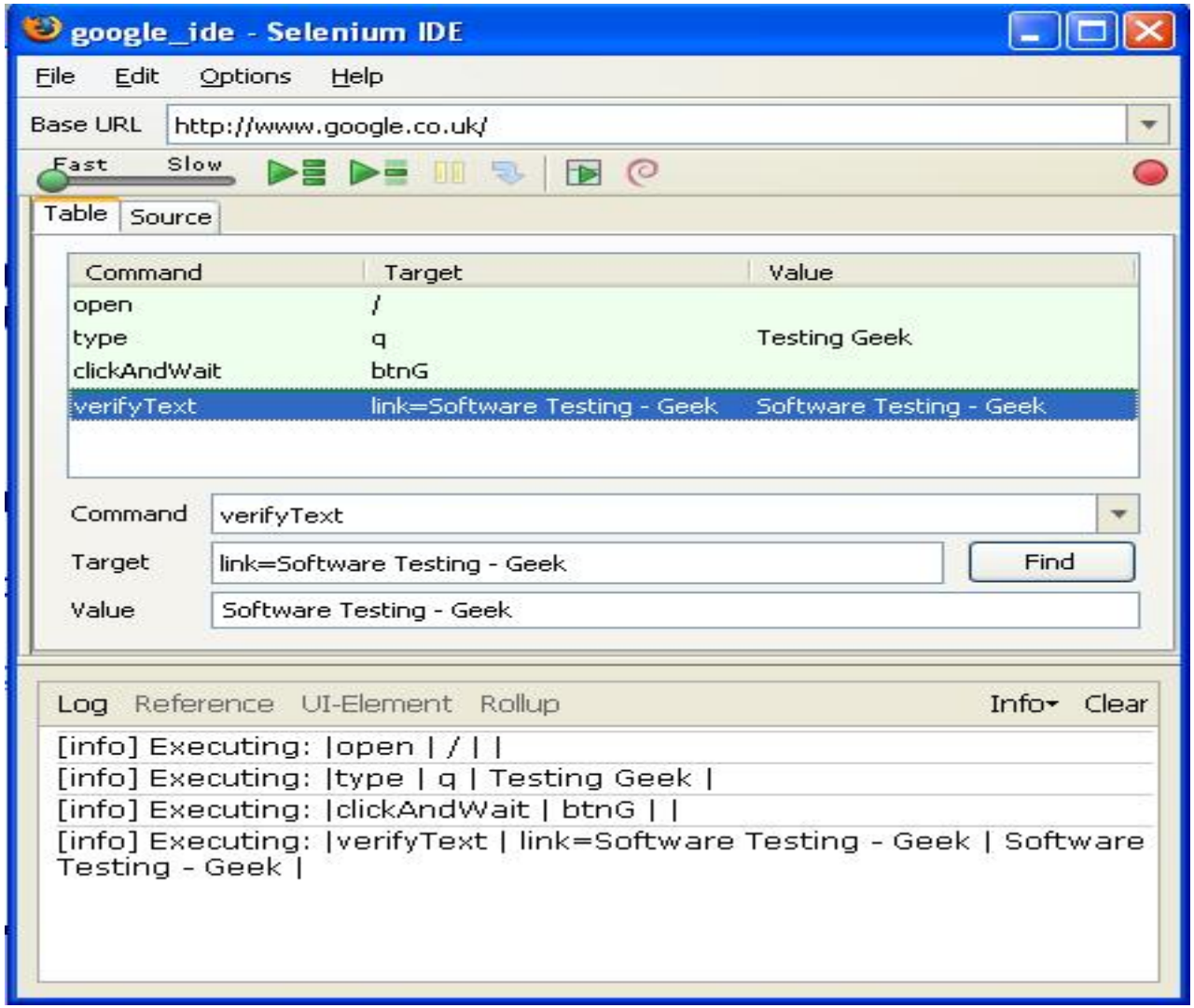
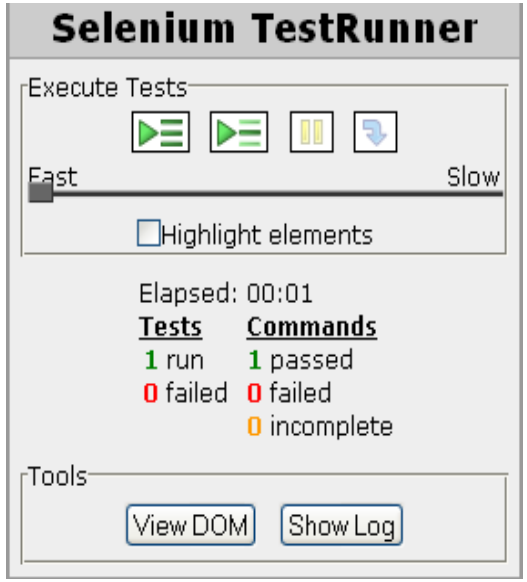
Selenium IDE contd..

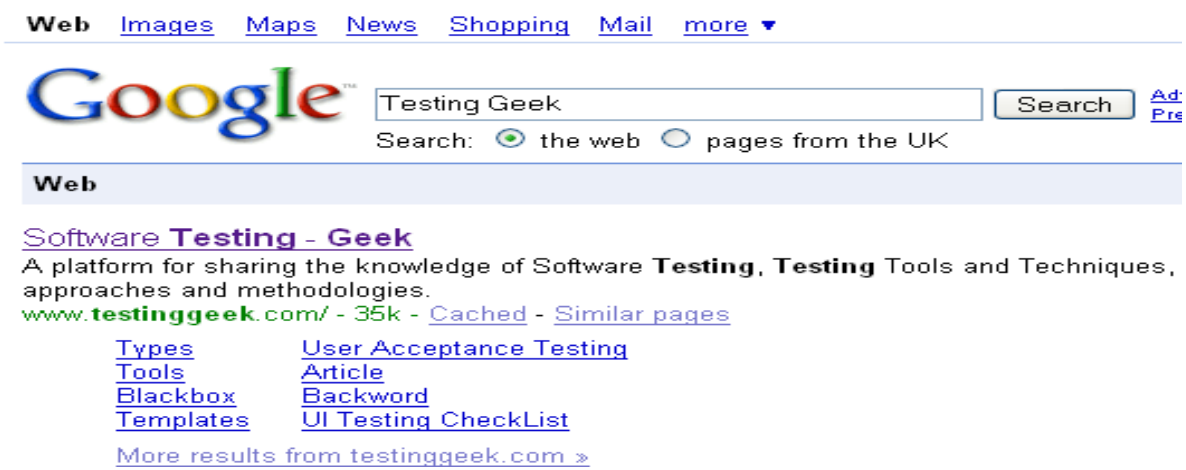


Test Runner

Test Suite
google_ide

google_ide		
open	/	
type	q	Testing Geek
clickAndWait	btnG	
verifyText	link=Software Testing - Geek	Software Testing - Geek





Limitations

- Browser
  - Selenium IDE is only available for the Firefox. It can not be used for different browsers.
- Language
  - Selenium IDE can execute scripts created in Selenese only.
- Complexity
  - It is difficult to use Selenium IDE for checking complex test cases involving dynamic contents.

What Next??

Selenium Remote Control

- A server, written in Java and so available on all the platforms.
- Acts as a proxy for web requests from them.
- Client libraries for many popular languages.
- Bundles Selenium Core and automatically loads into the browser

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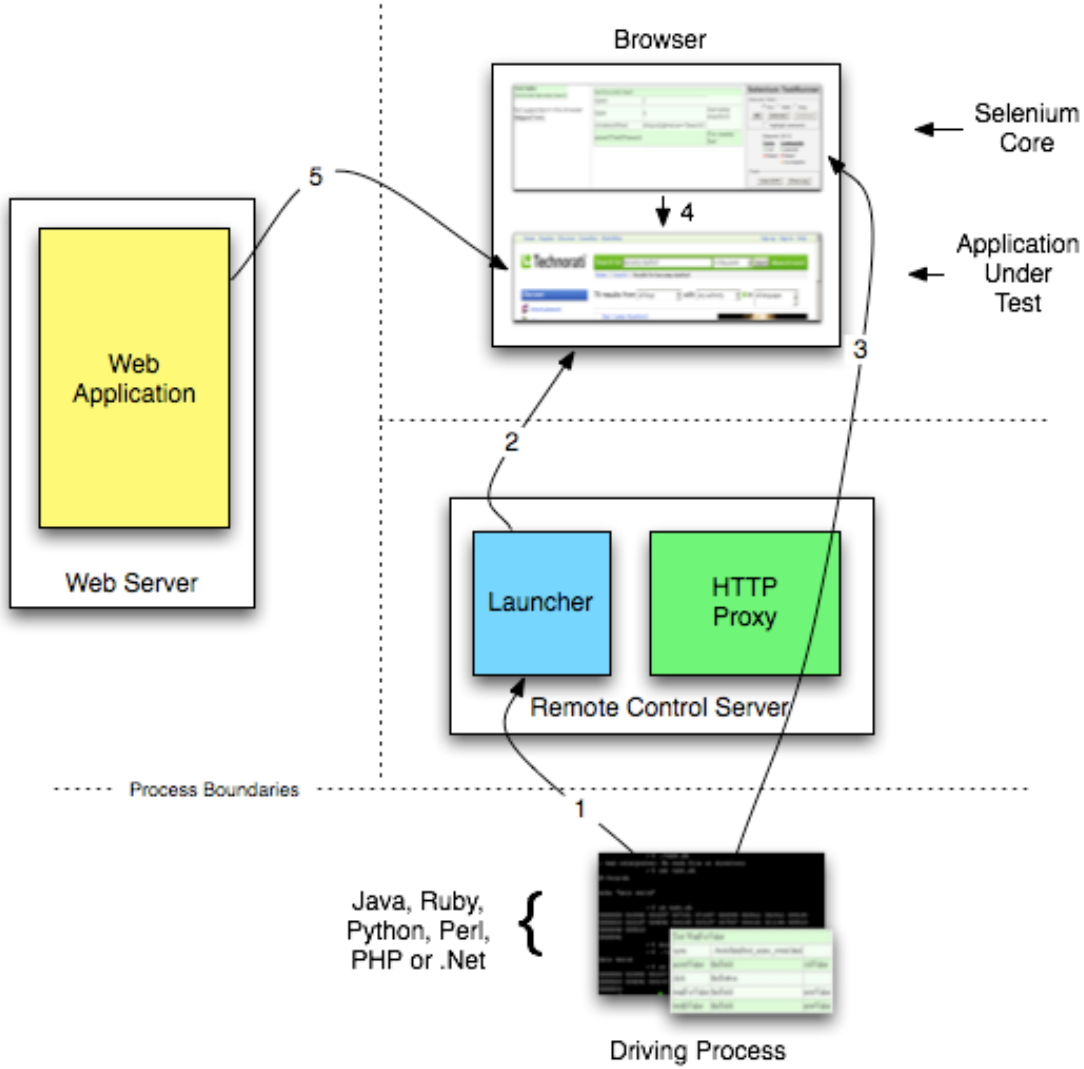
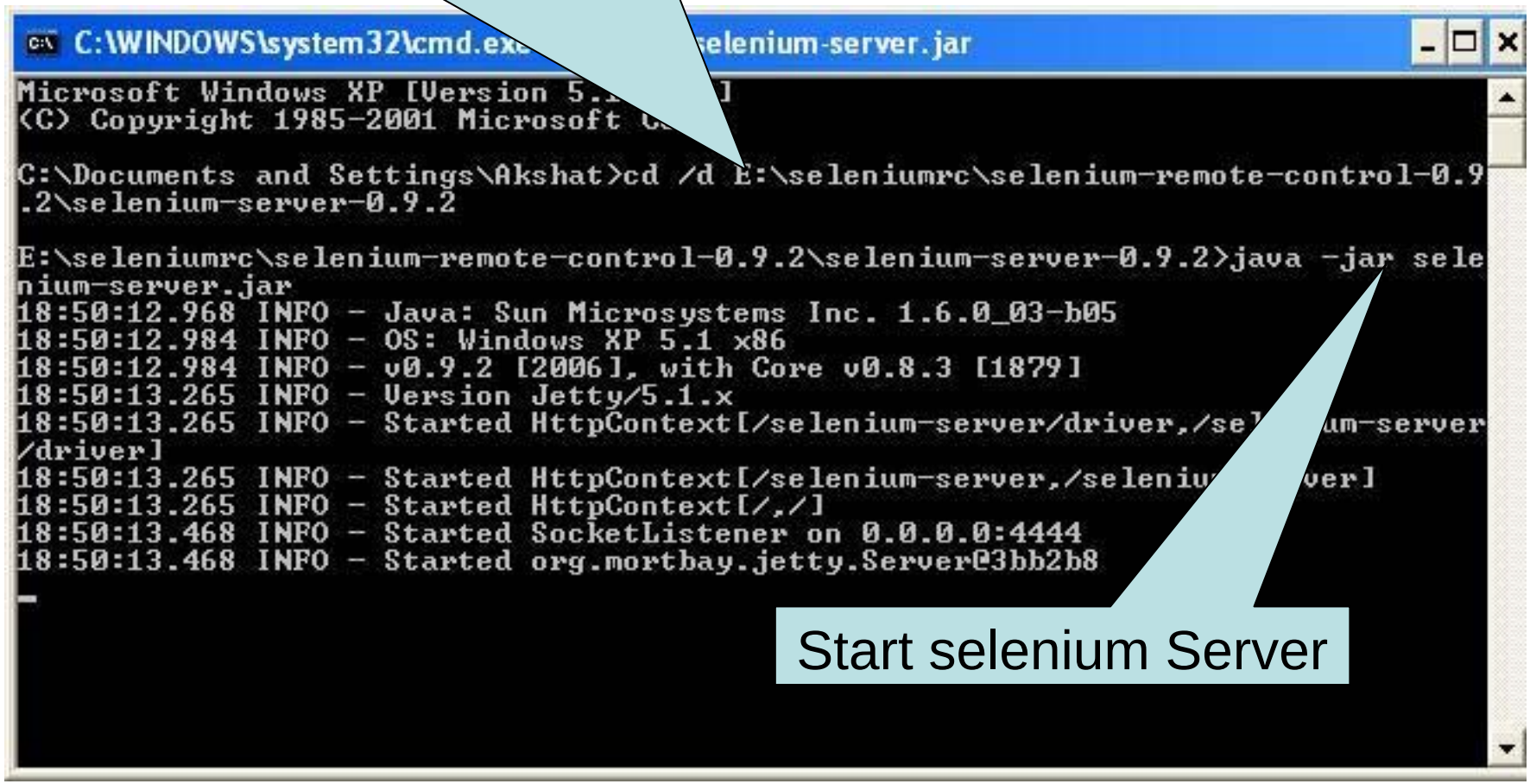
How it works



Install & Start

- Ensure that JDK is present on the machine and is in the class path.
- Downloaded Selenium RC from http://www.openqa.org
- Unzip to any directory on your file system.
- Change directory to the Selenium Server on the command line or terminal.
- Start Selenium Server.

Change Directory to Selenium Server



Start selenium Server

Selenium client drivers

- Enables communication with Selenium Remote Control Server.
- Functionality of Selenium is exposed via these drivers.
- Available in Ruby, Python, Java, C-Sharp … and so on.
- Give access to the rich features and libraries of the language, including their unit testing framework.
- Makes it possible to develop automated scripts in the same language as product.
- Which one you should use?
  - Whatever make sense in your context. For this exercise, we will use Ruby.

What is Ruby???

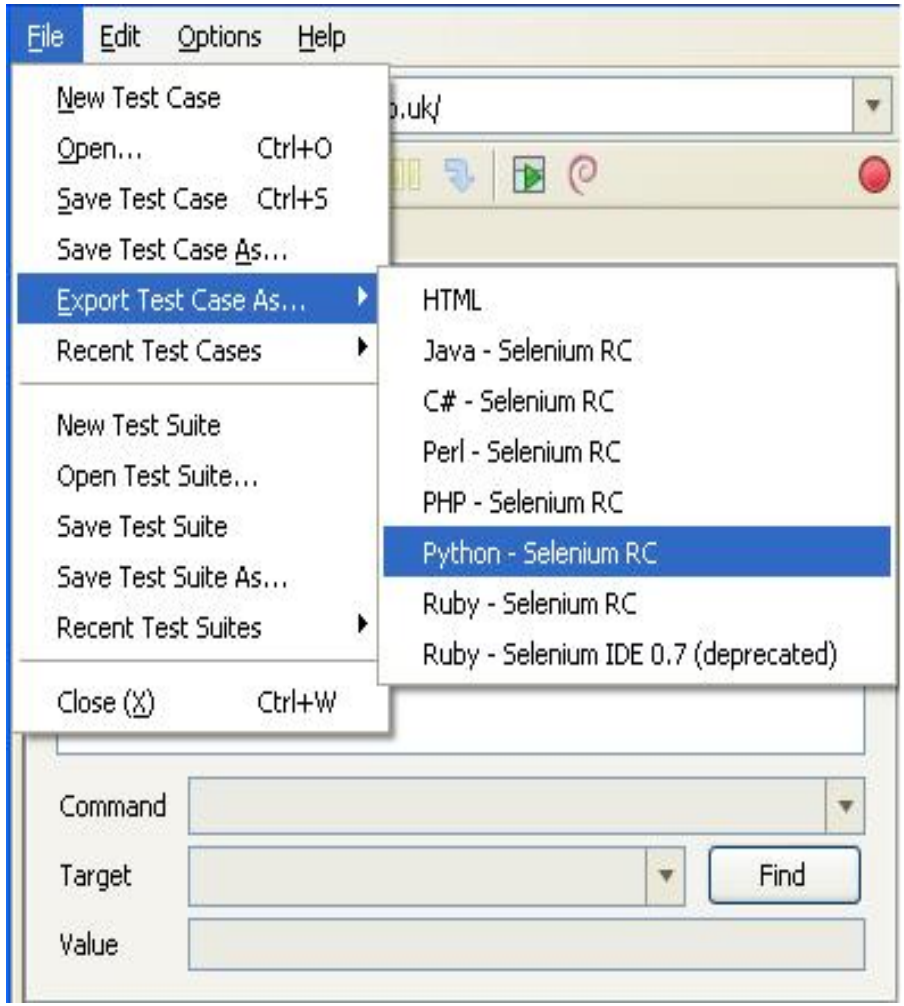
- It is object oriented scripting language
- Download from http://www.ruby-lang.org
- According to official Ruby Website, Ruby is the successful combination of:
  - *Smalltalk's conceptual elegance,*
  - *Python's ease of use and learning, and*
  - *Perl's pragmatism.*

Ruby Client Driver

- Ruby driver is bundled with the product itself.
- Check content of the directory where Selenium was unzipped initially.
- Open a separate command prompt and change its directory to the Ruby Driver.
- Your automation script can live anywhere in the file system as long as path is set properly.

Lets Start

- Record a sample script in Selenium IDE, same as first exercise.
- Export this test case as ruby.
- Analyze the test script.



```
require "selenium"
require "test/unit"

class NewTest < Test::Unit::TestCase
  def setup
    @verification_errors = []
    if $selenium
      @selenium = $selenium
    else
      @selenium = Selenium::SeleniumDriver.new("localhost", 4444, "*chrome", "http://google.com", 10000);
      @selenium.start
    end
    @selenium.set_context("test_new")
  end

  def teardown
    @selenium.stop unless $selenium
    assert_equal [], @verification_errors
  end

  def test_new
    @selenium.open "/"
    @selenium.type "q", "Testing Geek"
    @selenium.click "btnG"
  end
end
```

Client Driver and ruby unit testing framework

Setup is executed before every test case, gives selenium object and launches browser.

Browser

Tear down is executed after every test case and kills selenium and browser.

Test case, Steps

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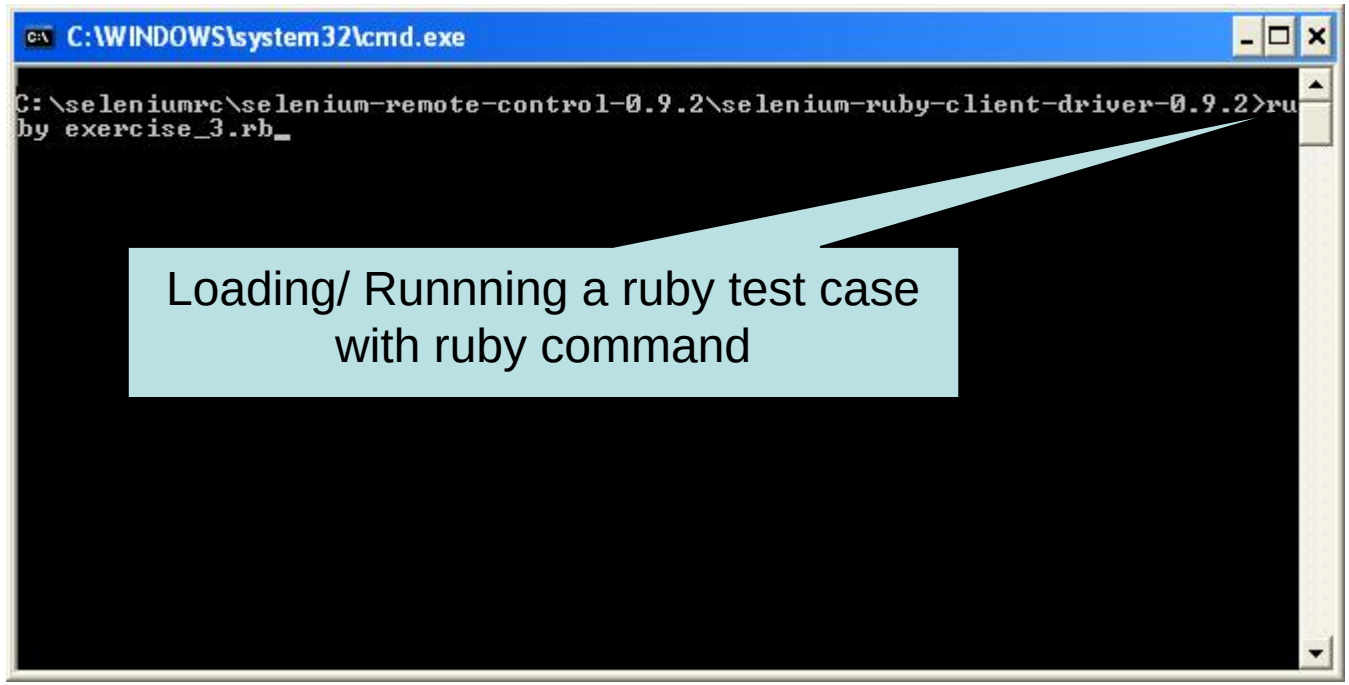
Run it !!!



Selenium RC Benefits

- Can be used for any Java Script enabled browser.
- Have access to the complete features / libraries of the high level language.
- Can be used to automate complex test cases.
- Makes it possible to create fast, robust and scalable automation.

Interesting Stuff

- Element Locators
  - Based on XPath, use XPather from http://xpath.alephzarro.com/download
  - Based on DOM
- Element Filters
  - Based on Index
  - Based on Value
- Regular expression
- *WaitForXXX , eval, screenshot and so on.*

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What if I have Questions?

- Well, Contact us ☺
  - info@atlantissw.com
  - testinggeek@gmail.com
- Visit www.openqa.org for official documentation, troubleshooting and information on support.
- Selenium articles on http://www.TestingGeek.com

Thank You!!!

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QUESTIONS??