1. Install Docker
2. Check versions in cmd :
   1. “docker version”
   2. “docker-compose version”

Prerequisite : Inorder to create a container, we need an image first

1. Check docker images already avaliable : In cmd -> “docker images”

It shows all the images available in the local

1. To pull any docker image : “docker pull image-name”
2. To run a container using image : “docker run image-name” (or) “docker run -it image-name”
3. To stop a container : “docker stop image-name”
4. To show containers which are already running : “docker ps”
5. To remove the container : “docker rm <container id/name>
6. To show sizes and volume : “docker system df”
7. To forcefully remove all containers : “docker system prune -f”

**Integrating docker into our Selenium to run the automation in the containers :**

**Need Hub and nodes :**

1. Hub
2. Linux-firefox
3. Linux-chrome

**Selenium Grid setup with Docker containers :**

Pull docker images :

1. Pull selenium-hub image using command

Docker pull selenium/hub

1. Pull Firefox image using command

Docker pull selenium/node-firefox

1. Pull Chrome image using command

Docker pull selenium/node-chrome

**Steps :**

1. Nodes should be downloaded from the docker first to use them by Selenium Grid.
2. Docker provides images for OS and From image Container is created which is used as Virtual machine.

**For testing purpose - Without using docker :**

1. Standalone setup(Single Setup without using Docker) -> Where local system can act as a Hub and also a Node :
   1. Download Selenium Server jar and place in local machine
   2. Run command to start selenium grid -> java -jar selenium-server-version.jar standalone
   3. Url to see sessions : <http://localhost:4444/>
2. Distributed system(Hub and Node setup) -> Using multiple machines:
   1. Download Selenium Server jar and place in both in Hub local machine and other Node machines
   2. Run below command to make machine as hub - java -jar selenium-server-version.jar hub
   3. Run below command to make machine as node - java -jar selenium-server-version.jar node --hub <http://<hub-ip>:4444>
   4. URL to see sessions : <http://localhost:4444/>

**Selenium Grid With Docker :**

Need 3 images to download :

* 1. Hub
  2. Linux-firefox
  3. Linux-chrome

**Pull Docker images :**

docker pull selenium/hub

docker pull selenium/node-firefox

docker pull selenium/node-chrome

**Verify images :**

docker images

**Run below commands :**

docker network create network-name

To create hub ->

docker run -d -p 4442-4444:4442-4444 --net network-name --name selenium-hub selenium/hub

To create nodes ->

docker run -d --net network-name -e SE\_EVENT\_BUS\_HOST=selenium-hub -e SE\_EVENT\_BUS\_PUBLISH\_PORT=4442 -e SE\_EVENT\_BUS\_SUBSCRIBE\_PORT=4443 selenium/node-chrome

docker run -d --net network-name -e SE\_EVENT\_BUS\_HOST=selenium-hub -e SE\_EVENT\_BUS\_PUBLISH\_PORT=4442 -e SE\_EVENT\_BUS\_SUBSCRIBE\_PORT=4443 selenium/node-firefox

**docker-compose.yaml file :**

services:  
 selenium-hub:  
 image: selenium/hub:latest  
 ports:  
 - "4442-4444:4442-4444"  
 networks:  
 - grid  
  
 node-chrome:  
 image: selenium/node-chrome:latest  
 environment:  
 - SE\_EVENT\_BUS\_HOST=selenium-hub  
 - SE\_EVENT\_BUS\_PUBLISH\_PORT=4442  
 - SE\_EVENT\_BUS\_SUBSCRIBE\_PORT=4443  
 depends\_on:  
 - selenium-hub  
 networks:  
 - grid  
  
 node-firefox:  
 image: selenium/node-firefox:latest  
 environment:  
 - SE\_EVENT\_BUS\_HOST=selenium-hub  
 - SE\_EVENT\_BUS\_PUBLISH\_PORT=4442  
 - SE\_EVENT\_BUS\_SUBSCRIBE\_PORT=4443  
 depends\_on:  
 - selenium-hub  
 networks:  
 - grid  
  
networks:  
 grid:  
 driver: bridge

After saving this inside the Project, open cmd terminal in the file path and run -> docker-compose up

Check docker running containers :

