



CI/CD series

Selenium Grid





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Intro

Software Craftsmanship

Software Practitioner at สยามชำนานุกิจ พ.ศ. 2556

Agile Practitioner and Technical at SPRINT3r

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15 mins · Bangkok · 🌐 ▾

Java and Bigdata

...



Facebook interface for the page **somkiat.cc**. The top navigation bar includes the Facebook logo, the page name **somkiat.cc**, a search icon, and user profile icons for **Somkiat** and **Home**. The main navigation bar features **Page** (selected), **Messages**, **Notifications** (3), **Insights**, **Publishing Tools**, **Settings**, and **Help**.

The page cover image shows a man in a white Superman t-shirt with "SOMKIAT.CC" printed on it, posing against a white wall. The profile picture is a smaller version of the same image. The page name **somkiat.cc** and handle **@somkiat.cc** are displayed below the profile picture.

The left sidebar contains a menu with **Home** (selected), **Posts**, **Videos**, and **Photos**.

The main content area displays the cover image with a blue call-to-action button that says "Help people take action on this Page." and a blue button labeled "+ Add a Button". Below the cover image, there are buttons for **Liked**, **Following**, **Share**, and a three-dot menu icon.

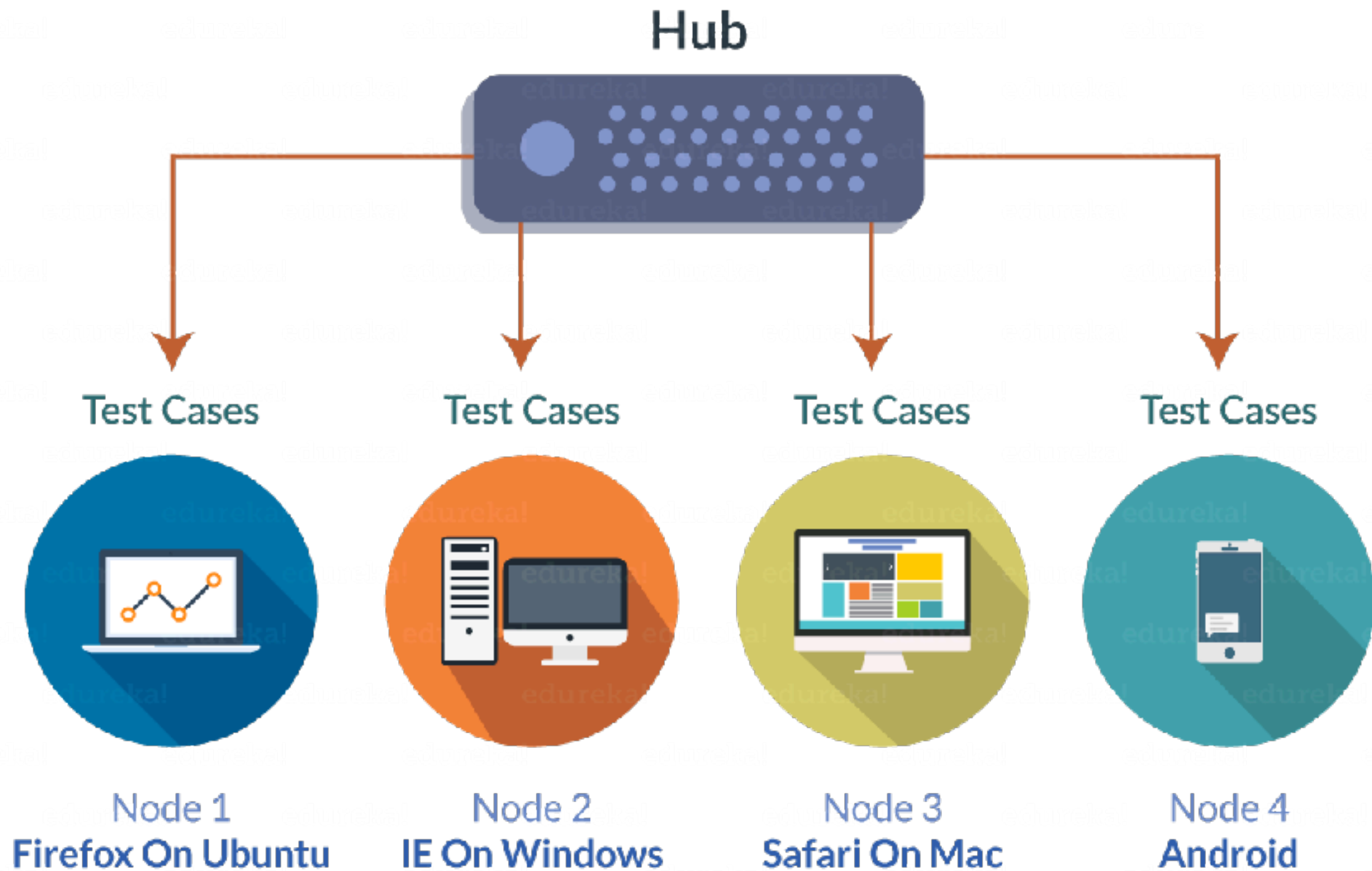


Agenda

1. Concept of Selenium Grid
2. Workshop
3. Workshop with Docker
4. Workshop with Docker compose



Selenium Grid



Selenium Grid

Scale by distributed testing on several machine

Parallel execution

Manage multiple environments in central point

Easy to run tests against a many combination
of OS and Browser

Minimize the maintenance time
















Download latest version

<http://selenium-release.storage.googleapis.com/index.html>

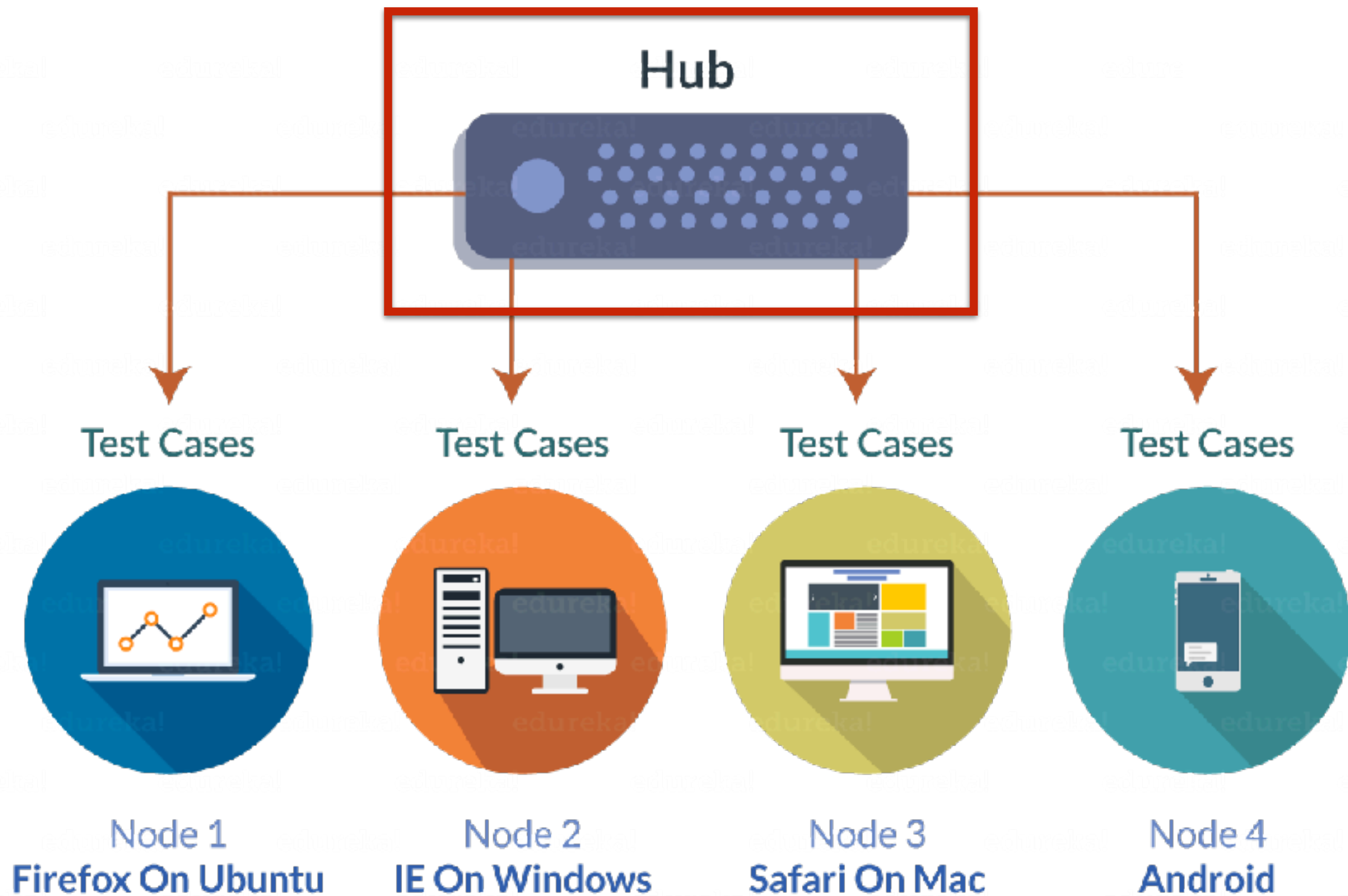
← → ↻ selenium-release.storage.googleapis.com/index.html?path=3.9/

Index of /3.9/

	<u>Name</u>	Last modified	Size	ETag
	Parent Directory	-	-	-
	selenium-java-3.9.0.zip	2018-02-05 14:57:34	8.43MB	7e9a0002b8e28074f52bcfe7a239f2ca
	IEDriverServer_Win32_3.9.0.zip	2018-02-05 17:44:30	0.94MB	e7d7743b24cb897ce8565839cec22ca83
	selenium-dotnet-3.9.0.zip	2018-02-05 17:44:32	4.47MB	997e2db93d50be64d58ba374fd1b1819
	selenium-dotnet-strongnamed-3.9.0.zip	2018-02-05 17:44:32	4.48MB	debcfeaa4149cdb4d92f580844acd158
	selenium-html-runner-3.9.0.jar	2018-02-05 14:57:45	14.23MB	74923c40144ce876b60412018acd1054
	selenium-html-runner-3.9.1.jar	2018-02-07 22:43:43	14.23MB	bddf0e5bedcd5afc2f3029225fa5ef9b
	IEDriverServer_x64_3.9.0.zip	2018-02-05 17:44:31	1.08MB	5cff5e4d62b13876c0b2cd9b7bd4a2b3
	selenium-java-3.9.1.zip	2018-02-07 22:43:32	8.43MB	1fcd99a0df0a537002d99e28db6cf596
	selenium-server-3.9.0.zip	2018-02-05 14:57:28	21.05MB	d6b1ce14a0369ed2f5974757bc7f656b
	selenium-server-3.9.1.zip	2018-02-07 22:43:25	21.05MB	0825e089662edcb27ec5ee30ef05d152
	selenium-server-standalone-3.9.0.jar	2018-02-05 14:57:12	22.34MB	306a475b6f1d540969416cdf11cd7361
	selenium-server-standalone-3.9.1.jar	2018-02-07 22:43:10	22.34MB	eee40b2683858fd7091bf8b5481f306f



Selenium Grid



Start Hub

```
$java -jar selenium-server-standalone-3.9.1.jar  
-role hub  
-host localhost
```

```
656:INFO:osjs.Server:main: jetty-9.4.7.v20170914, build timestamp: 2017-07-07:00, git hash: 82b8fb23f757335bb3329d540ce37a2a2615f0a8  
703:INFO:osjs.session:main: DefaultSessionIdManager workerName=r  
  
703:INFO:osjs.session:main: No SessionScavenger set, using default  
  
712:INFO:osjs.session:main: Scavenging every 600000ms  
729:INFO:osjsh.ContextHandler:main: Started o.s.j.s.ServletContextHandler@17b407b8{/1.1}{0.0.0.0:4444}null,AVAILABLE}  
915:INFO:osjs.AbstractConnector:main: Started ServerConnector@17b407b8{0.0.0.0:4444}[/1.1]{0.0.0.0:4444}  
922:INFO:osjs.Server:main: Started @1884ms  
Selenium Grid hub is up and running  
Nodes should register to http://localhost:4444/grid/register/  
Clients should connect to http://localhost:4444/wd/hub
```



Selenium Grid page

http://localhost:4444



Selenium Grid Hub v.3.9.1

Whoops! The URL specified routes to this help page.

For more information about Selenium Grid Hub please see the [docs](#) and/or visit the [wiki](#). Or perhaps you are looking for the Selenium Grid Hub [console](#).

Happy Testing!

Selenium is made possible through the efforts of our open source community, contributions from these [people](#), and our [sponsors](#).



Grid console page

<http://localhost:4444/grid/console>



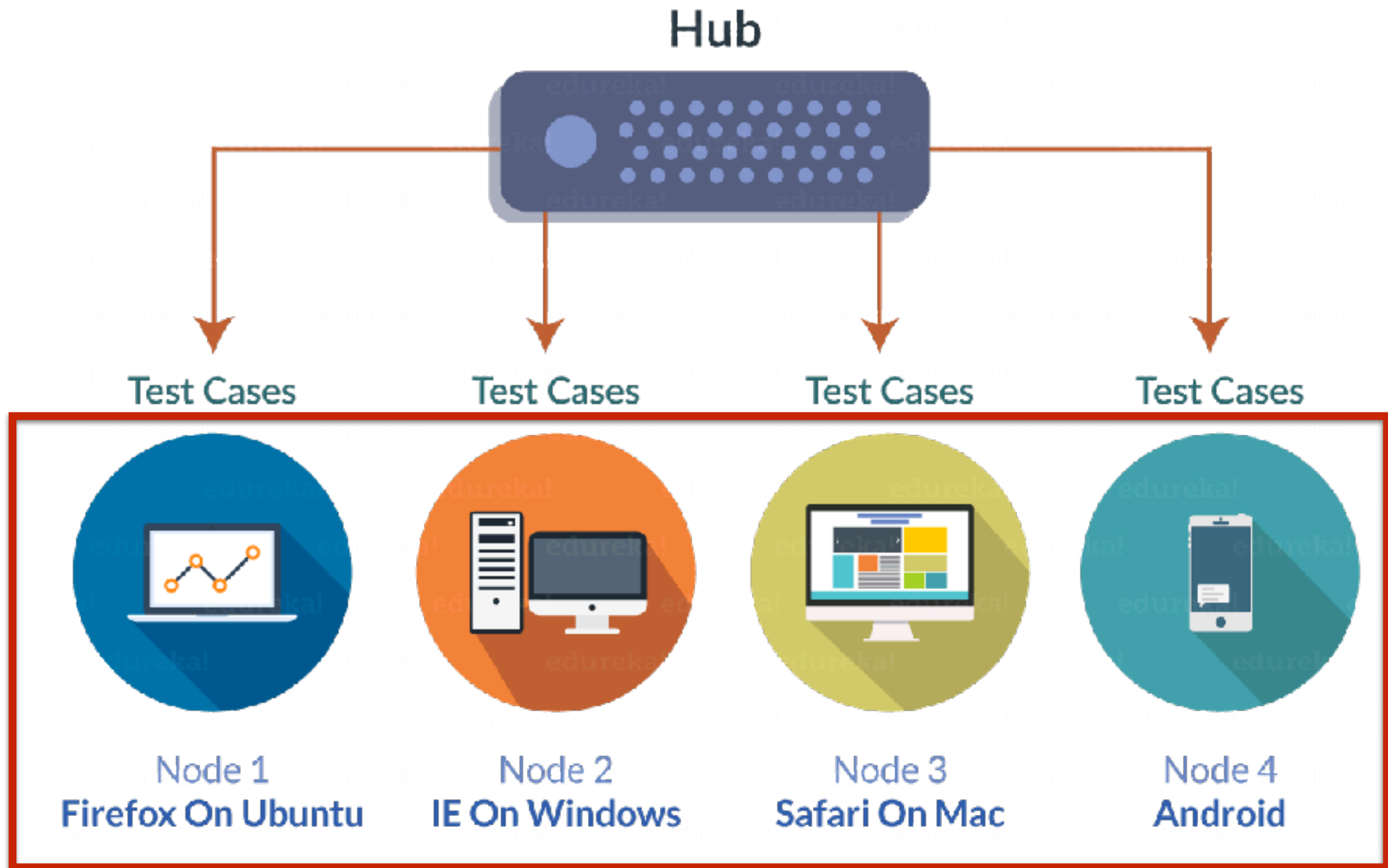
Grid Console v.3.9.1

Help

[view config](#)



Selenium Grid



Add Node to Hub

Must prepare your node before starting
eg. GoogleChrome Driver



Add Node to Hub

```
java -jar selenium-server-standalone-3.9.1.jar  
-role node  
-hub http://localhost:4444/grid/register  
-host localhost
```



Add Node to Hub

```
Selenium build info: version: '3.9.1', revision: '63f7b50'  
Launching a Selenium Grid node on port 5555  
.412:INFO::main: Logging initialized @834ms to org.seleniumhq.jetty9.uti  
  
.563:INFO:osjs.Server:main: jetty-9.4.7.v20170914, build timestamp: 2017  
00, git hash: 82b8fb23f757335bb3329d540ce37a2a2615f0a8  
.592:WARN:osjs.SecurityHandler:main: ServletContext@o.s.j.s.ServletConte  
/,null,STARTING} has uncovered http methods for path: /  
.607:INFO:osjsh.ContextHandler:main: Started o.s.j.s.ServletContextHandl  
AVAILABLE}  
.645:INFO:osjs.AbstractConnector:main: Started ServerConnector@538b01f1{  
{0.0.0.0:5555}  
.647:INFO:osjs.Server:main: Started @1069ms  
Selenium Server is up and running on port 5555  
Selenium Grid node is up and ready to register to the hub  
Starting auto registration thread. Will try to register every 5000 ms.  
Registering the node to the hub: http://localhost:4444/grid/register  
Updating the node configuration from the hub  
The node is registered to the hub and ready to use
```



Grid console page

<http://localhost:4444/grid/console>



The screenshot shows the Selenium Grid Console v.3.9.1 interface. At the top, there is a dark blue header bar with the Selenium logo (a square with 'Se' and four colored dots) on the left, the text 'Grid Console v.3.9.1' in the center, and a 'Help' link on the right. Below the header, a dark grey bar displays 'DefaultRemoteProxy (version : 3.9.1)' and 'id : http://localhost:5555, OS : MAC'. The main content area has two tabs: 'Browsers' (active) and 'Configuration'. Under the 'Browsers' tab, the 'WebDriver' section lists three entries, each with a version number 'v:' followed by five browser icons (Internet Explorer, Firefox, Chrome, Safari, and Opera). A 'view config' link is located at the bottom left of the interface.



Use from Robotframework

เข้าหน้า login

Open Browser <http://localhost:8082/demo/>

... browser=chrome

... remote_url=<http://localhost:4444/wd/hub>

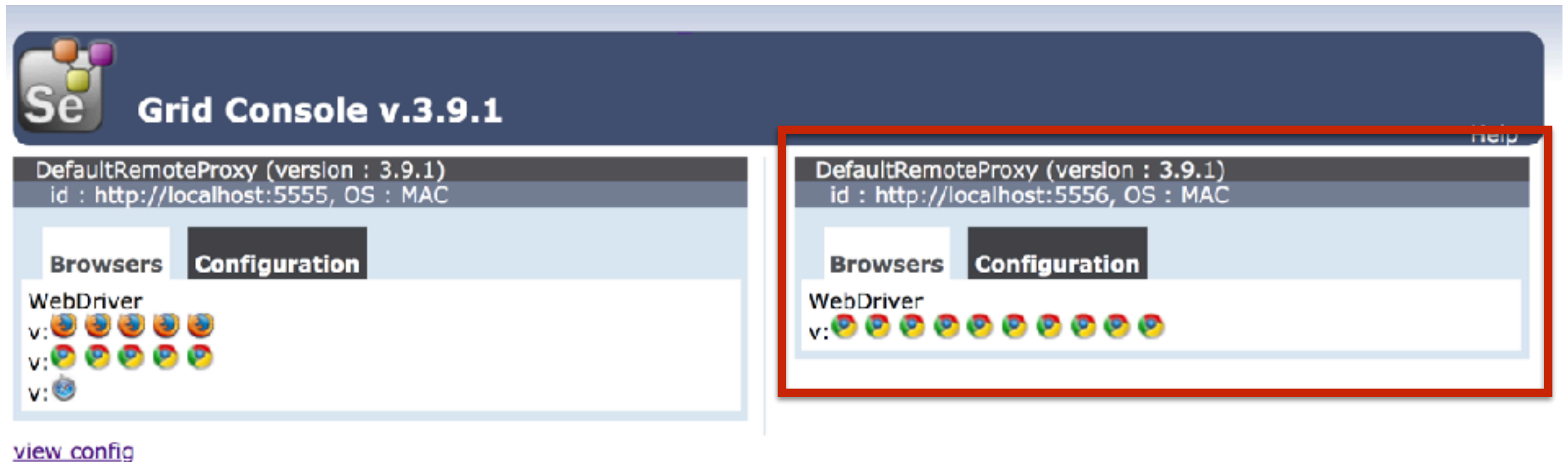
... desired_capabilities=browserName:chrome,platform:MAC,platformName:MAC



Try to configuration nodes



Node with Google chrome only



Se Grid Console v.3.9.1

DefaultRemoteProxy (version : 3.9.1)
id : http://localhost:5555, OS : MAC

Browsers **Configuration**

WebDriver
v: [10 Chrome icons]
v: [10 Chrome icons]
v: [10 Chrome icons]

[view config](#)

DefaultRemoteProxy (version : 3.9.1)
id : http://localhost:5556, OS : MAC

Browsers **Configuration**

WebDriver
v: [10 Chrome icons]



Node Configuration

file name = node_chrome.json

```
{  
  "capabilities":  
    [  
      {  
        "browserName": "chrome",  
        "maxInstances": 10,  
        "seleniumProtocol": "WebDriver"  
      }  
    ]  
}
```



Add Node to Hub

```
java -jar selenium-server-standalone-3.9.1.jar  
-role node  
-hub http://localhost:4444/grid/register  
-host localhost  
-nodeConfig node_chrome.json  
-port 5556
```



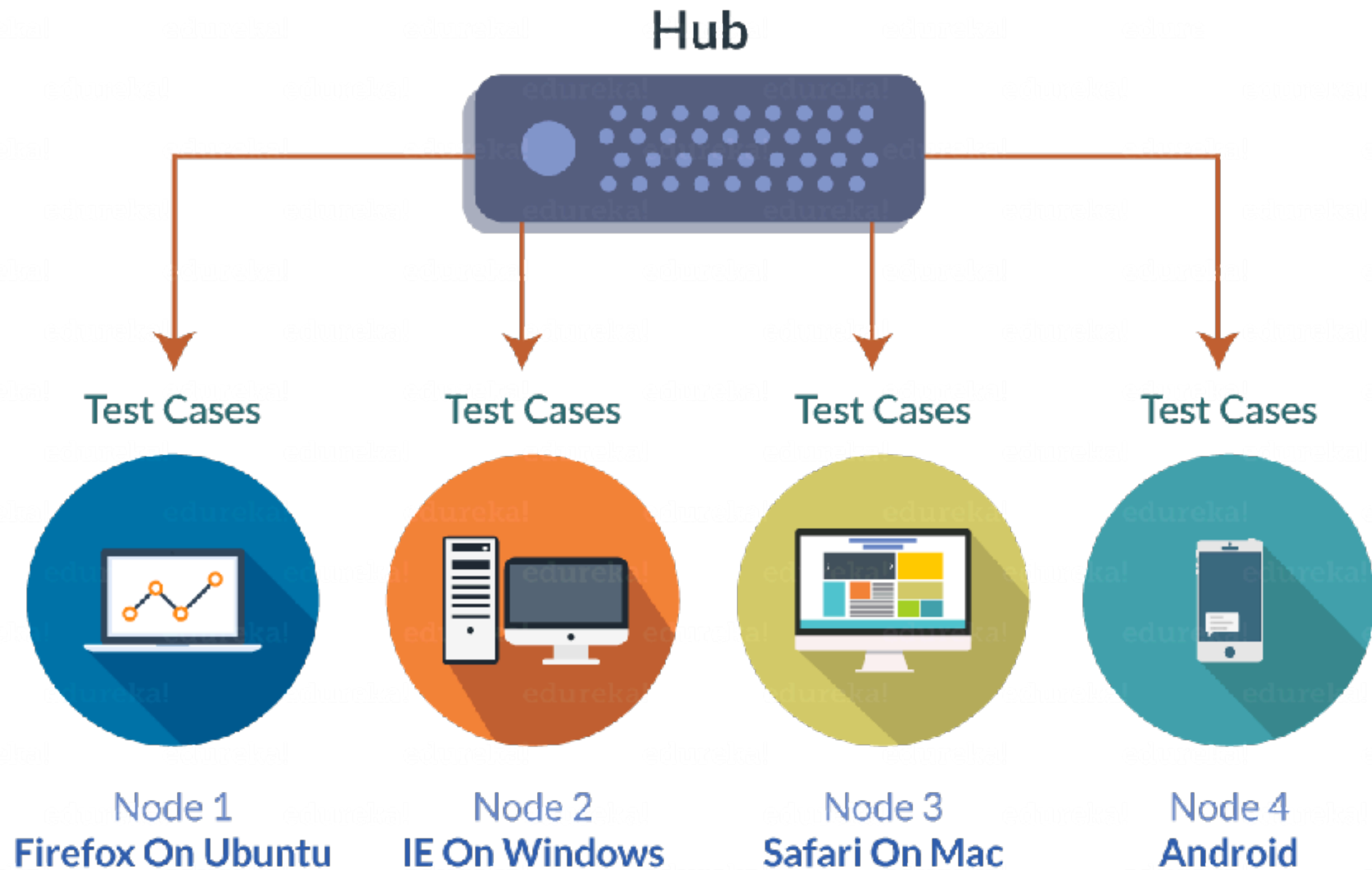
Try it by yourself



Selenium Grid with Docker



Selenium Grid



Create Hub

```
$docker container run -d -p 4444:4444 --name  
selenium_hub selenium/hub
```




Add node to hub :: Chrome

```
$docker run -d --link selenium_hub:hub selenium/  
node-chrome
```



Grid console




Grid Console v.3.8.1

DefaultRemoteProxy (version : 3.8.1)
id : http://172.17.0.4:5555, OS : LINUX

Browsers


Configuration

WebDriver
v:64.0.3282.119

[view config](#)




Try to add more nodes

**Grid Console v.3.8.1**Help

DefaultRemoteProxy (version : 3.8.1)
id : http://172.17.0.4:5555, OS : LINUX

Browsers


Configuration

WebDriver
v:64.0.3282.119

DefaultRemoteProxy (version : 3.8.1)
id : http://172.17.0.5:5555, OS : LINUX

Browsers


Configuration

WebDriver
v:64.0.3282.119

DefaultRemoteProxy (version : 3.8.1)
id : http://172.17.0.6:5555, OS : LINUX

Browsers


Configuration

WebDriver
v:64.0.3282.119

DefaultRemoteProxy (version : 3.8.1)
id : http://172.17.0.7:5555, OS : LINUX

Browsers

Configuration

WebDriver
v:64.0.3282.119

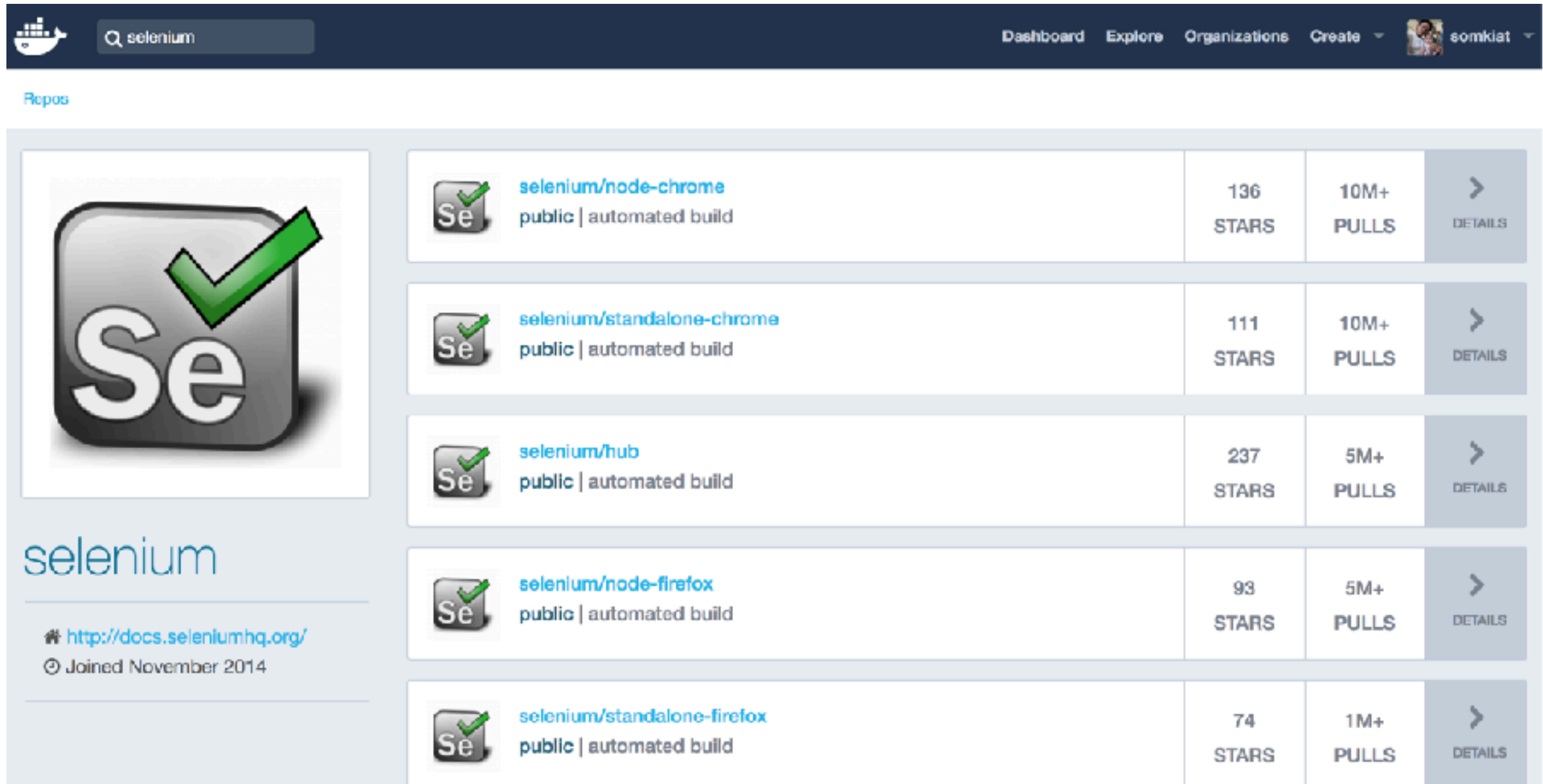
[view config](#)



More image of Selenium






<https://hub.docker.com/u/selenium/>

Repos



selenium

<http://docs.seleniumhq.org/>
Joined November 2014

 selenium/node-chrome public automated build	136 STARS	10M+ PULLS	> DETAILS
 selenium/standalone-chrome public automated build	111 STARS	10M+ PULLS	> DETAILS
 selenium/hub public automated build	237 STARS	5M+ PULLS	> DETAILS
 selenium/node-firefox public automated build	93 STARS	5M+ PULLS	> DETAILS
 selenium/standalone-firefox public automated build	74 STARS	1M+ PULLS	> DETAILS



Working with Docker compose



Docker compose

```
1  version: '3'
2  services:
3    hub:
4      image: selenium/hub
5      ports:
6        - 4444:4444
7
8    chrome:
9      image: selenium/node-chrome
10     volumes:
11       - /dev/shm:/dev/shm
12     depends_on:
13       - hub
14     environment:
15       HUB_HOST: hub
```



Start Hub and Node

```
$docker-compose up
```



Delete Hub and Node

`$docker-compose down`



Scale nodes

```
$docker-compose chrome --scale=4
```



Resources

<https://github.com/SeleniumHQ/selenium/wiki/Grid2>

<https://github.com/up1/course-ci-cd-with-jenkins>

