

# Saving changes to docker

## Problem Statement:

You work as a DevOps Engineer in Grape Vine Pvt. Ltd. Your company is ready to launch the new website, but before they need to see test whether their front-end if functioning or not. They've asked you to create an isolated environment that will be used for deploying the front-end and also then deploy it. Finally, they've also asked you to distribute the environment blueprint among your peers.

## Assumptions:

1. The software to be used is apache2.
2. Ubuntu will be used as the base OS.
3. GitHub URL for the web code is given below:

<https://github.com/hshar/website>

## Tasks to be Completed:

1. Create a custom image with the assumptions in mind.
2. Deploy the website with web code given.
3. Push container image to Docker Hub.

**Operation 1:** Pull the Docker Container using the command

`sudo docker pull ubuntu`

```
ubuntu@ip-172-31-83-79:~$ sudo docker pull ubuntu
Using default tag: latest
latest: Pulling from library/ubuntu
Digest: sha256:1b8d8ff4777f36f19bfe73ee4df61e3a0b789caeff29caa019539ec7c9a57f95
Status: Image is up to date for ubuntu:latest
docker.io/library/ubuntu:latest
ubuntu@ip-172-31-83-79:~$
```

`sudo docker images` (to check images)

```
ubuntu@ip-172-31-83-79:~$ sudo docker images
REPOSITORY    TAG        IMAGE ID      CREATED        SIZE
ubuntu        latest     7af9ba4f0a47  12 days ago    77.9MB
ubuntu@ip-172-31-83-79:~$
```

**Operation 2:** now create container using image

`sudo docker run -it -d --name <container_name> <image_name>`

and write

`sudo docker ps` (to check running containers)

```
ubuntu@ip-172-31-83-79:~$ sudo docker run -it -d --name grape-vine ubuntu
2c0fdb7e5c6bd95e9dcfe80eb873fe81f76d341a7458987a3522810cf9755211
ubuntu@ip-172-31-83-79:~$ sudo docker ps
CONTAINER ID   IMAGE     COMMAND                  CREATED        STATUS        PORTS        NAMES
2c0fdb7e5c6b   ubuntu   "/bin/bash"             6 seconds ago Up 5 seconds          grape-vine
64f957e74b4e   ubuntu   "/bin/bash"             2 hours ago   Up 2 hours          my-demo
```

**Operation 3:** now access the container using the command

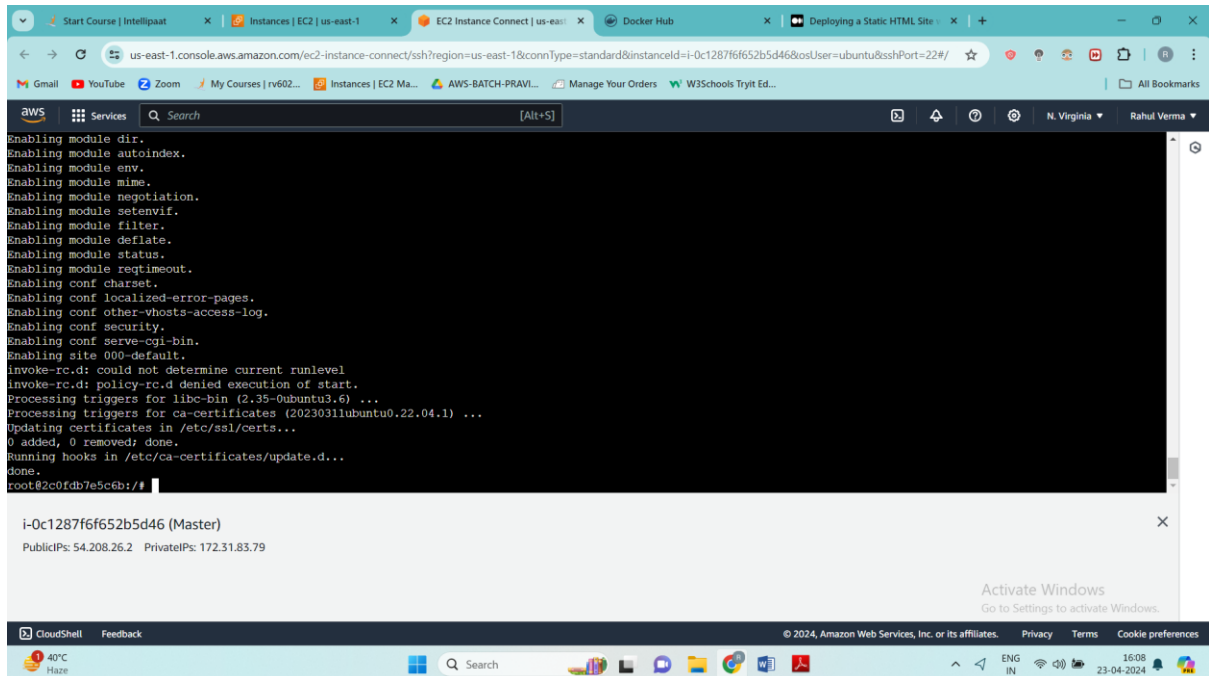
`sudo docker exec it <container_id> bash`

```
ubuntu@ip-172-31-83-79:~$ sudo docker exec -it 2c0fdb7e5c6b bash
root@2c0fdb7e5c6b:/#
```

**Operation 4:** now install apache

```
apt-get update
```

```
apt-get install apache2 -y
```



The screenshot shows an AWS CloudShell terminal window. The terminal output displays the process of updating the package list and installing Apache2. The output includes messages such as "Enabling module dir.", "Enabling module autoindex.", "Enabling module env.", "Enabling module mime.", "Enabling module negotiation.", "Enabling module setenvif.", "Enabling module filter.", "Enabling module deflate.", "Enabling module status.", "Enabling module regtimeout.", "Enabling module charset.", "Enabling conf localized-error-pages.", "Enabling conf other-vhosts-access-log.", "Enabling conf security.", "Enabling conf serve-cgi-bin.", "Enabling site 000-default.", "invoke-rc.d: could not determine current runlevel", "invoke-rc.d: policy-rc.d denied execution of start.", "Processing triggers for libc-bin (2.35-0ubuntu3.6) ...", "Processing triggers for ca-certificates (20230311ubuntu0.22.04.1) ...", "Updating certificates in /etc/ssl/certs...", "0 added, 0 removed; done.", "Running hooks in /etc/ca-certificates/update.d...", and "done.". The terminal prompt is "root@2c0fdb7e5c6b:/#".

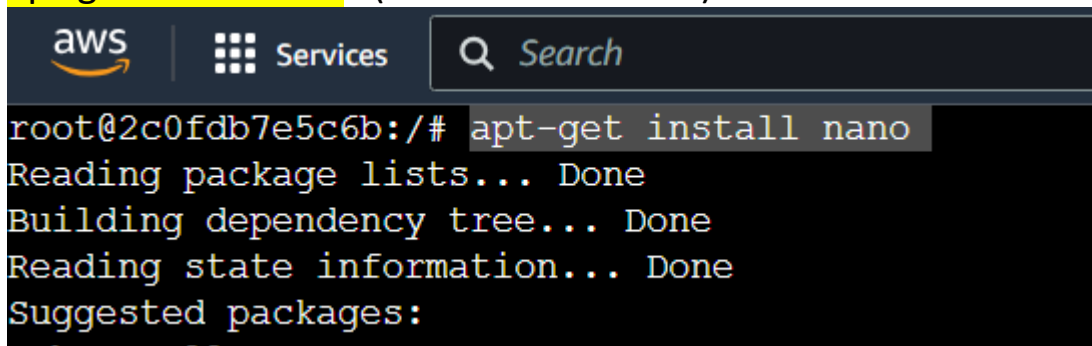
Operation 5: now change the directory

```
cd /var/www/html
```

```
ls
```

```
root@2c0fdb7e5c6b:/# ls
bin boot dev etc home lib lib32 lib64 libx32 media mnt opt proc root run sbin srv sys usr var
root@2c0fdb7e5c6b:/# cd /var/www/html
root@2c0fdb7e5c6b:/var/www/html# ls
index.html
root@2c0fdb7e5c6b:/var/www/html#
```

```
apt-get install nano (install nano editor)
```



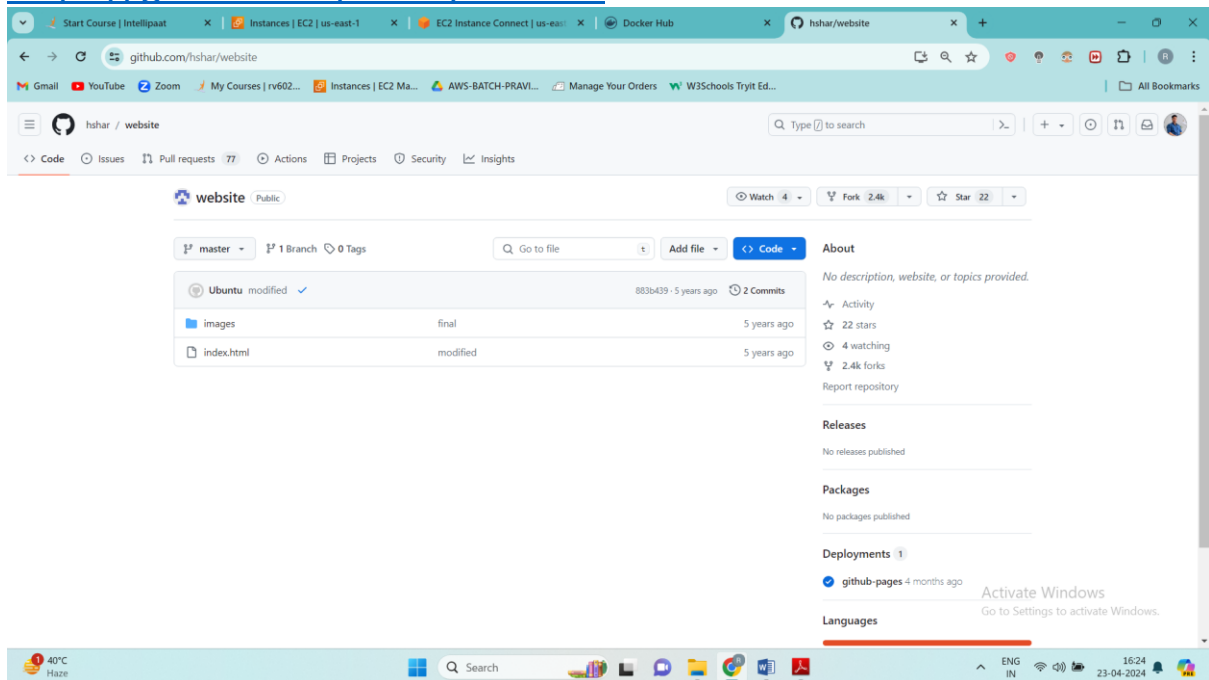
The screenshot shows an AWS CloudShell terminal window. The terminal output displays the process of installing the nano editor. The output includes messages such as "Reading package lists... Done", "Building dependency tree... Done", "Reading state information... Done", and "Suggested packages:". The terminal prompt is "root@2c0fdb7e5c6b:/#".

Now edit or remove the index.html file

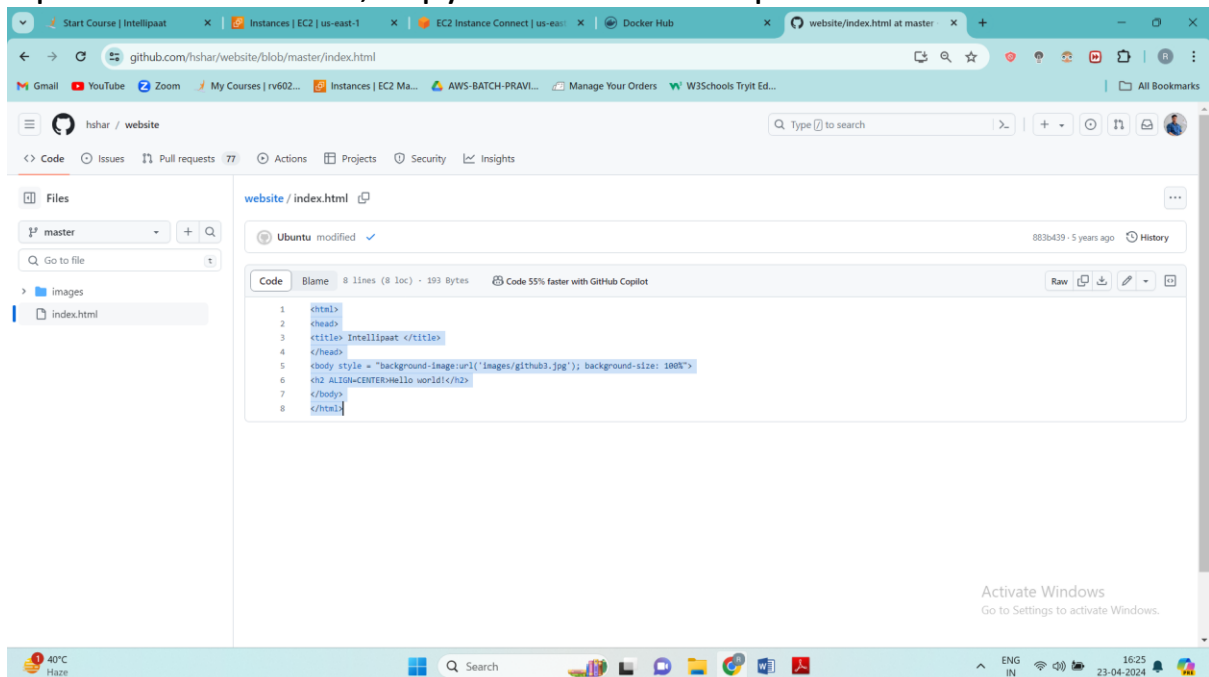
rm index.html to remove it  
nano index.html

open this link in web browser

<https://github.com/hshar/website>



Open index.html file, copy it's content and paste it in our nano editor



```
<html>
<head>
<title> Intellipaath </title>
</head>
<body style = "background-image:url('images/github3.jpg');
background-size: 100%">
<h2 ALIGN=CENTER>Hello world!</h2>
</body>
</html>
```

Now press **ctrl+s** and **ctrl+x** (to save and exit from nano editor)

**Operation 6:** Exit the container and save it using this command. The saved container will be converted into an image with the name specified.

```
exit
sudo docker ps    (copy container id)
```

now to commit docker-

```
sudo docker commit <container-id> docker_username/<container-name>
```

```
ubuntu@ip-172-31-83-79:~$ sudo docker commit 2c0fdb7e5c6b rahulverma/grape-image
sha256:54b9cde345849c5a7a1a560614aee25c987bd5152ada16fe359818b53ce70f31
ubuntu@ip-172-31-83-79:~$
```

Now write **sudo docker images**

And you can see rahu1verma/grape-image is created

```
ubuntu@ip-172-31-83-79:~$ sudo docker images
REPOSITORY          TAG         IMAGE ID      CREATED       SIZE
rahulverma/grape-image latest      54b9cde34584  3 minutes ago 237MB
ubuntu               latest      7af9ba4f0a47  12 days ago   77.9MB
ubuntu@ip-172-31-83-79:~$
```

**Operation 7:** now login in to your docker

**sudo docker login--username=rahu1verma**

password:

```
Last login: Tue Apr 23 10:31:12 2024 from 18.206.107.28
ubuntu@ip-172-31-83-79:~$ sudo docker login --username=rahu1verma
Password:
WARNING! Your password will be stored unencrypted in /root/.docker/config.json.
Configure a credential helper to remove this warning. See
https://docs.docker.com/engine/reference/commandline/login/#credentials-store

Login Succeeded
ubuntu@ip-172-31-83-79:~$
```

Now copy image copy

**sudo docker images**

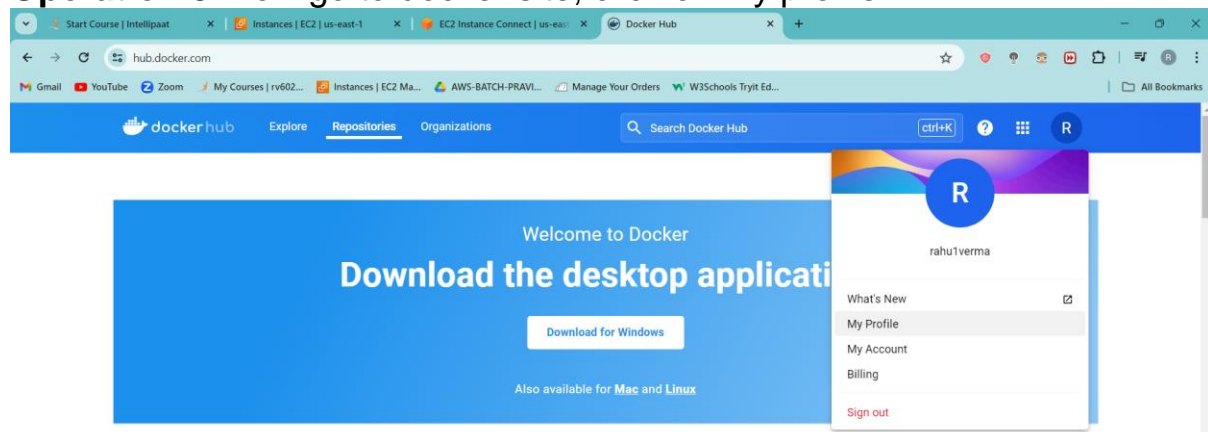
```
ubuntu@ip-172-31-83-79:~$ sudo docker images
REPOSITORY          TAG             IMAGE ID        CREATED         SIZE
rahu1verma/grape-image latest          54b9cde34584    2 hours ago    237MB
ubuntu               latest          7af9ba4f0a47    12 days ago    77.9MB
ubuntu@ip-172-31-83-79:~$
```

Now push the image to docker hub

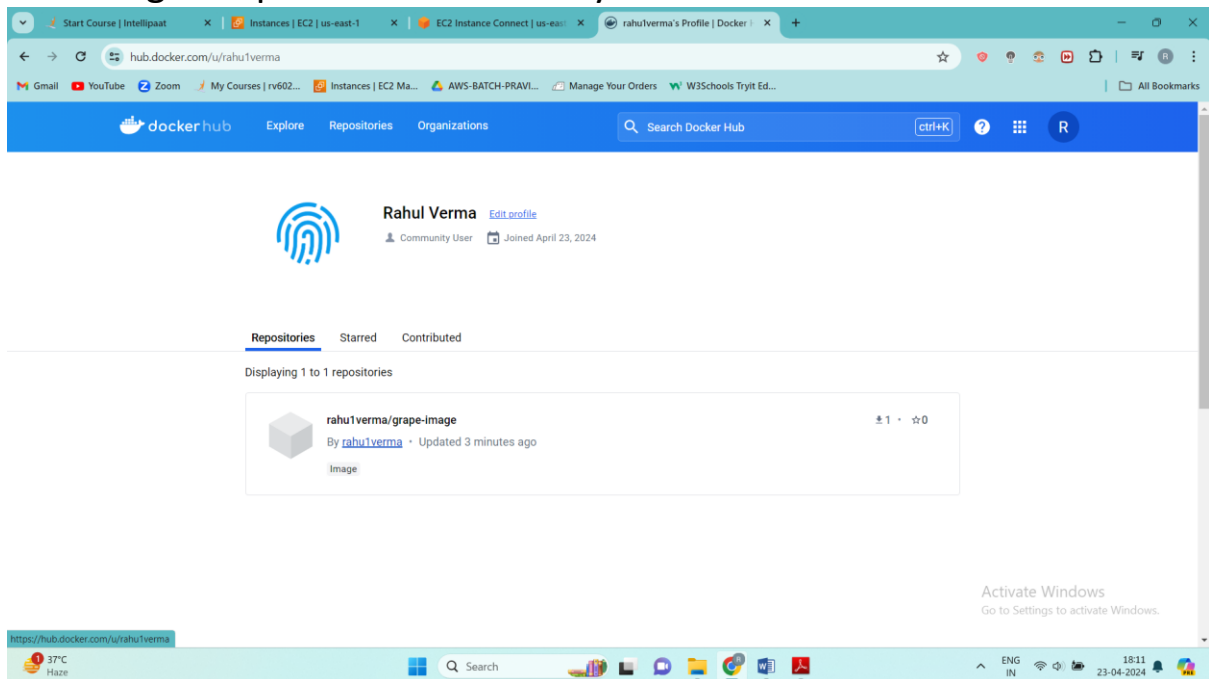
**sudo docker push <container\_id>**

```
ubuntu@ip-172-31-83-79:~$ sudo docker push rahu1verma/grape-image
Using default tag: latest
The push refers to repository [docker.io/rahu1verma/grape-image]
9fe7b57d5fe0: Pushed
e0a9f5911802: Mounted from library/ubuntu
latest: digest: sha256:9b20f04f55c505256d30d82d46a62a3b6a15c820a7c17560e3c3ac1935d1040e size: 741
ubuntu@ip-172-31-83-79:~$
```

**Operation 8:** now go to docker site, click on my profile



Our image is uploaded successfully



**Operation 9:** now let's delete our image

```
sudo docker rmi <image_name>
```

```
ubuntu@ip-172-31-83-79:~$ sudo docker rmi rahu1verma/grape-image
Untagged: rahu1verma/grape-image:latest
Untagged: rahu1verma/grape-image@sha256:9b20f04f55c505256d30d82d46a62a3b6a15c820a7c17560e3c3ac1935d1040e
Deleted: sha256:54b9cde345849c5a7a1a560614aee25c987bd5152ada16fe359818b53ce70f31
Deleted: sha256:c5ffc8d408a97d13b86f0b387ad8935a3730eaa6f6649e507cc72671c6a4652d1
ubuntu@ip-172-31-83-79:~$
```

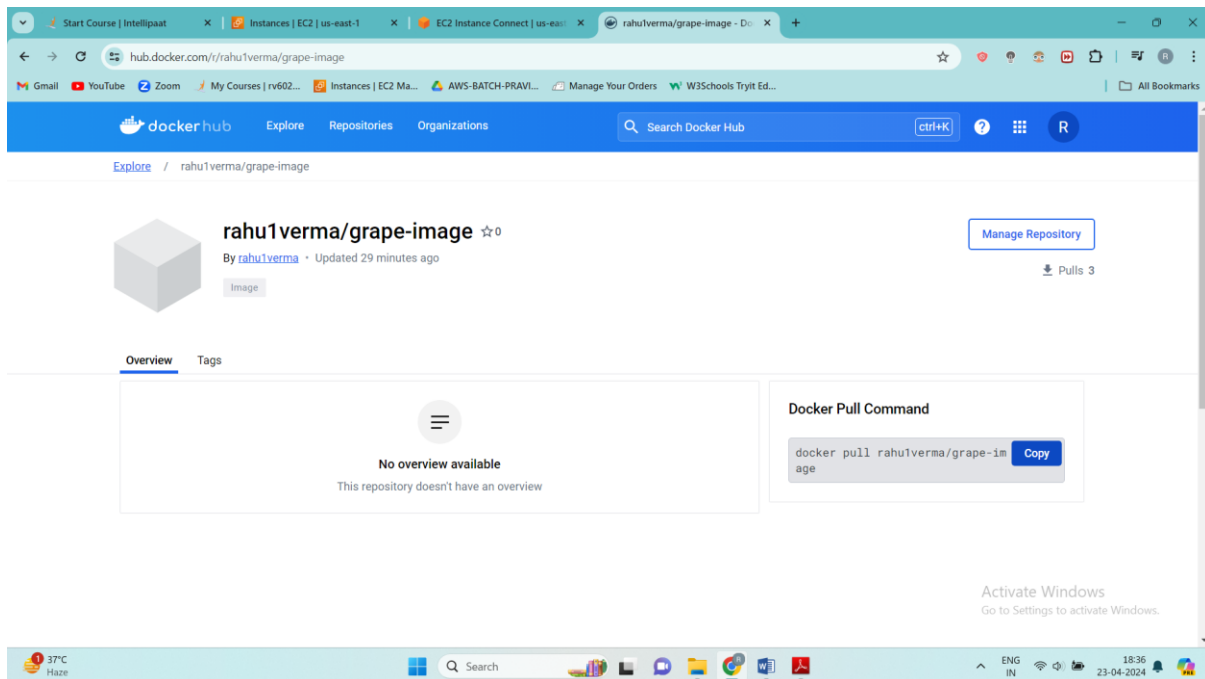
Now if we check our images

```
sudo docker images
```

```
ubuntu@ip-172-31-83-79:~$ sudo docker images
REPOSITORY    TAG       IMAGE ID       CREATED        SIZE
ubuntu        latest   7af9ba4f0a47   12 days ago   77.9MB
ubuntu@ip-172-31-83-79:~$
```

**Operation 10:** now let's pull our image from docker hub copy the command

`sudo docker pull rahu1verma/grape-image`



```
ubuntu@ip-172-31-83-79:~$ sudo docker pull rahulverma/grape-image
Using default tag: latest
latest: Pulling from rahulverma/grape-image
3c645031de29: Already exists
cf953c515f96: Pull complete
Digest: sha256:9b20f04f55c505256d30d82d46a62a3b6a15c820a7c17560e3c3ac1935d1040e
Status: Downloaded newer image for rahulverma/grape-image:latest
docker.io/rahulverma/grape-image:latest
ubuntu@ip-172-31-83-79:~$
```

`sudo docker images`

```
ubuntu@ip-172-31-83-79:~$ sudo docker images
REPOSITORY          TAG         IMAGE ID      CREATED        SIZE
rahulverma/grape-image  latest     54b9cde34584  2 hours ago   237MB
ubuntu              latest     7af9ba4f0a47  12 days ago   77.9MB
ubuntu@ip-172-31-83-79:~$
```