Automation Concepts

Test Automation – Why?

- To avoid repetition
- More accuracy.
- Compatibility testing
- In case of regration testing.

Solution needed

- Quicker execution than the speed of manual testing.
- Execution without error.
- Full coverage during execution
- Automated report.

Test Automation could be answer.

- What is test automation?
  - Let's machine work instead of a person.
  - A machine in this context is a "Testing Tool".

Concept of Automation

- Manual testing uses the tester's knowledge about application and his/her hand-eye-brain co-ordination.
  - Navigate a page
  - Insert a data (in text box)
  - Select a value (from checkbox, list box or dropdownlist)
  - Take a action (Click a button)
  - Check actual result v/s expected result.
  - Mark a test case as Pass or Fail

Concept of Automation cont..

- Automation means execute above actions by automation tool without any human intervention.
- Tool understands a specific language.
  - Instructions needs to be provided using any one of the supporting language.

When to automate?

- System is under maintenance & has frequent release.
- System is developed using incremental / iterative model.
- High volume of test data needed for test case.
- Frequent execution cycle.
- Shorter frame for regression testing.
- Multiple sets of test data.
- Multiple configuration to be tested.

Tool Analysis – which tool to be used?

- Application technology & Tool suported.
- Ease of tool and flexibility.
- Error handling, report generating.
- Support availability for tool.
- Integration with other tools.
- Budget.
- Market presence.
- Human resources availability for the tool.
- Ex. QTP, HP function tester, Selenium, Silk Test and many more.

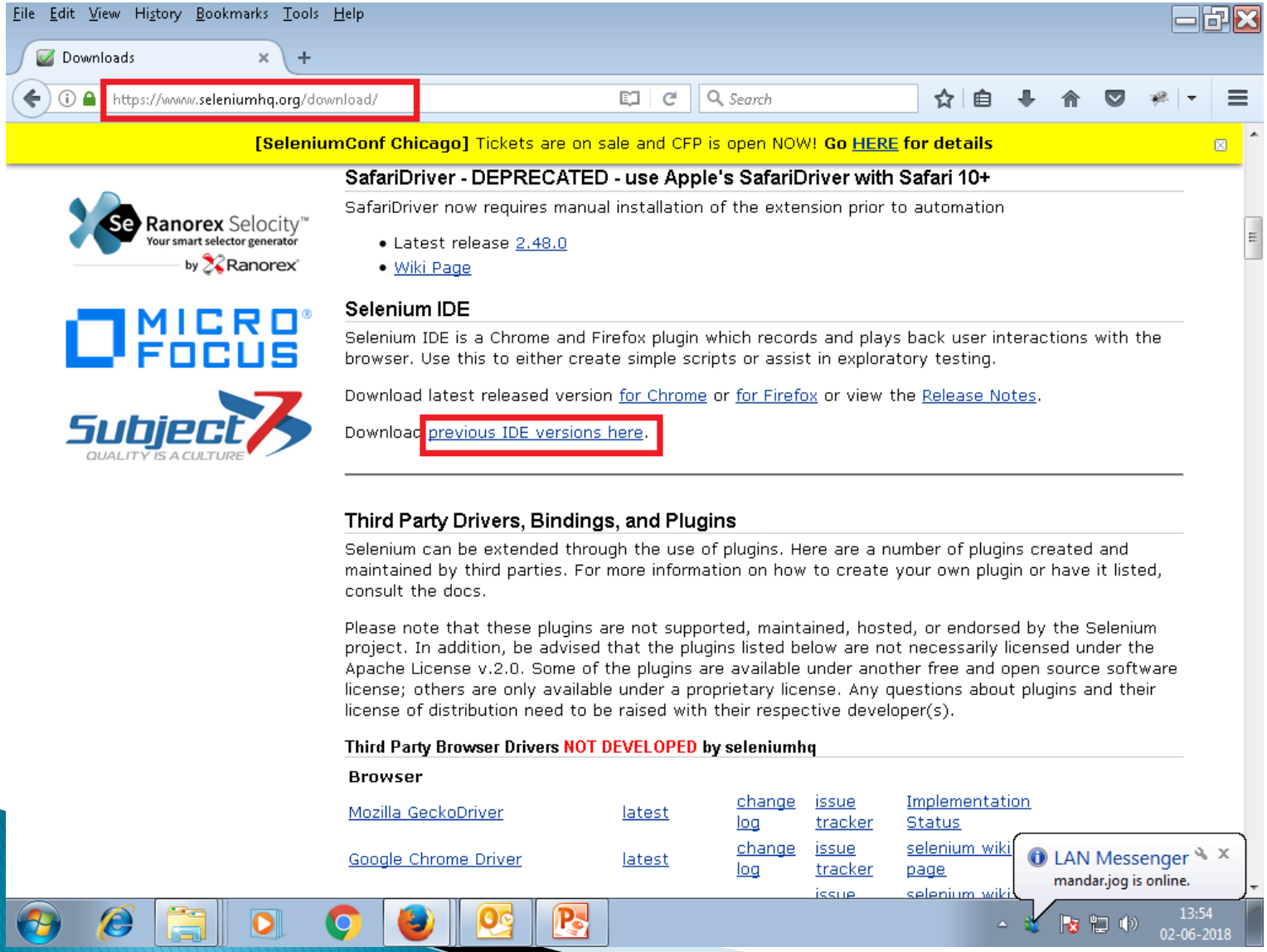
Selenium Components

- Selenium IDE
  - Record and playback mechanism on Mozilla Firefox only.
- Selenium Grid
  - Parallel execution on multiple browsers.
- Selenium RC (Remote Control)
  - Playback on multiple browsers. **Depricated.**
- Selenium WebDriver
  - In replacement with Selenium RC.

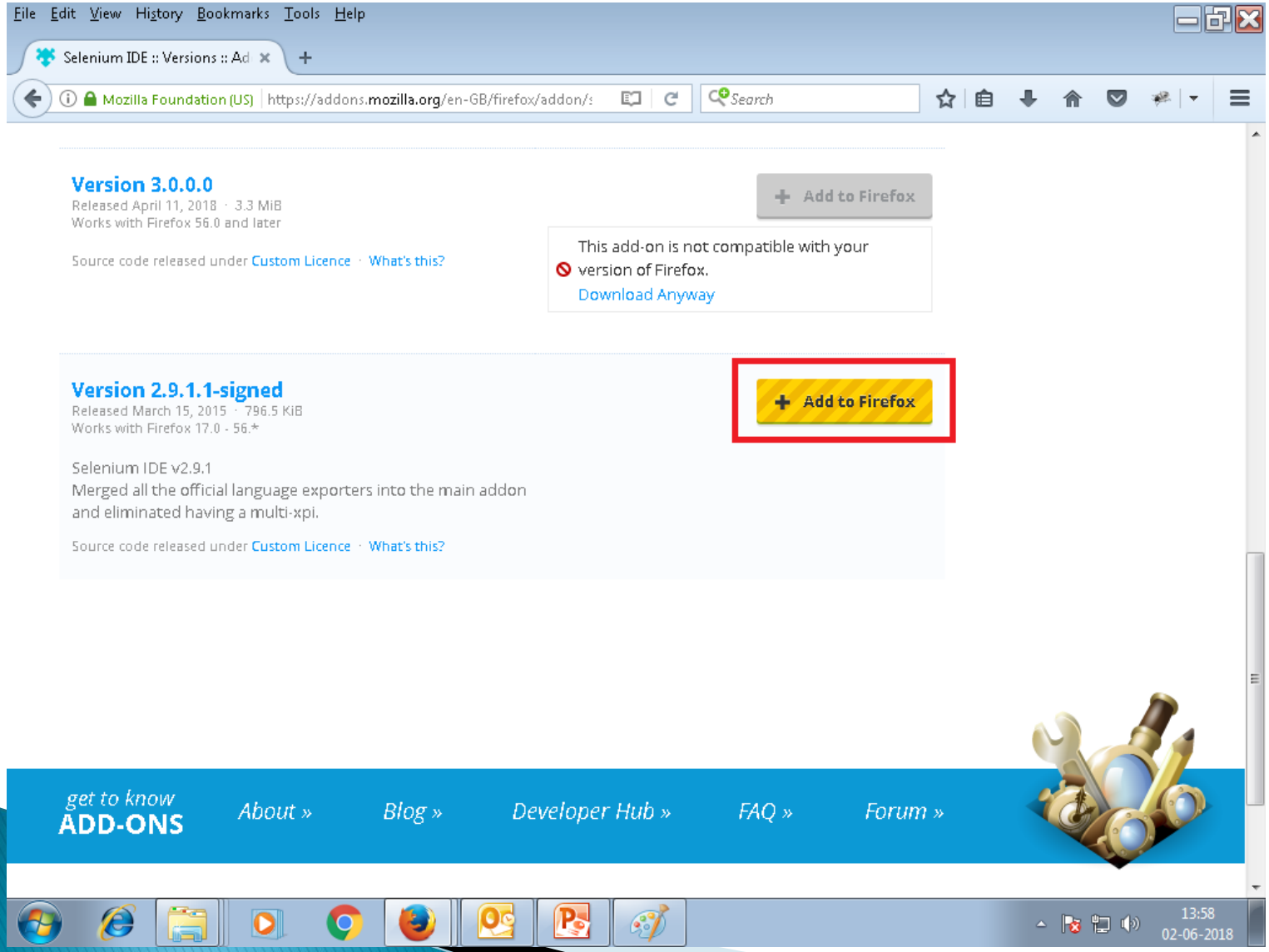
Selenium IDE

- This is Integrated Development Environment for Selenium tests.
- Implemented as Firefox Extension.
- Gives Record & Playback mechanism.
- History
  - Invented by Jason Huggins
  - Original name was JSFT (Javascript Functional Tester)
  - Developed using HTML & JavaScript
  - Built as open source tool for testing browser based applications only.

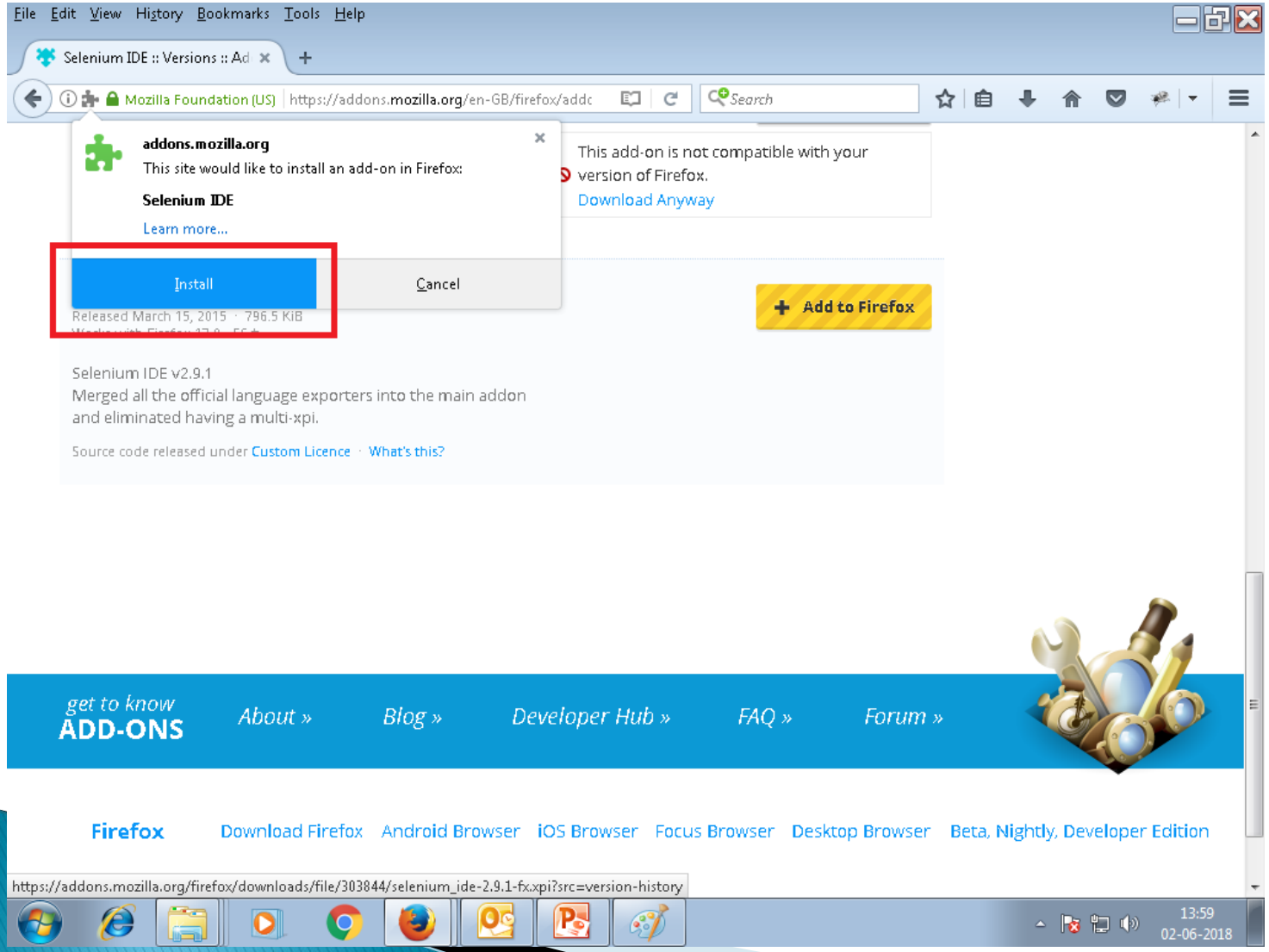
Installing IDE



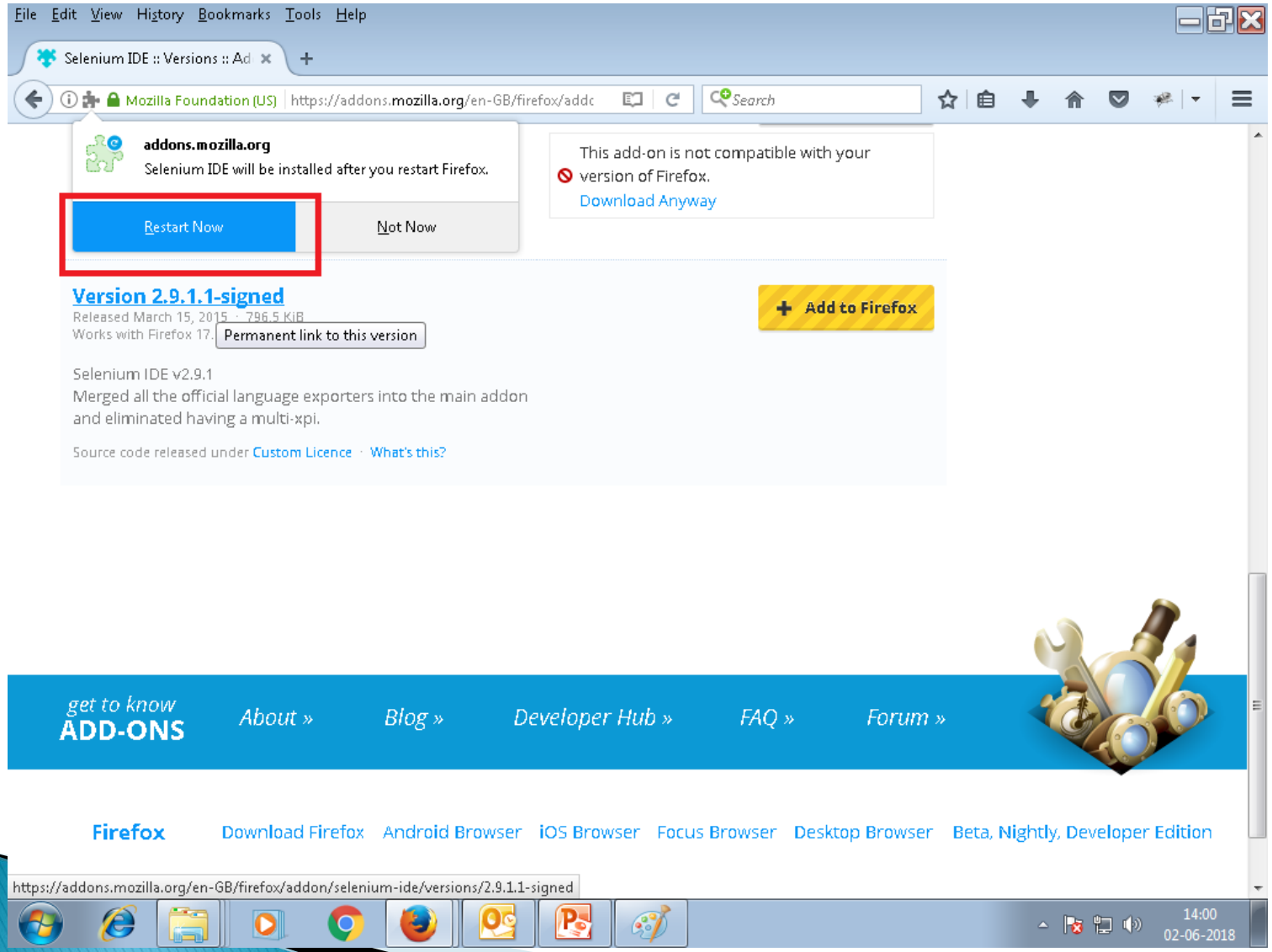
Installing IDE



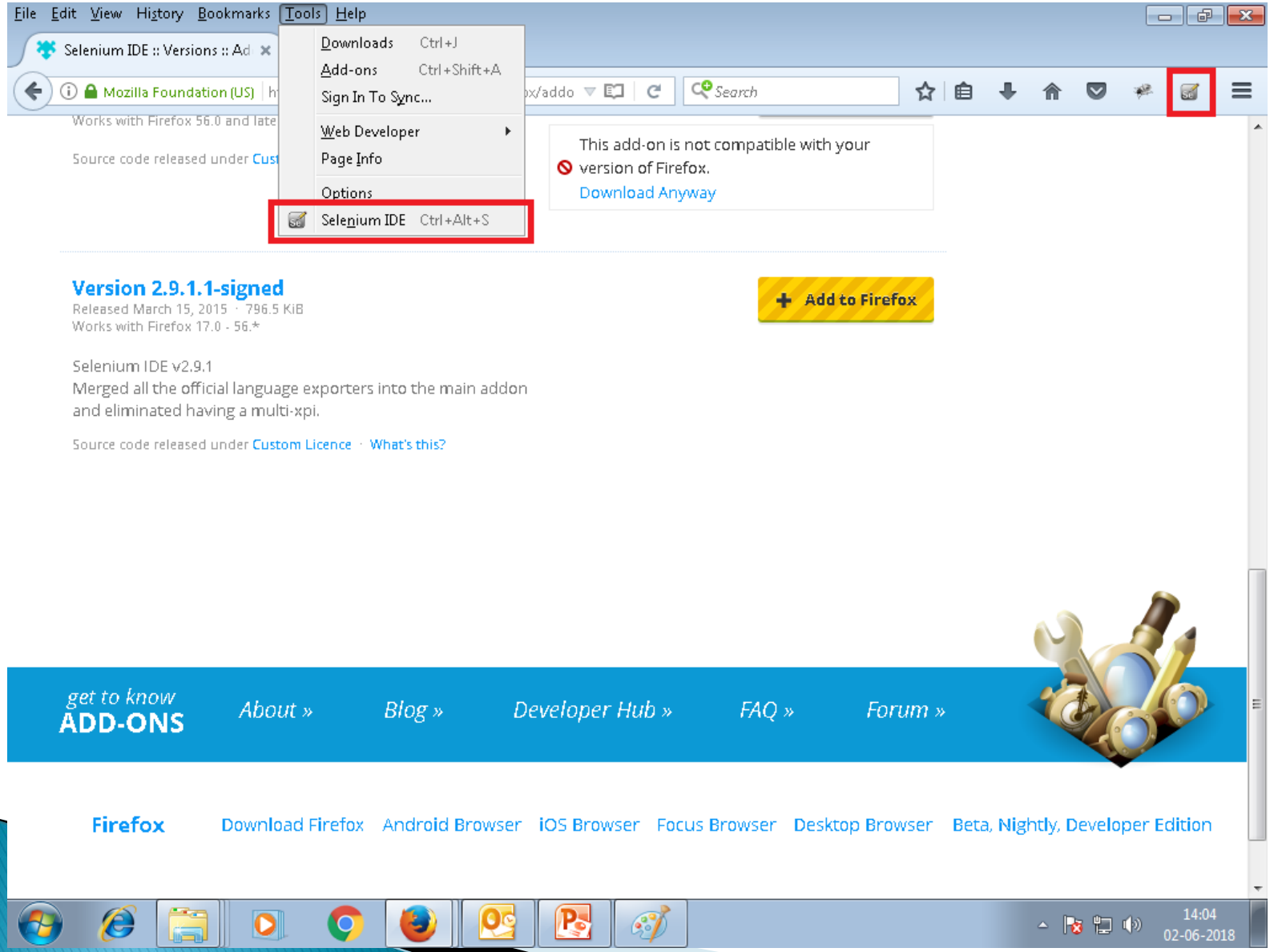
Installing IDE



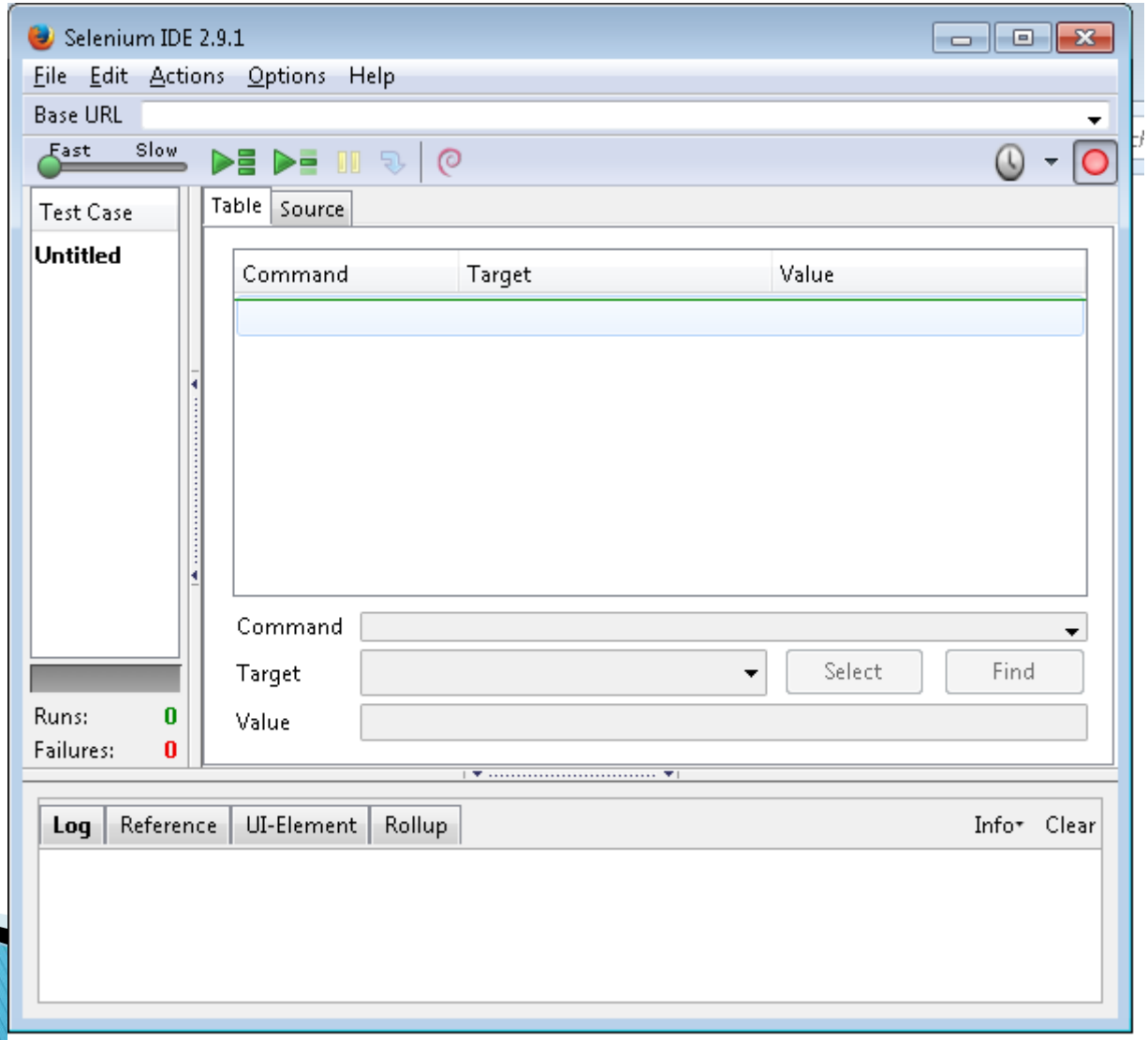
Installing IDE



Installing IDE



Selenium IDE



Record and Playback

- Record & Playback Demo
- Save the script
- Open the saved script and run again

Synchronization

- Synchronization is process of **adjusting speed of tool with speed of application.**
- Commands used for Synchronization
  - pause
  - clickAndWait
  - waitForPageToLoad

Test Suite

- Test suites are collection of related test cases.
- Use of Test Suite
  - Can execute multiple test cases on single click.
  - Can test end-to-end scenario.
  - Can test dependency testing
  - Saves time
- Demo
  - Create
  - Save
  - Run
  - Close
  - Open again
  - Run

Selenium Locators

- Locator is the way in which selenium locates a particular control on page.
- Selenium supports 5 locators.
  - ID
  - Name
  - CSS
  - DOM
  - XPath

Selenium Commands

- Selenium command is what tells Selenium what to do?
- There are three types of Selenium commands
  - Actions – commands to browser to do something
  - Accessors – Store / Retrieve data from Selenium
  - Asserts – verify that the particular control is present or not.