Automated Testing with Selenium WebDriver
Classroom Setup

This document describes the hardware and installed software requirements for the 2, 3, and 4 day Automated Testing with Selenium class. Do not hesitate to contact us if there are any questions or issues.

Student Computer VM Requirements

Each student needs a 64-bit VM running a **Windows 10** operating system.

Required:

- 4 GB of RAM
- 5 GB hard disk space for labs and installed software (This is above the requirements for the Windows operating system)
- Internet Access required for labs and to access Selenium downloads.

In Classroom Instructor Hardware Requirements (if not VILT)

- Direct Display projector with Either VGA or HDMI connection to Instructor's personal laptop
- Large Screen to display presentation
- Whiteboard with dry erase markers and erasers or large pad paper on free standing easel with markers.

Download and Configure Lab Environment

Files needed to perform the Selenium labs can be downloaded from the github repository: **https://github.com/bbirze/AutomatedTestingWithSelenium.git**.

- Extract the repository to the C: top level directory.
- Rename the directory to `C:/SeleniumLabs`.

> **NOTE:** The setup file you are reading, *AutomatedTestingWithSelenium_ClassroomSetup.pdf,* is included in the repository you just downloaded. The downloaded setup instructions will have any late breaking environment changes due to Selenium updates.
>
> - **Please open and refer to the instructions in the downloaded setup file to complete the environment setup!**

- Add the following empty directories to the structure to hold the installed software and student's work:
    - `C:\SeleniumLabs\Jars\Seleium2`
    - `C:\SeleniumLabs\Jars\Seleium3`
    - `C:\SeleniumLabs\SeleniumServers`
    - `C:\SeleniumLabs\Workspace`
- The SeleniumLabs directory structure now contains the download lab starter and solution project folders and the folders you just added. The `C:\SeleniumLabs` top level directory should now look like this:
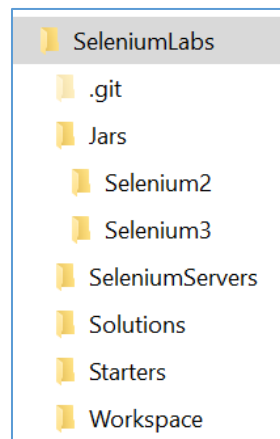
Install Software

Student VM Environment will need the following software for the class labs. Please see the associated section for download and installation instructions.

- Java SE 8 JDK (Not JRE)
- Neon version of Eclipse IDE for Java Developers
- Latest version of Internet browsers
    - Google Chrome
    - Firefox
    - Internet Explorer
    - Microsoft Edge
- Selenium Libraries and Servers
- Notepad++
- 7Zip

7-Zip Archive Tool

Download:

- **URL**: http://www.7-zip.org/
- **Version:** Windows 64-bit x64
- **Installation**: Click on the Download link for the 64-bit Windows installation.

Click on the download link for the Windows 64-bit x64 version

Installation:

Once downloaded, double click on the executable file and follow the instructions in the install wizard. Take the defaults in the installation.

You can use 7-Zip to quickly unzip other file during installation by right clicking on the file in the File Explorer, and selecting the 7-Zip options.

Notepad++ Text Editor

Download:

- **URL**: https://notepad-plus-plus.org/download/v7.5.8.html
  - do an Internet search for "Notepad++ download" and follow the link to the newest version.
- **Version:** Windows 64-bit x64
- **Installation**: Click on the big green DOWNLOAD button in the middle of the page, it will download the correct version.

Installation:

Once downloaded, double click on the executable file and follow the instructions in the install wizard. Take the defaults in the installation.

Java SE 8 JDK 64 bit for Windows

Download:

- **URL:** http://www.oracle.com/technetwork/java/javase/downloads/jdk8-downloads-2133151.html - You can also do an Internet search for "Java SE 8 Download" to find the URL.
- **Version:** Windows x64
- **Installation:** Use downloaded Installation program

Find the section for the Java SE Development Kit, and select the Accept License radio button. Find the Product/File Description: Windows x64, and click on the download, jdk-8u144-windows-x64.exe.

Installation:

Once downloaded, double click on the executable file and follow the instructions in the install wizard. Take the defaults in the installation.

Neon Eclipse IDE for Java Developers

Download:

- **URL**: http://www.eclipse.org/downloads/packages/eclipse-ide-java-developers/neon3
- **Version**: Windows-64-bit, only final version is available
- **Installation**: Unzip and create desktop shortcut

Under the Download Links section click on the Windows 64-bit link. Click on the Download link to download the Eclipse zip file.

Installation:

1. Use zip utility to open the downloaded file. Extract the file to the top level `C:\` directory to install Eclipse.
2. Go to the Eclipse install directory and find the file `C:\eclipse\eclipse.exe` and make a shortcut of the file. Rename the shortcut to "Eclipse Java Neon". Then move the shortcut to the desktop.

Configuration:

1. Double click on the shortcut icon to open Eclipse. Choose the workspace `C:\SeleniumLabs\Workspace`.
2. When Eclipse opens,
   - uncheck the box in the bottom right hand corner next to "Always show Welcome at start up"
   - Click the icon in the top right hand corner to go to the workbench.
3. Install JDK 1.8 as default JRE. Go to Windows->Preferences

- o Open Java->Installed JREs,   click on Add->Standard VM
- o In JRE Definition
    - JRE home: C:\program files\java\jdk 1.8.0_xxxx
    - JRE name: jdk 1.8.0_xxx
        - Where xxx is the minor revision, currently 151
        - The JRE system libraries window will become populated with a list of jars, which tells you it found the JRE Home.
    - Click Finish
- o Back in Installed JREs, Check jdk 1.8.0_xxx to make it the default. Ensure the jre1.8.0_xxx version is Not checked.
- o Click OK and to close the window and set your preferences.
4. Select the menu item Help -> Eclipse Marketplace…
    - o In the pop-up window, search for TestNG (Type the text TestNG in Find text box), then click the Go button)
    - o After searching: Click Install button at TestNG for Eclipse.
    - o Follow the further instructions by Eclipse, including accepting the license agreement. If you get a security warning, give the ok to finish installation.
    - o You will need to restart Eclipse for the changes to take effect.

Different Internet Browsers

Selenium works with most known browsers to enable testing web application in multiple browser environments. All browsers below are required to perform labs where multiple browsers are used.

- **S/W: Google Chrome** Browser
    - o **URL**: https://www.google.com/chrome/browser/desktop/index.html
    - o **Version:** N/A, latest
    - o **Installation**: Click on the "Download Chrome" blue button. In the pop-up, click the "Accept and Install" blue button.

- **S/W: Firefox Browser**
    - o **URL**: https://www.mozilla.org/en-US/firefox/new/
    - o **Version**: N/A, latest
    - o **Installation**: Click on the green "Download Now" button. Once downloaded, double click on the executable file and follow the instructions in the install wizard.   Take the defaults in the installation.

- **S/W: Microsoft Edge Browser:**
    - o **Installation**: N/A, Comes installed with Windows 10 operating system.

- **S/W: Internet Explorer Browser 11:**
  - **Version**: latest, currently version 11.xxx
  - **Installation**: Comes installed with Windows 10 operating system but not visible
    - Click on Start button in bottom left hand corner of window, in task bar
    - Type Internet Explorer in Search text box. You will see the Internet Explore shortcut and its logo appear at the top of the list.
    - Right click on the Internet Explorer shortcut and select "Pin to Taskbar" to make it appear in the task bar.
    - Open Internet Explorer to configure it.
      - In "Set up Internet Explorer 11" Popup, select Use Recommended Security and Compatibility Settings. Click OK.

Selenium Libraries

Multiple versions of the Selenium libraries and Selenium Servers are required for the labs. Please download the following jars and zip files.

Note: Some browsers like Chrome may give you a warning symbol when you try to download jars. To finish download, go to the show all downloads page and select "Keep" on any file with a warning. Warning is normally shown like this:
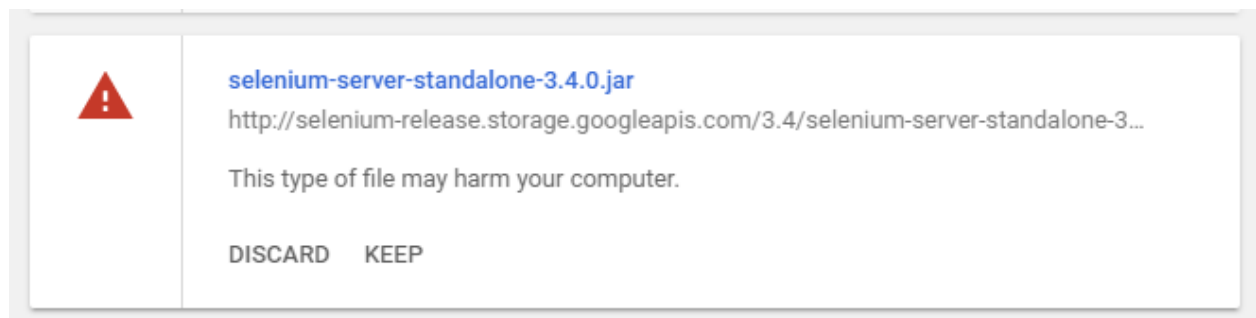
Download Latest Selenium Jars and Libraries:

Selenium 3 WebDriver and IExplorer Server

- Go to the Selenium Download Page : https://www.seleniumhq.org/download/
- Click on the 4 links highlighted in the screen show below:

- o **This will Download** the following files (where XX.X is the current minor version number)
    - o IEDriverServer_Win32_3.XX.X.zip
    - o IEDriverServer_x64_3.XX.X.zip
    - o selenium-java-3.XX.X.zip
    - o selenium-server-standalone-3.XX.X.jar
- **Installation**
    - o Move the selenium files to `C:\SeleniumLabs\Jars\Selenium3`
        - ▪ unzip selenium-java-3.XX.X.zip
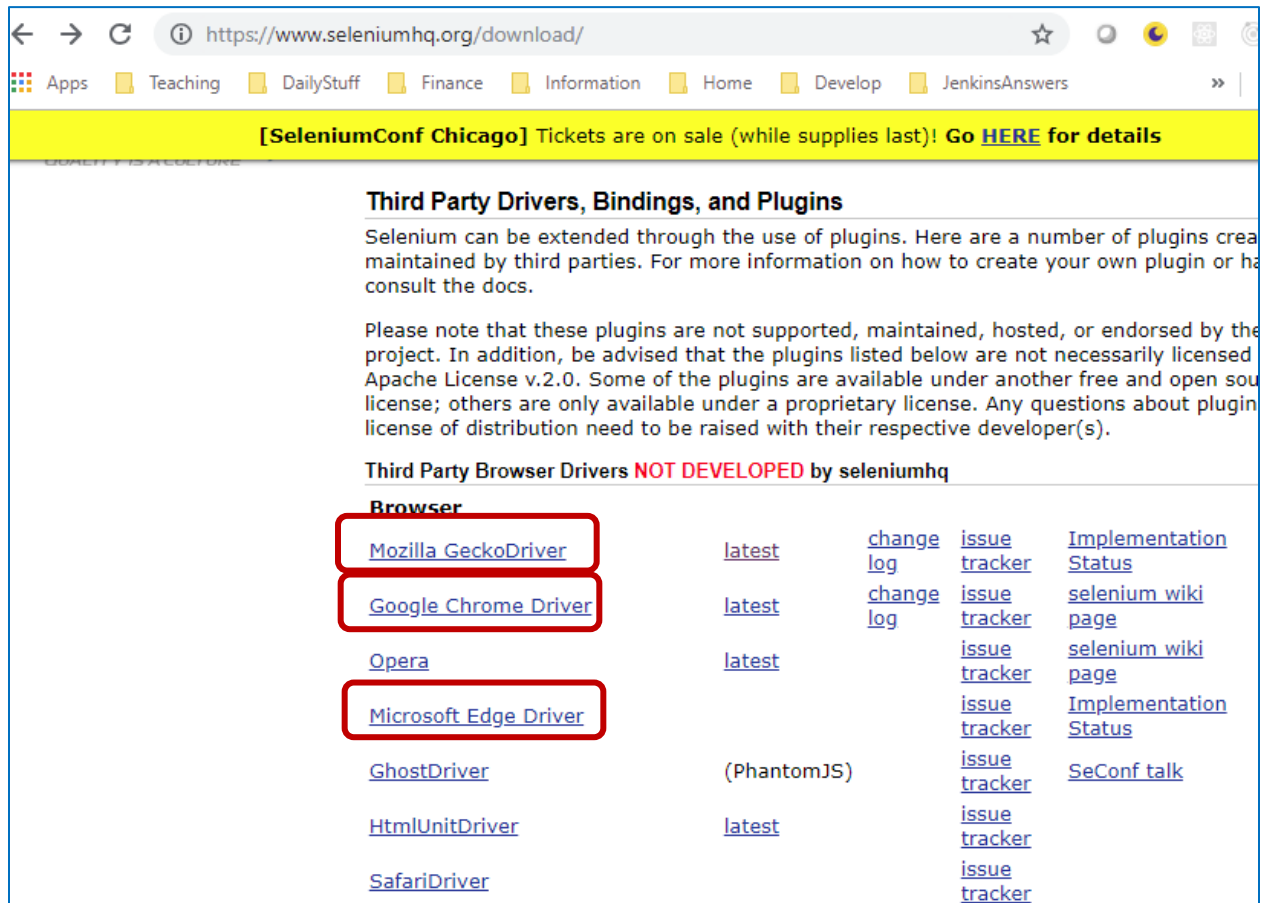   - o Move the IEDriverServer files to `C:\SeleniumLabs\SeleniumServers`

Selenium 2 WebDriver

- o **Go to URL**: http://selenium-release.storage.googleapis.com/index.html?path=2.53/
    - o **Download** the following 5 files
        - ▪ IEDriverServer_Win32_2.53.0.zip
        - ▪ IEDriverServer_x64_2.53.1.zip
        - ▪ selenium-java-2.53.1.zip
        - ▪ selenium-server-2.53.1.zip
        - ▪ selenium-server-standalone-2.53.1.jar
    - o **NOTE**: There is a 2.53.0 and a 2.54.1 version to many of the jars. Be <u>Sure</u> to download the 2.53.1 version.
- o **Installation**
    - o Move the selenium files to `C:\SeleniumLabs\Jars\Selenium2`
        - ▪ unzip selenium-java-2.53.1.zip
        - ▪ unzip selenium-server-2.53.1.zip
            - • The two zip files, they will unzip to the same folder. When asked if you want to overwrite files, say yes.
    - o Move the IEDriverServer files to `C:\SeleniumLabs\SeleniumServers`
        - ▪ Unzip IEDriverServer_x64_2.53.1.zip to the same folder
        - ▪ Do <u>Not</u> unzip IEDriverServer_Win32_3.4.0.zip

Selenium Browser Servers

<u>Download</u>

- • Go to the Selenium Download Page **URL**: https://www.seleniumhq.org/download/
- • Scroll down to the "Third Party Drivers, Bindings, and Plugins" section
- • Click on the 3 links highlighted in the screen show below in turn, downloading the driver before returning to this screen to click on the next link:

Download

- o **Mozilla GeckoDriver** Link will take you to the geckodriver GitHub page. Scroll down to the documentation and look under the 'Download" section to find the "Releases" link, click it.

- o Under the latest release of the GeckoDriver, click on the Win64 version to download

  it.
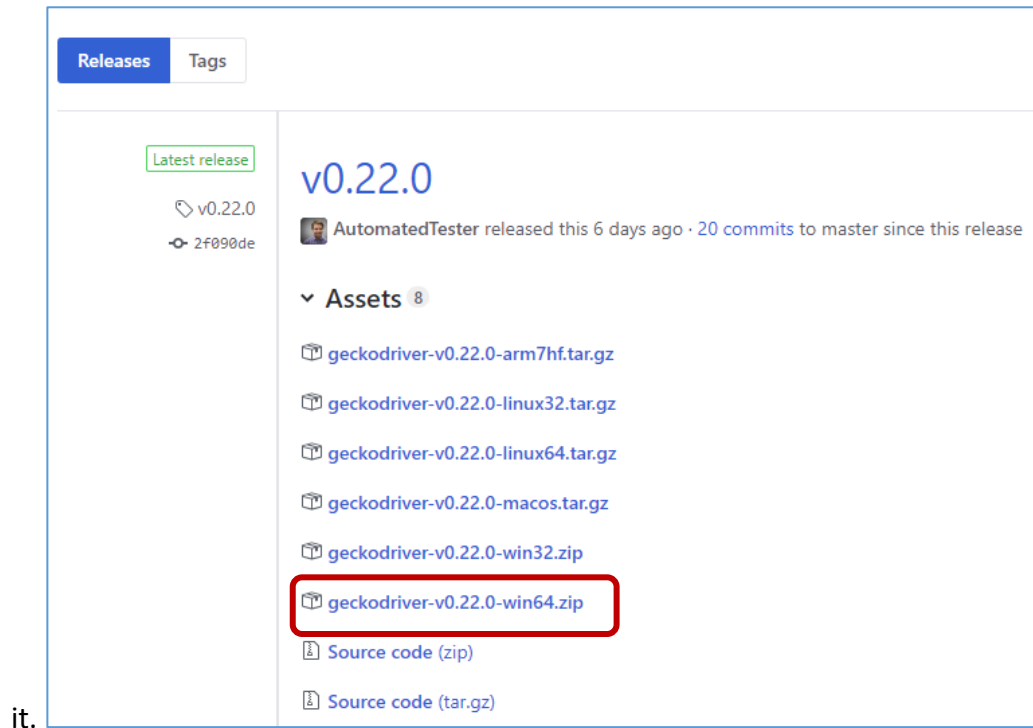
- o **Google Chrome Driver Link** will take you to the ChromeDriver home page.
    - ▪ In the left hand menu, lick on DOWNLOADS.
    - ▪ Click on the link by 'LATEST RELEASE:' at the top of the page. This takes you to the FTP Index Download page.
    - ▪ Click on the chromedriver_win32.zip link to download.
- o **Microsoft Edge Driver Link** will take you to the Microsoft WebDriver home page
    - ▪ There are several versions of the Edge Driver under the Downloads section. Follow the Installation and usage instructions to determine which version to download.
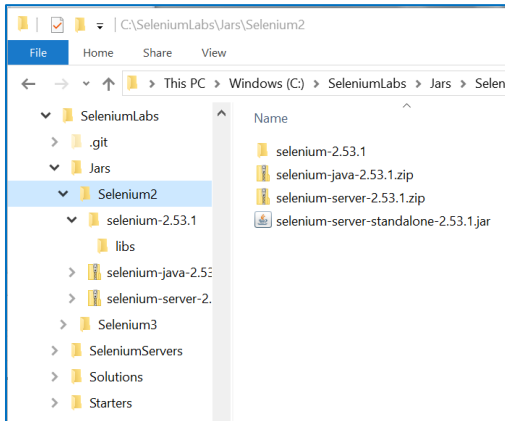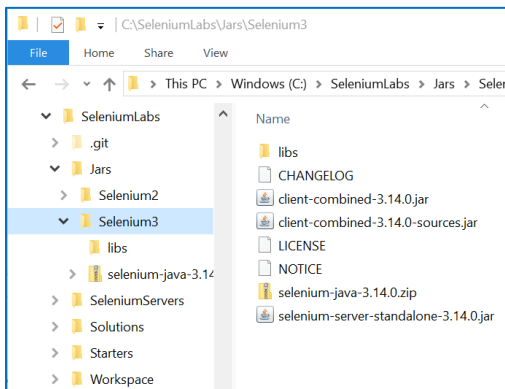
Installation

- o Locate the following files in the download folder
    - ▪ MicrosoftWebDriver.exe
    - ▪ Chromedriver_win32.zip
    - ▪ Geckodriver-master.zip
- o Move all 3 files to `C:\SeleniumLabs\SeleniumServers`
- o Unzip the Chromedriver and Geckodriver files to the same folder.
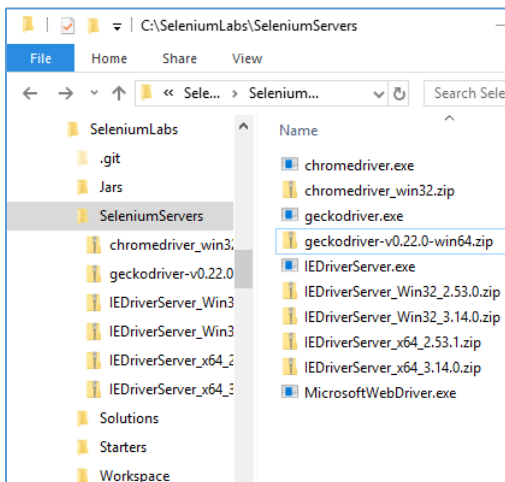
Check Installation

Your installations folders should now have the files in them shown below.   Note some version numbers may be different as you are downloading the latest versions of this software.

C:\SeleniumLabs\Jars\Selenium2

C:\SeleniumLabs\Jars\Selenium3

C:\SeleniumLabs\SeleniumServers