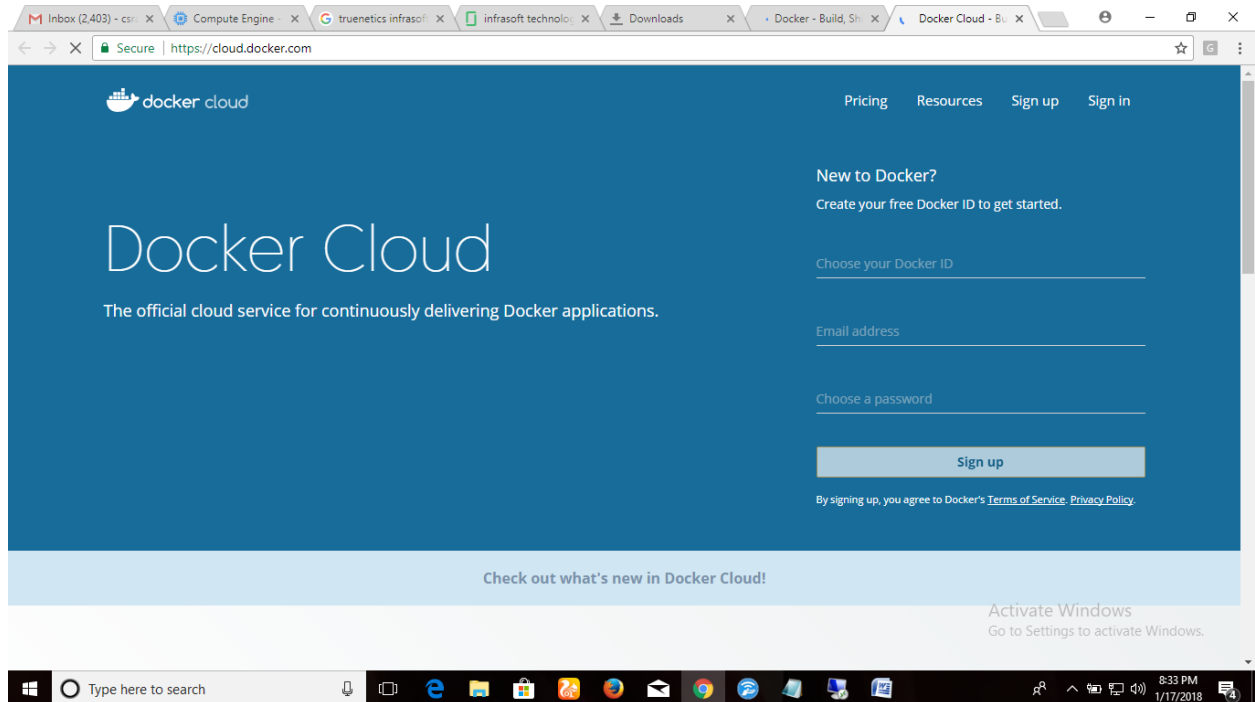


DOCKER

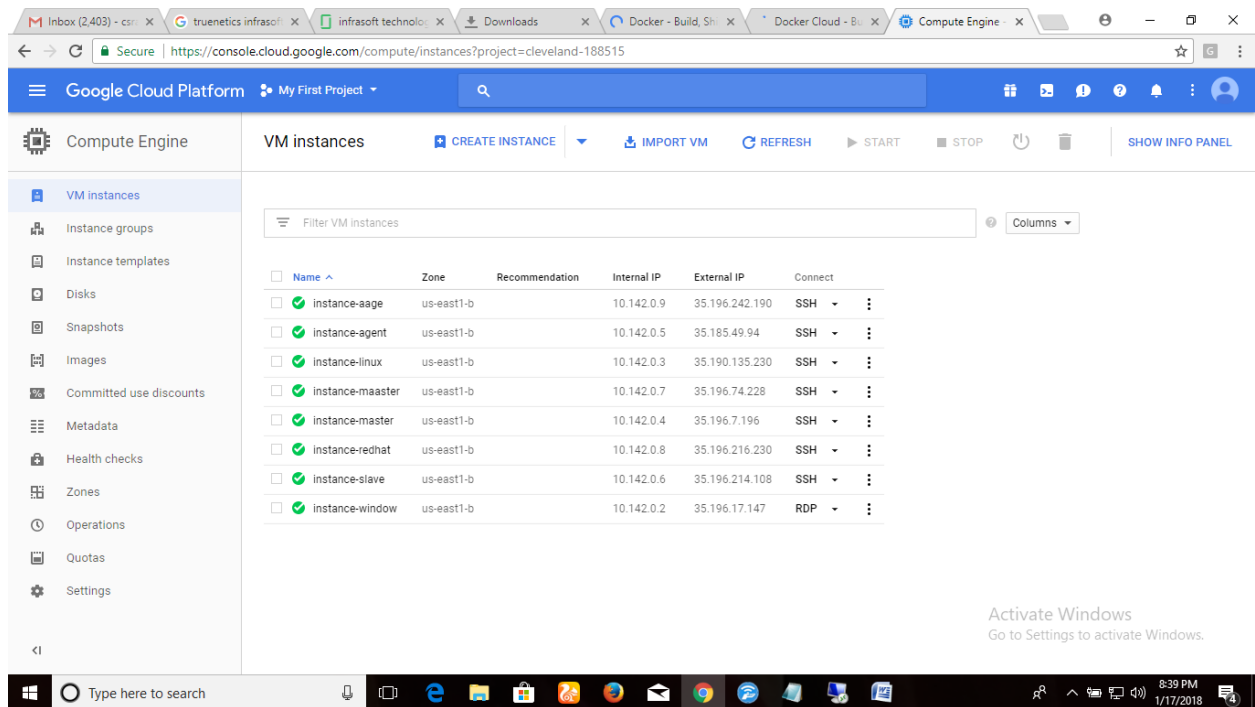
1) Sign up Docker by using following link <https://cloud.docker.com/>



2) Open a account of <https://cloud.google.com/>

3) Go to console

4) Next Compue Engine (u can see it on left side tab)



5) Click on SSH of instance-master (Note : Creating of instance explained in Puppet Document)

INSTALLATION OF DOCKER in CENT OS 7

(click on SSH of instance-master a terminal will get open run the following command in that)

1) To install Docker

sudo yum install -y docker

(it will take around 1-2 minutes to install)

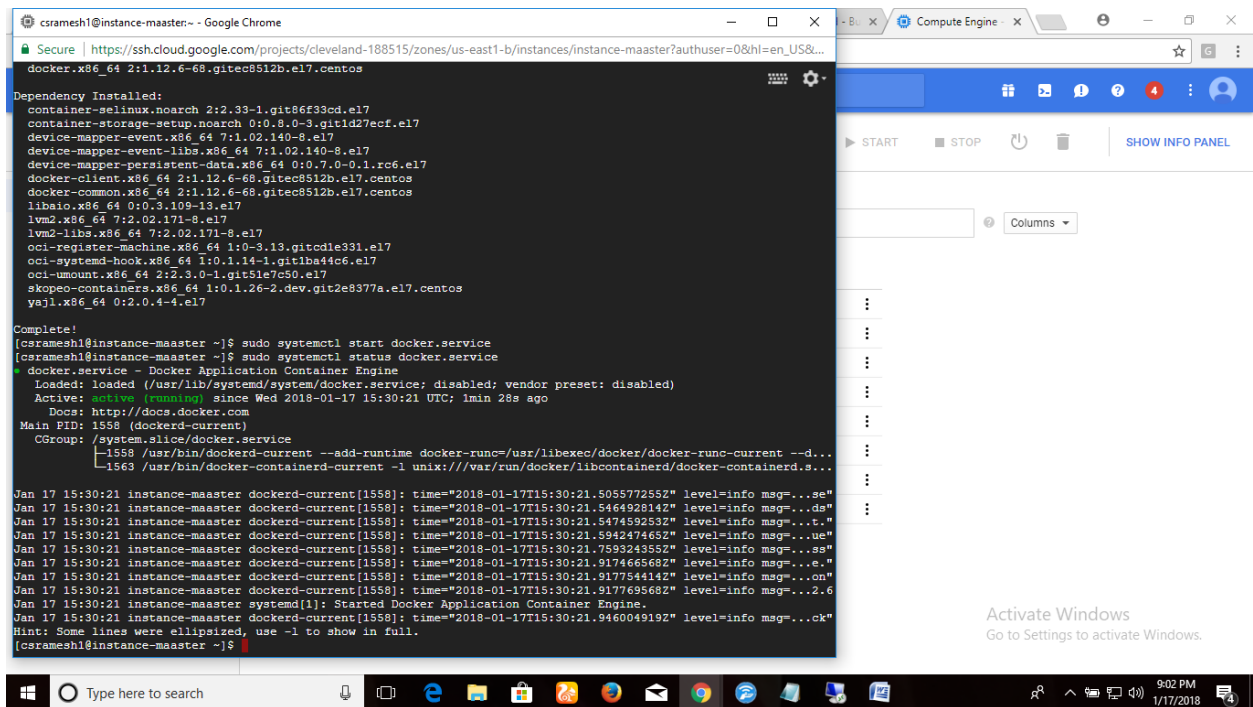
2) To start Dockler

sudo systemctl start docker.service

3) Now check the status of Docker

sudo systemctl status docker.service

(get confirmation it shows **active and running** in green colour)



```
csramesh1@instance-maaster ~$ sudo systemctl start docker.service
csramesh1@instance-maaster ~$ sudo systemctl status docker.service
● docker.service - Docker Application Container Engine
   Loaded: loaded (/usr/lib/systemd/system/docker.service; disabled; vendor preset: disabled)
   Active: active (running) since Wed 2018-01-17 15:30:21 UTC; 1min 28s ago
     Docs: http://docs.docker.com
    Main PID: 1558 (dockerd-current)
    CGroup: /system.slice/docker.service
            └─1558 /usr/bin/dockerd-current --add-runtime docker-runc=/usr/libexec/docker/docker-runc-current --d...
              └─1563 /usr/bin/docker-containerd-current -l unix:///var/run/docker/libcontainerd/docker-containerd.s...

Jan 17 15:30:21 instance-maaster dockerd-current[1558]: time="2018-01-17T15:30:21.505577255Z" level=info msg=...se"
Jan 17 15:30:21 instance-maaster dockerd-current[1558]: time="2018-01-17T15:30:21.546492614Z" level=info msg=...ds"
Jan 17 15:30:21 instance-maaster dockerd-current[1558]: time="2018-01-17T15:30:21.547459263Z" level=info msg=...t..."
Jan 17 15:30:21 instance-maaster dockerd-current[1558]: time="2018-01-17T15:30:21.594247463Z" level=info msg=...ue"
Jan 17 15:30:21 instance-maaster dockerd-current[1558]: time="2018-01-17T15:30:21.759324355Z" level=info msg=...se"
Jan 17 15:30:21 instance-maaster dockerd-current[1558]: time="2018-01-17T15:30:21.917466568Z" level=info msg=...e."
Jan 17 15:30:21 instance-maaster dockerd-current[1558]: time="2018-01-17T15:30:21.917754414Z" level=info msg=...on"
Jan 17 15:30:21 instance-maaster dockerd-current[1558]: time="2018-01-17T15:30:21.917769568Z" level=info msg=...2.6"
Jan 17 15:30:21 instance-maaster systemd[1]: Started Docker Application Container Engine.
Jan 17 15:30:21 instance-maaster dockerd-current[1558]: time="2018-01-17T15:30:21.946004919Z" level=info msg=...ck"
Hint: Some lines were ellipsized, use -l to show in full.
csramesh1@instance-maaster ~$
```

4) To check Docker version

sudo docker version

5) To create container

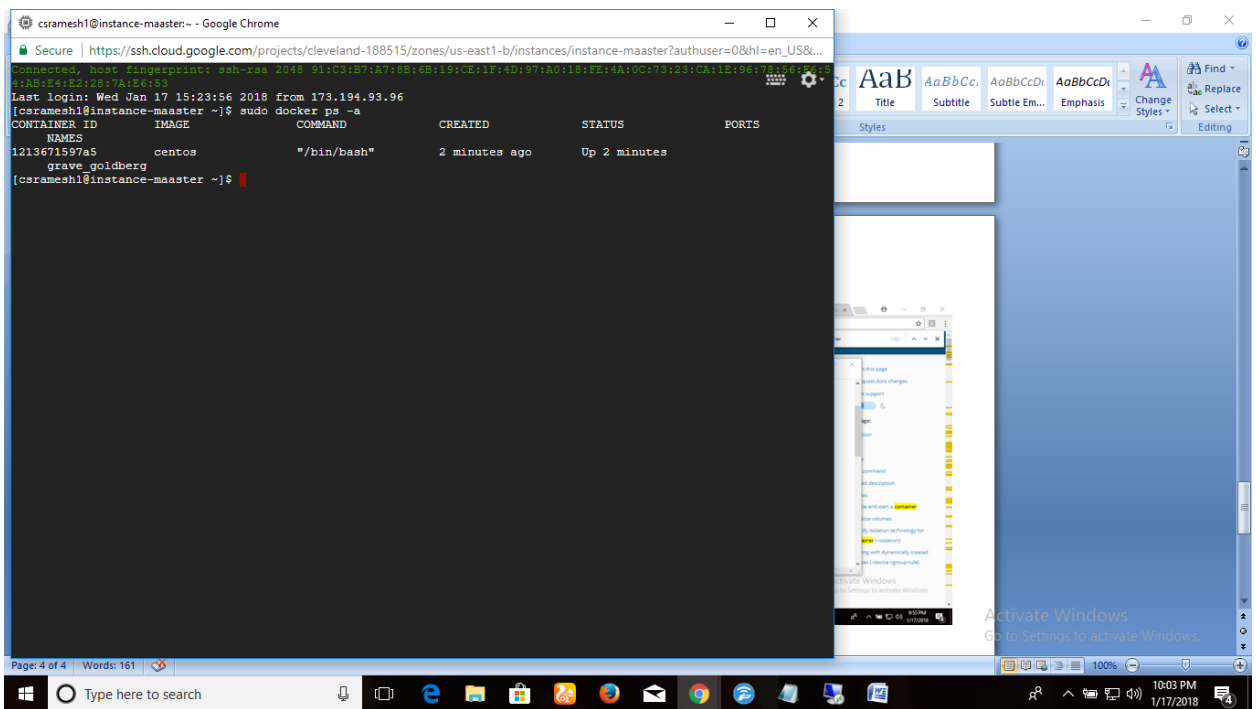
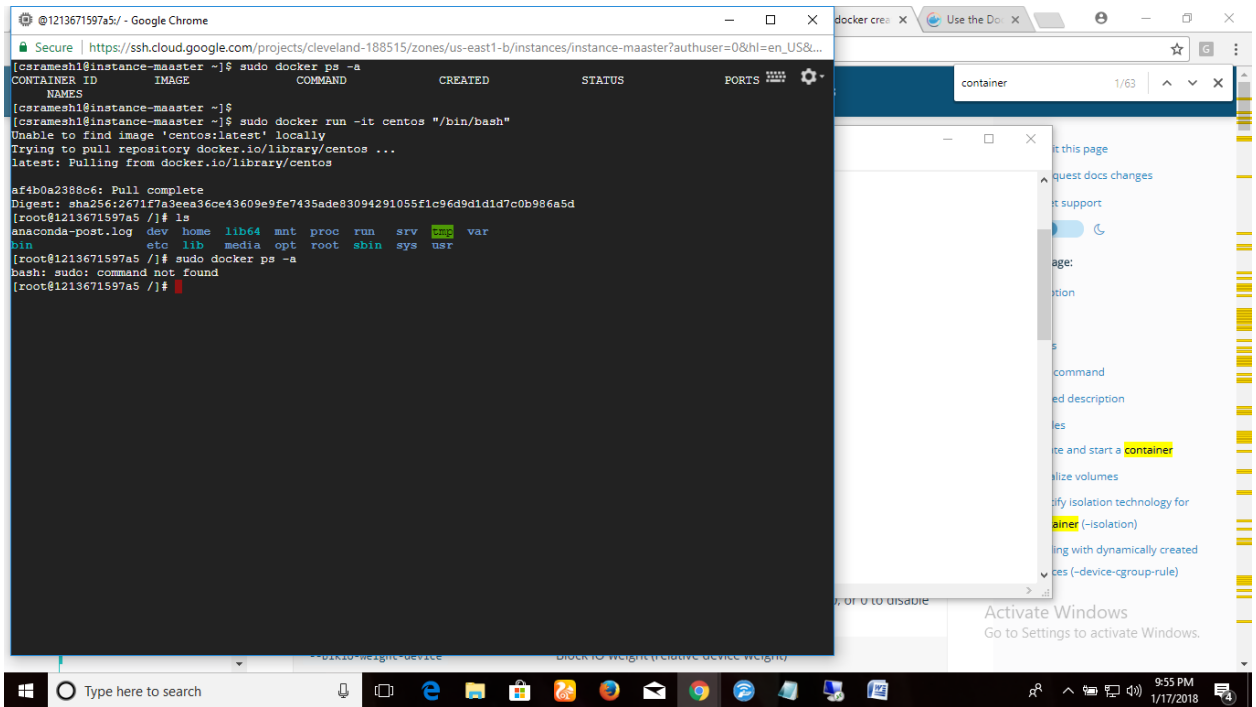
sudo docker run -it centos "/bin/bash"

6) To check container

sudo docker ps -a

(from running this command we can find container id which is first Status Uptime)

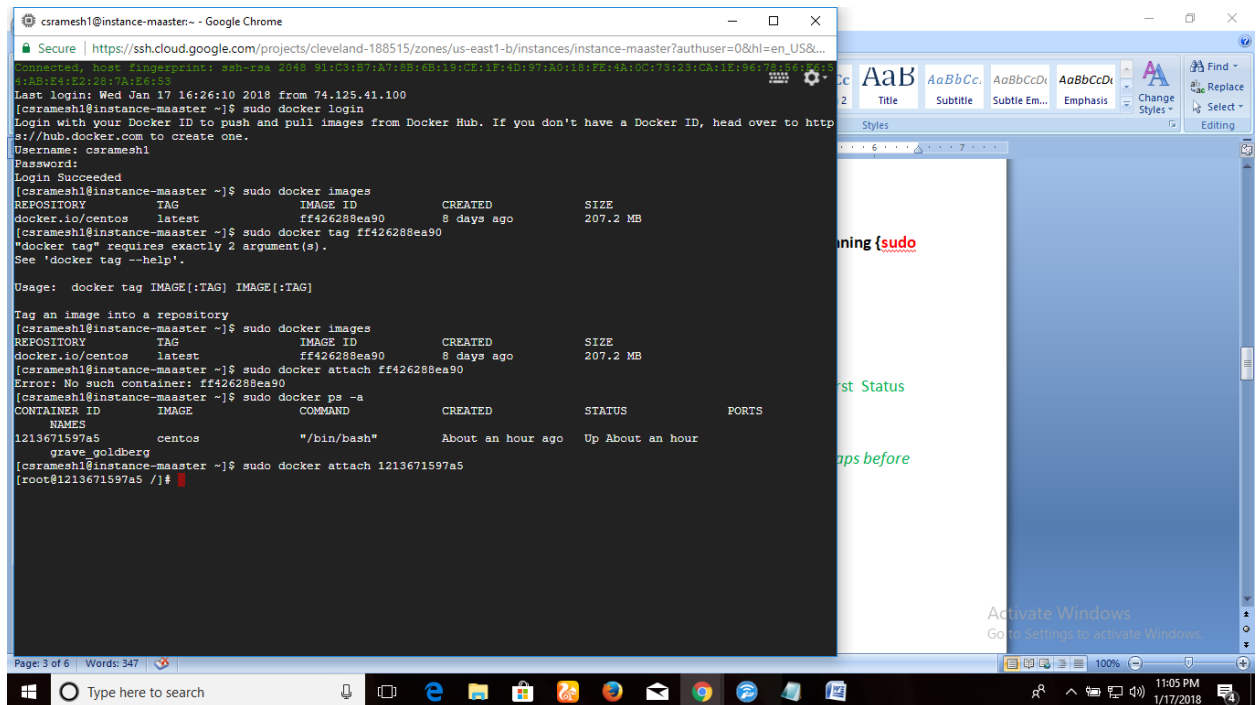
(You can see difference of two commands execution in below snaps before and after commands)



(Some time it will display **command not found** there may be chances of abortion in connection that's why need close terminal & re-open it by clicking on SSH)

7) To get inside of container

sudo docker attach container id (u can find container id by running **{sudo docker ps -a }**
(to get confirm)



```
csramesh1@instance-maaster ~$ sudo docker images
REPOSITORY          TAG                 IMAGE ID            CREATED             SIZE
docker.io/centos     latest             ff426288ea90        8 days ago         207.2 MB
csramesh1@instance-maaster ~$ sudo docker attach ff426288ea90
Error: No such container: ff426288ea90
csramesh1@instance-maaster ~$ sudo docker ps -a
CONTAINER ID        IMAGE               COMMAND             CREATED             STATUS              PORTS
1213671597a5        centos              "/bin/bash"         About an hour ago   Up About an hour
csramesh1@instance-maaster ~$ sudo docker attach 1213671597a5
root@1213671597a5 /]#
```

```
csramesh1@instance-maaster ~]$ sudo docker attach 1213671597a5
root@1213671597a5 /]#
```

It will change to root @container id

To attach container

sudo docker attach 1213671597a5

Container id

sudo docker attach containerid

(note : pls paste ur own container id as appear in terminal while running command **sudo docker ps -a**)

8) To remove container

sudo docker rm container id

(u can remove container)

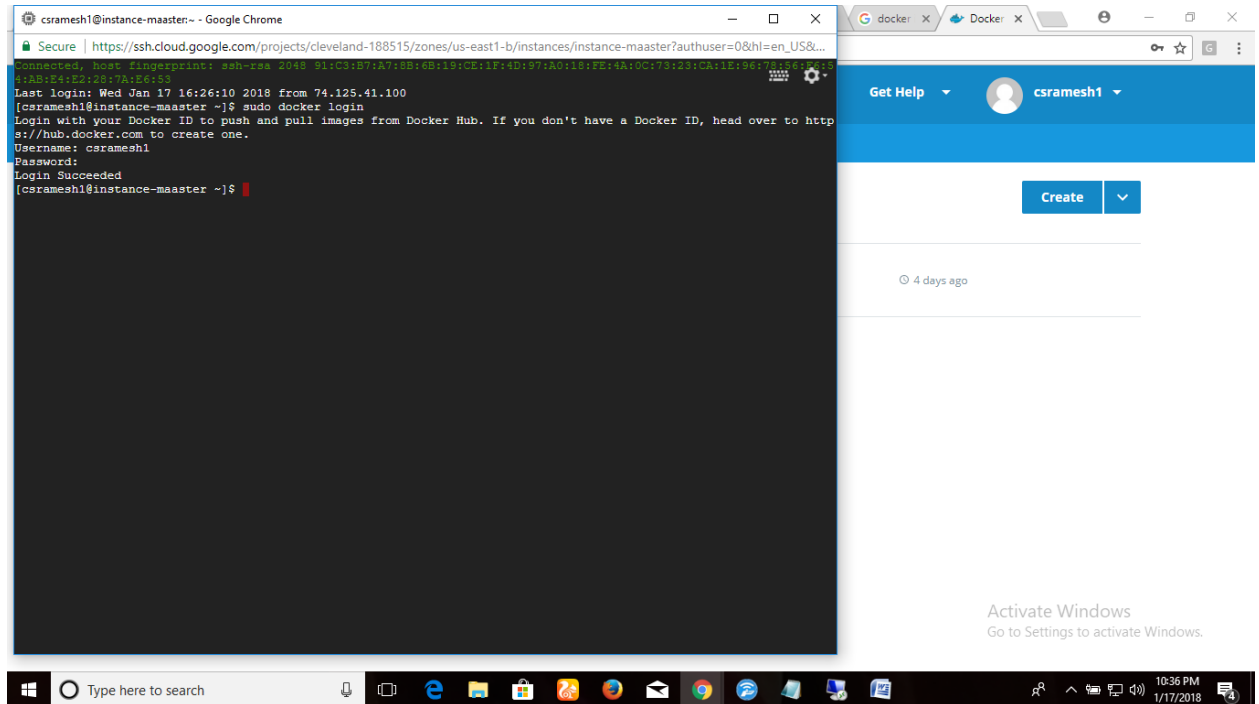
9) Creation of Docker images

(to create docker images sign in to docker hub which one created before ..

here is the link <https://www.docker.com>

Sudo docker login

(after running above command it will ask username & password use the same while u have given at the time of sign up)



10) Exit from container

exit

(Type exit and enter if u want to come outside from container the below commands won't work I mean it displays command not found)

11) To see docker images

sudo docker images

12) To push image to docker hub

sudo docker push imageid

(type image id in above command)

(image id & container id would be different)

```
Error response from daemon: Get https://registry-1.docker.io/v2/: unauthorized: incorrect username or password
[csramesh1@instance-master ~]$ sudo docker login
Login with your Docker ID to push and pull images from Docker Hub. If you don't have a Docker ID, head over to http
s://hub.docker.com to create one.
Username (csramesh1): csramesh1
Password:
Login Succeeded
[csramesh1@instance-master ~]$ sudo docker ps -a
```

CONTAINER ID	IMAGE	COMMAND	CREATED	STATUS	PORTS
7b3e1b88c8da	apache:1.0	"/usr/sbin/httpd -D F"	3 days ago	Up 3 days	0.0.0.0:80
7d32a95c7502	centos	"/bin/bash"	4 days ago	Up 4 days	
31936c3d7df7	centos	"/bin/bash"	4 days ago	Up 4 days	

```
[csramesh1@instance-master ~]$ sudo docker attach 31936c3d7df7
[root@31936c3d7df7 /]# sudo docker images
sudo: docker: command not found
[root@31936c3d7df7 /]# sudo docker image
sudo: docker: command not found
[root@31936c3d7df7 /]# exit
exit
[csramesh1@instance-master ~]$ sudo docker images
```

REPOSITORY	TAG	IMAGE ID	CREATED	SIZE
apache	1.0	1d5ed4ee340e	3 days ago	330.7 MB
csramesh1/csr	latest	ff426288ea90	8 days ago	207.2 MB
docker.io/centos	latest	ff426288ea90	8 days ago	207.2 MB
csramesh1/apache1.0	latest	ff426288ea90	8 days ago	207.2 MB

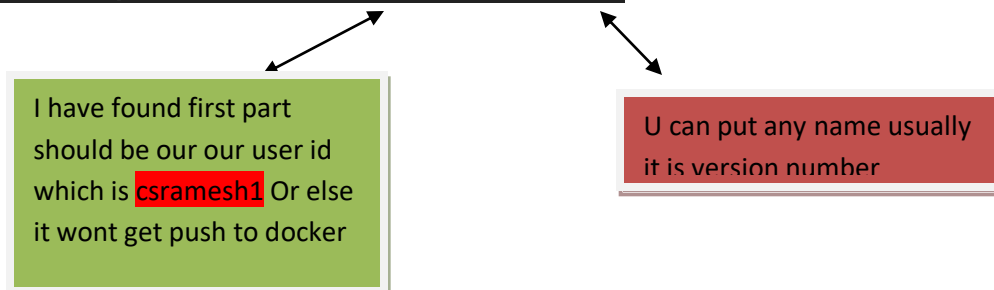
13) To tag the docker image

sudo docker tag image id givedifferent name

```
sudo docker tag 1d5ed4ee340e csramesh1/version
```

(tagging means it is replica of same image I mean we are changing the name of image)

```
sudo docker tag 1d5ed4ee340e csramesh1/version
```



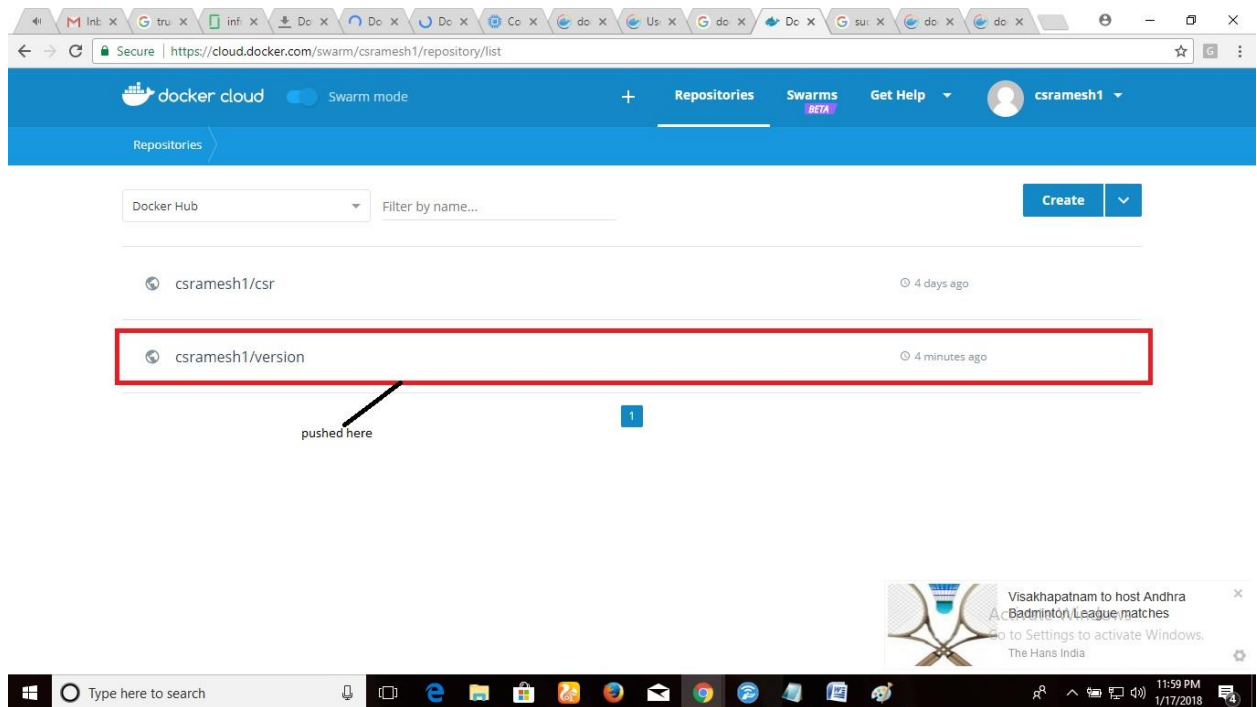
14) To push docker image to docker hub

sudo docker push image

```
sudo docker push csramesh1/version
```

```
csramesh1@instance-master:~ - Google Chrome
Error response from daemon: Get https://registry-1.docker.io/v2/: unauthorized: incorrect username or password
[csramesh1@instance-master ~]$ sudo docker login
Login with your Docker ID to push and pull images from Docker Hub. If you don't have a Docker ID, head over to https://hub.docker.com to create one.
Username (csramesh1): csramesh1
Password:
Login Succeeded
[csramesh1@instance-master ~]$ sudo docker ps -a
CONTAINER ID        IMAGE               COMMAND             CREATED             STATUS              PORTS
7b3e1b88c8da        apache:1.0          "/usr/sbin/httpd -D F"   3 days ago         Up 3 days          0.0.0.0:80
--80/tcp            apache_server
7d32a95c7502        centos              "/bin/bash"          4 days ago         Up 4 days
sick_shaw
31936c3dfd77        centos              "/bin/bash"          4 days ago         Up 4 days
tender_pike
[csramesh1@instance-master ~]$ sudo docker attach 31936c3dfd77
[root@31936c3dfd77 /]# sudo docker images
sudo: docker: command not found
[root@31936c3dfd77 /]# sudo docker image
sudo: docker: command not found
[root@31936c3dfd77 /]# exit
exit
[csramesh1@instance-master ~]$ sudo docker images
REPOSITORY          TAG                 IMAGE ID            CREATED             SIZE
apache               1.0                1d5ed4ee340e        3 days ago         330.7 MB
csramesh1/csr        latest             1d5ed4ee340e        3 days ago         330.7 MB
docker.io/centos     latest             ff426288ea90        8 days ago         207.2 MB
ramesh/apache1.0     latest             ff426288ea90        8 days ago         207.2 MB
[csramesh1@instance-master ~]$ sudo docker tag 1d5ed4ee340e csramesh1/version
[csramesh1@instance-master ~]$ sudo docker images
REPOSITORY          TAG                 IMAGE ID            CREATED             SIZE
apache               1.0                1d5ed4ee340e        3 days ago         330.7 MB
csramesh1/version    latest             1d5ed4ee340e        3 days ago         330.7 MB
csramesh1/csr        latest             ff426288ea90        8 days ago         207.2 MB
docker.io/centos     latest             ff426288ea90        8 days ago         207.2 MB
ramesh/apache1.0     latest             ff426288ea90        8 days ago         207.2 MB
[csramesh1@instance-master ~]$ sudo docker push csramesh1/version
The push refers to a repository [docker.io/csramesh1/version]
02d110545307: Pushed
e151afa4850b6: Mounted from csramesh1/csr
latest: digest: sha256:a47af458d7913e927acd4b22e47058e5f5144c620ed4f8a00b9924aa33f895e8 size: 741
[csramesh1@instance-master ~]$
```

Now we can see whether the image or repository has been pushed or not
...Go to docker hub



Now we will create our own customized image

1) Create a repository

mkdir reponame

cd reponame

vi dockerfile (image file)

2) Paste the below as same (u can customize ur self)

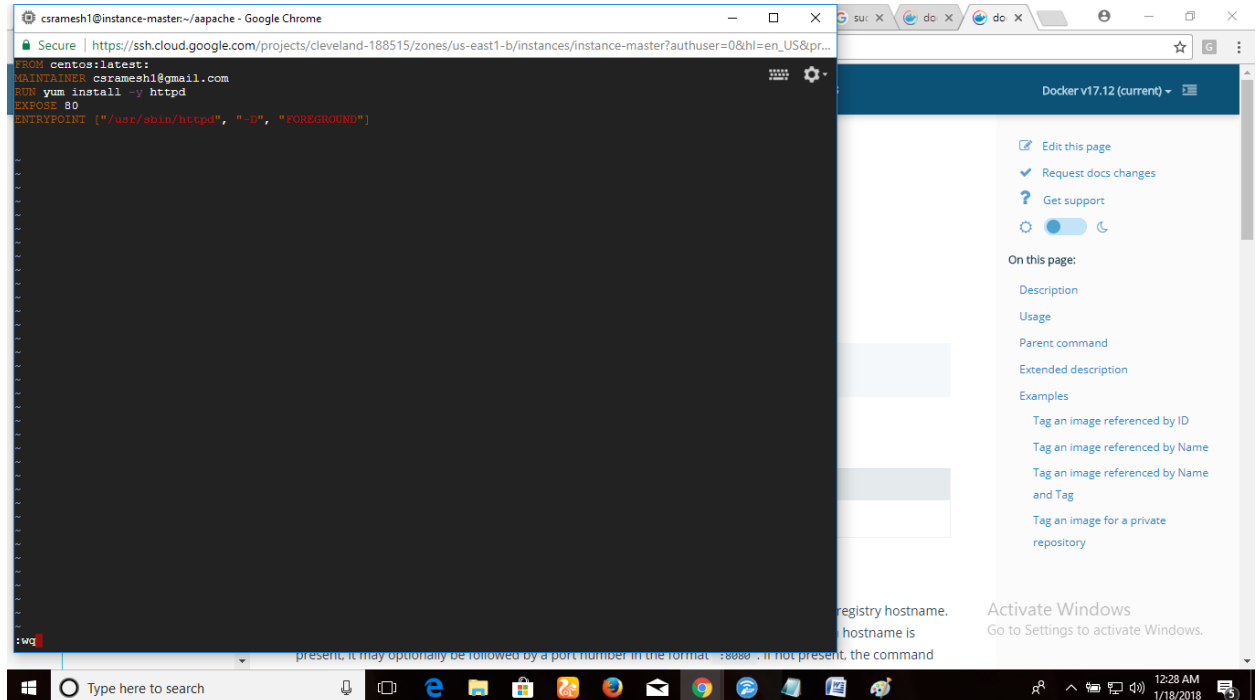
FROM centos:latest

MAINTAINER csramesh1@gmail.com

RUN yum install -y httpd

EXPOSE 80

ENTRYPOINT ["/usr/sbin/httpd", "-D", "FOREGROUND"]



(above containt is case sensitive) or else it wont work

1st line is OS

2nd line is maintainer

3rd we installing a service apache

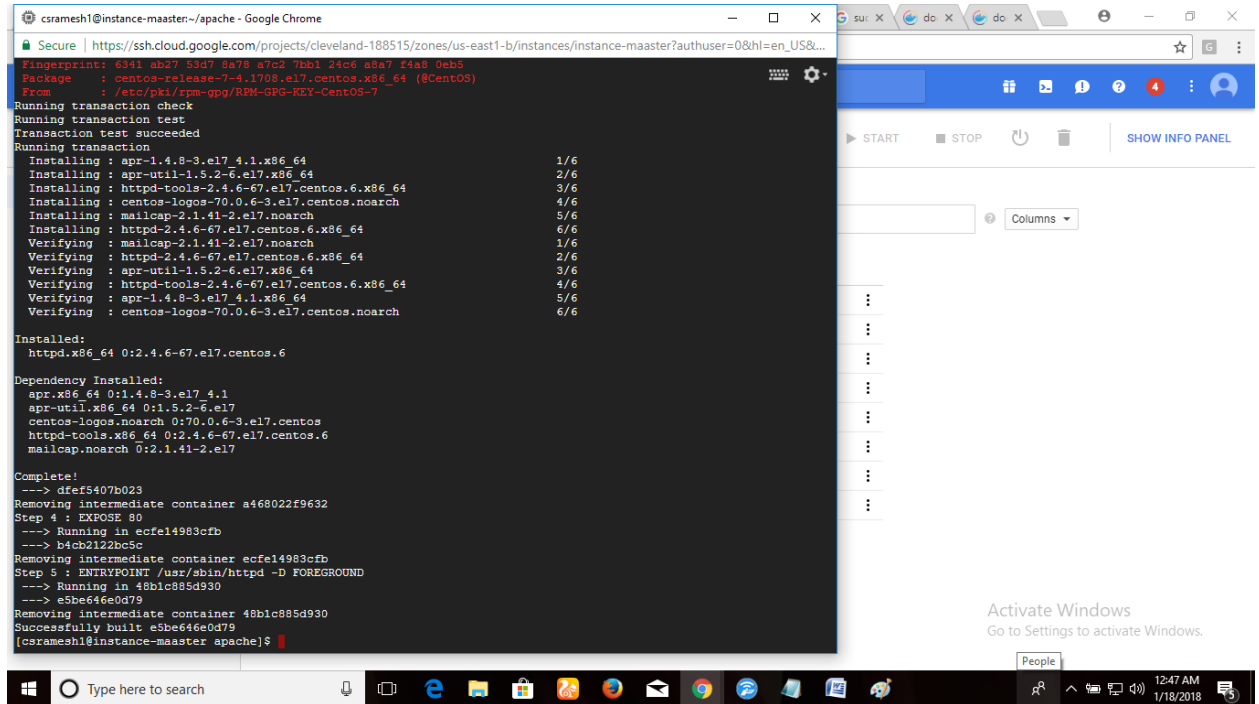
4th port number

5th how we run the services ?

Save it (esc :wq)

3) We need to build image

sudo docker build -t apache:1.0 .



```
csramesh1@instance-maaster ~/apache - Google Chrome
Secure | https://ssh.cloud.google.com/projects/cleveland-188515/zones/us-east1-b/instances/instance-maaster?authuser=0&hl=en_US&...
Fingerprint: 6341 ab27 53d7 8a79 a7c2 7bb1 24c6 a5a7 f4a8 0eb5
Package      : centos-release-7-4.1708.el7.centos.x86_64 ($CentOS)
From         : /etc/pki/rpm-gpg/RPM-GPG-KEY-CentOS-7
Running transaction check
Running transaction test
Transaction test succeeded
Running transaction
Installing : apr-1.4.8-3.el7.4.1.x86_64                1/6
Installing : apr-util-1.5.2-6.el7.x86_64              2/6
Installing : httpd-tools-2.4.6-67.el7.centos.6.x86_64  3/6
Installing : centos-logos-70.0.6-3.el7.centos.noarch  4/6
Installing : mailcap-2.1.41-2.el7.noarch               5/6
Installing : httpd-2.4.6-67.el7.centos.6.x86_64       6/6
Verifying  : mailcap-2.1.41-2.el7.noarch               1/6
Verifying  : httpd-2.4.6-67.el7.centos.6.x86_64       2/6
Verifying  : apr-util-1.5.2-6.el7.x86_64              3/6
Verifying  : httpd-tools-2.4.6-67.el7.centos.6.x86_64  4/6
Verifying  : apr-1.4.8-3.el7.4.1.x86_64              5/6
Verifying  : centos-logos-70.0.6-3.el7.centos.noarch   6/6

Installed:
httpd.x86_64 0:2.4.6-67.el7.centos.6

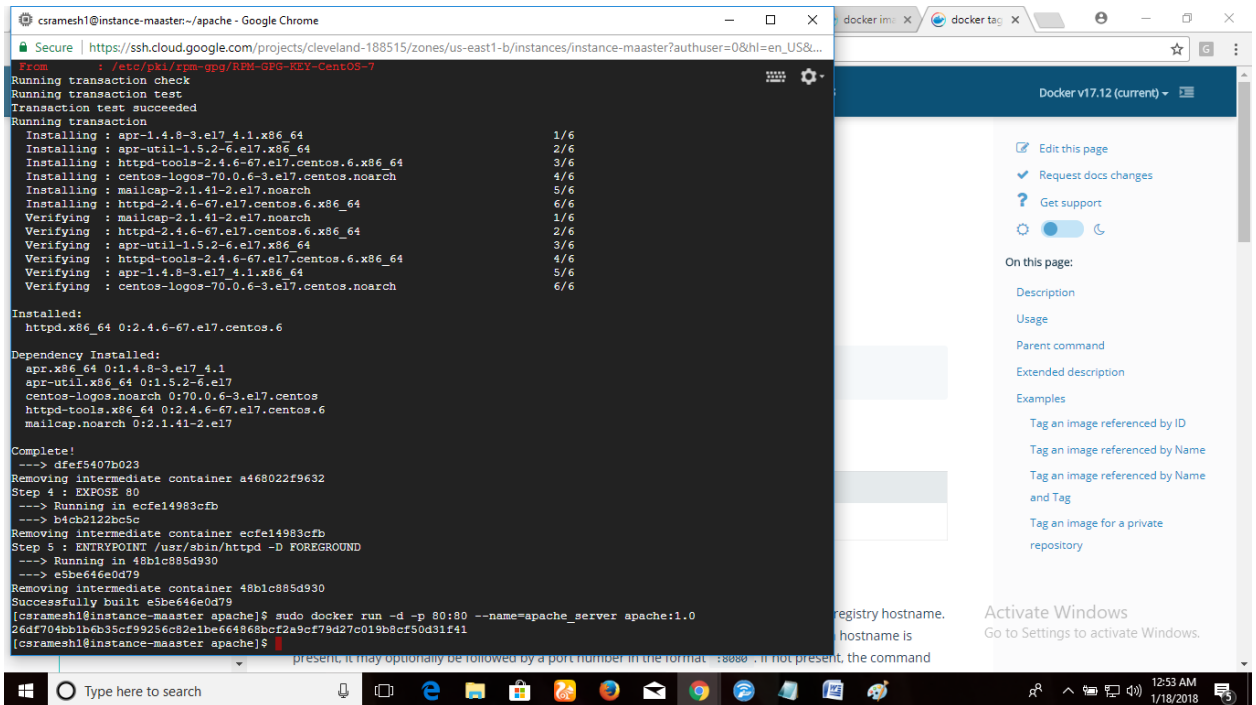
Dependency Installed:
apr.x86_64 0:1.4.8-3.el7.4.1
apr-util.x86_64 0:1.5.2-6.el7
centos-logos.noarch 0:70.0.6-3.el7.centos
httpd-tools.x86_64 0:2.4.6-67.el7.centos.6
mailcap.noarch 0:2.1.41-2.el7

Complete!
--> dfe5407b023
Removing intermediate container a468022f9632
Step 4 : EXPOSE 80
--> Running in ecfe14983c9b
--> b4cb2122bc5c
Removing intermediate container ecfe14983c9b
Step 5 : ENVIRONMENT /usr/sbin/httpd -D FOREGROUND
--> Running in 48b1c885d930
--> e5be646e0d79
Removing intermediate container 48b1c885d930
Successfully built e5be646e0d79
[csramesh1@instance-maaster apache]$
```

(after running command we can see successfully built u can see in above image)

4) Now create the container and run it by following command

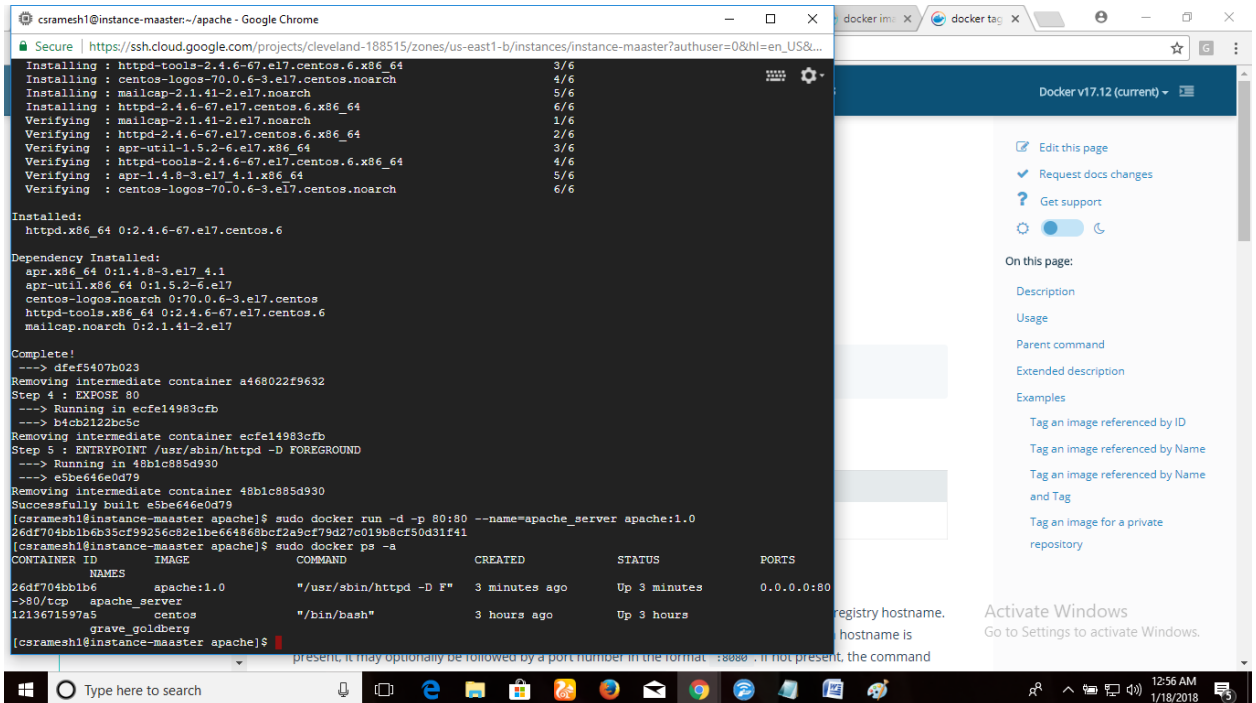
sudo docker run -d -p 80:80 --name=apache_server apache:1.0



5) Now u can check it by command

sudo docker ps -a

(u can see in below image container has been created)



U can see port number as per above command

```
csramesh1@instance-maaster ~/apache - Google Chrome
Secure | https://ssh.cloud.google.com/projects/cleveland-188515/zones/us-east1-b/instances/instance-maaster?authuser=0&hl=en_US&...

Installing : httpd-tools-2.4.6-67.el7.centos.6.x86_64 3/6
Installing : centos-logos-70.0.6-3.el7.centos.noarch 4/6
Installing : mailcap-2.1.41-2.el7.noarch 5/6
Installing : httpd-2.4.6-67.el7.centos.6.x86_64 6/6
Verifying : mailcap-2.1.41-2.el7.noarch 1/6
Verifying : httpd-2.4.6-67.el7.centos.6.x86_64 2/6
Verifying : apr-util-1.5.2-6.el7.x86_64 3/6
Verifying : httpd-tools-2.4.6-67.el7.centos.6.x86_64 4/6
Verifying : apr-1.4.8-3.el7 4.1.x86_64 5/6
Verifying : centos-logos-70.0.6-3.el7.centos.noarch 6/6

Installed:
httpd.x86_64 0:2.4.6-67.el7.centos.6

Dependency Installed:
apr.x86_64 0:1.4.8-3.el7 4.1
apr-util.x86_64 0:1.5.2-6.el7
centos-logos.noarch 0:70.0.6-3.el7.centos
httpd-tools.x86_64 0:2.4.6-67.el7.centos.6
mailcap.noarch 0:2.1.41-2.el7

Complete!
--> dref5407b023
Removing intermediate container a468022f9632
Step 4 : EXPOSE 80
--> b4cb2122b85c
Removing intermediate container ecfe14983cfb
Step 5 : ENTRYPOINT /usr/sbin/httpd -D FOREGROUND
--> Running in 48b1c885d930
--> e5be646e0d79
Removing intermediate container 48b1c885d930
Successfully built e5be646e0d79
[csramesh1@instance-maaster apache]$ sudo docker run -d -p 80:80 --name=apache_server apache:1.0
26d4704bb1b6b35cf99256c82e1b0e4868b0cf2a9cf79d27c019b8cf50d31f41
[csramesh1@instance-maaster apache]$ sudo docker ps -a

CONTAINER ID        IMAGE               COMMAND             CREATED             STATUS              PORTS
26d4704bb1b6        apache:1.0         "/usr/sbin/httpd -D F"   3 minutes ago       Up 3 minutes        0.0.0.0:80->80/tcp
1224c1c777a5        centos              "/bin/bash"          3 hours ago         Up 3 hours

[csramesh1@instance-maaster apache]$
```

6) (u can push or pull the images as per commonds)

sudo docker push imageid

sudo docker pull imageid

(please google other usefull commonds & how to createt customised images)

Ex: <https://docs.docker.com/engine/reference/commandline/attach/>