

```
# give this command inside the container
apt-get update
apt-get install apache2
apt-get install curl
apt-get install sqlite2
service apache2 status
service apache2 start
service apache2 stop
```

## `docker basics`

```
# when no docker is installed
sudo docker version
```

Output:

```
karthik@karthik-VirtualBox:~$ docker -version
Command 'docker' not found, but can be installed with:
sudo apt install docker.io
```

=====

```
# when docker is installed
sudo docker --version
```

Output:

```
karthik@karthik-VirtualBox:~$ docker --version
Docker version 19.03.8, build afacb8b7f0
```

=====

```
# when docker is installed with version
sudo docker version
```

Output:

```
karthik@karthik-VirtualBox:~$ sudo docker version
```

Client:

```
Version:      19.03.8
API version:  1.40
Go version:   go1.13.8
Git commit:   afacb8b7f0
Built:        Tue Jun 23 22:26:12 2020
OS/Arch:      linux/amd64
Experimental: false
```

Server:

```
Engine:
Version:      19.03.8
API version:  1.40 (minimum version 1.12)
Go version:   go1.13.8
Git commit:   afacb8b7f0
Built:        Thu Jun 18 08:26:54 2020
OS/Arch:      linux/amd64
Experimental: false
containerd:
Version:      1.3.3-0ubuntu2
GitCommit:
runc:
Version:      spec: 1.0.1-dev
```

```
GitCommit:
docker-init:
Version:      0.18.0
GitCommit:
```

```
=====
# docker pull <image-name> - when pulling images from docker hub
sudo docker pull ubuntu
```

```
Output:
karthik@karthik-VirtualBox:~$ sudo docker pull ubuntu
Using default tag: latest
latest: Pulling from library/ubuntu
3ff22d22a855: Pull complete
e7cb79d19722: Pull complete
323d0d660b6a: Pull complete
b7f616834fd0: Pull complete
Digest: sha256:5d1d5407f353843ecf8b16524bc5565aa332e9e6a1297c73a92d3e754b8a636d
Status: Downloaded newer image for ubuntu:latest
docker.io/library/ubuntu:latest
=====
```

```
# docker images - images downloaded on the docker engine (container)
sudo docker images
```

```
Output:
karthik@karthik-VirtualBox:~$ sudo docker images
REPOSITORY          TAG                 IMAGE ID            CREATED
SIZE
ubuntu               latest             1e4467b07108       10 days ago
73.9MB
```

```
=====
# docker run - with ubuntu image on container
sudo docker run -it -d ubuntu
(-it: interactive terminal, -d: run in background as daemon)
```

```
Output:
karthik@karthik-VirtualBox:~$ sudo docker run -it -d ubuntu
723db1dd423425c1a001ea3fbf3118cc8e69ad4fac22d7cdacd0790208281c0b
=====
```

```
=====
# docker run -it -p <82:80> -d <image-name> - will run the image on the container
with the port forwarding.
sudo docker run -it -p 82:80 -d ubuntu
(-it: interactive terminal, -d: run in background as daemon, -p: port forwarding
<container-port external: container port internal>)
```

```
Output:
```

```
# docker ps - list only container running in the system
sudo docker ps
```

```
Output:
karthik@karthik-VirtualBox:~$ sudo docker ps
CONTAINER ID        IMAGE               COMMAND             CREATED
STATUS             PORTS              NAMES
```

```
723db1dd4234          ubuntu          "/bin/bash"          2 minutes ago          Up
2 minutes          tender_mestorf
=====
=====
```

```
# docker ps -a - will list all containers running/exited in system
sudo docker ps -a
```

Output:

```
karthik@karthik-VirtualBox:~$ sudo docker ps -a
CONTAINER ID          IMAGE          COMMAND              CREATED
STATUS                PORTS         NAMES               Up
0a783089cf38          ubuntu        "/bin/bash"         2 minutes ago
2 minutes              romantic_rosalind
723db1dd4234          ubuntu        "/bin/bash"         3 hours ago
Exited (0) 2 minutes ago tender_mestorf
=====
=====
```

```
# docker container stop <container-id> - stopping the specific container running.
sudo docker stop 0a783089cf38
```

Output:

```
karthik@karthik-VirtualBox:~$ sudo docker stop 0a783089cf38
0a783089cf38
=====
=====
```

```
# docker container exec -t <container-id> - by doing this we are logging into the
specific container sessions.
sudo docker exec -it c519b3108c3b bash
```

Output:

```
karthik@karthik-VirtualBox:~$ sudo docker exec -it c519b3108c3b bash
root@c519b3108c3b:/# ls
bin  dev  home  lib32  libx32  mnt  proc  run  srv  tmp  var
boot  etc  lib  lib64  media  opt  root  sbin  sys  usr
=====
=====
```

```
# docker kill <container-id> - will kill the containers which sometimes cannot be
safely exited due to some reasons.
sudo docker kill c519b3108c3b
```

Output:

```
karthik@karthik-VirtualBox:~$ sudo docker kill 7c4683ab4625
7c4683ab4625
=====
=====
```

```
# docker rm <container-id> - will delete/remove the containers which used ubuntu
image. This is basically used to remove the containers.
sudo docker rm 7c4683ab4625
```

Output:

```
karthik@karthik-VirtualBox:~$ sudo docker rm 7c4683ab4625
7c4683ab4625
=====
=====
```

```
# docker rm -f $(docker ps -a -q) - will remove all containers running/exited in
the system
sudo docker rm -f $(sudo docker ps -a -q)
```

Output:

```
karthik@karthik-VirtualBox:~$ sudo docker rm -f $(sudo docker ps -a -q)
42c4677fd302
4a64be7f1012
```

```
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```

```
# docker rmi <image-id> - will remove images from the docker system, rmi - remove
image
sudo docker rmi a24bb4013296
```

Output:

```
karthik@karthik-VirtualBox:~$ sudo docker images
REPOSITORY          TAG                 IMAGE ID            CREATED
SIZE
ubuntu               latest             1e4467b07108       10 days ago
73.9MB
alpine               latest             a24bb4013296       2 months ago
5.57MB
```

```
karthik@karthik-VirtualBox:~$ sudo docker rmi a24bb4013296
```

Untagged: alpine:latest

Untagged:

alpine@sha256:185518070891758909c9f839cf4ca393ee977ac378609f700f60a771a2dfe321

Deleted: sha256:a24bb4013296f61e89ba57005a7b3e52274d8edd3ae2077d04395f806b63d83e

Deleted: sha256:50644c29ef5a27c9a40c393a73ece2479de78325cae7d762ef3cdc19bf42dd0a

```
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```
# docker rmi <username>/<image-name>:<tag-name> - remove the image when this has
dependency on child images.
```

```
sudo docker rmi kbhat2376/ubuntu-2020-08-06:latest
```

Output:

```
karthik@karthik-VirtualBox:~$ sudo docker images
REPOSITORY          TAG                 IMAGE ID            CREATED
SIZE
kbhat2376/ubuntu-2020-08-06-latest  latest             f225620c6fa1       About
an hour ago        215MB
kbhat2376/ubuntu-2020-08-06         latest             343be86aab07       2
hours ago          215MB
```

```
karthik@karthik-VirtualBox:~$ sudo docker rmi kbhat2376/ubuntu-2020-08-06:latest
```

Untagged: kbhat2376/ubuntu-2020-08-06:latest

Untagged: kbhat2376/ubuntu-2020-08-

06@sha256:8ca80f5b8d6ce56bb00d822859a13843e6c05ba6b2f0f9f026451462d6ce0e8e

```
karthik@karthik-VirtualBox:~$ sudo docker images
```

```
REPOSITORY          TAG                 IMAGE ID            CREATED
SIZE
kbhat2376/ubuntu-2020-08-06-latest  latest             f225620c6fa1       About
an hour ago        215MB
```

```
=====
=====
```

```
# docker rmi <image-id> - this will throw an error when we have image to be deleted
and this has dependency with child image.
sudo docker rmi 343be86aab07
```

Output:

```
karthik@karthik-VirtualBox:~$ sudo docker rmi 343be86aab07
Error response from daemon: conflict: unable to delete 343be86aab07 (cannot be
forced) - image has dependent child images
```

```
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=====
```

```
# docker commit b4da9724f9fb debian-2020-08-05 - will save the container with
latest set of installations, and save as new image.
sudo docker commit b4da9724f9fb debian-2020-08-05
```

Output:

```
karthik@karthik-VirtualBox:~$ sudo docker commit b4da9724f9fb debian-2020-08-05
sha256:d78dc99fd4b0ee19efc2ed8fc0ce823e3546ceb40e3be1d3bce33eb8253264a4
```

```
karthik@karthik-VirtualBox:~$ sudo docker images
```

REPOSITORY	TAG	IMAGE ID	CREATED
SIZE			
debian-2020-08-05	latest	d78dc99fd4b0	11 seconds ago
114MB			
debian-05-08-2020	latest	cf3a1cd779e9	5 minutes ago
114MB			
debian	latest	ae8514941ea4	2 weeks ago
114MB			

```
karthik@karthik-VirtualBox:~$ sudo docker exec -it
b4da9724f9fb77f809a735f8b03c57ab87f6f8acebfd3b3fe22282185a47dc9b bash
```

```
root@b4da9724f9fb:/# ls
```

```
bin  dev  home  lib  media  opt  root  sbin  sys  usr
boot etc  karthik  lib64  mnt  proc  run  srv  tmp  var
```

```
root@b4da9724f9fb:/# cd karthik
```

```
root@b4da9724f9fb:/karthik# ls
```

```
k1.txt k2.txt
```

```
root@b4da9724f9fb:/karthik# cat >> k1.txt
```

```
fsdjfsdjsdfjk
```

```
dsfsdjfkjds
```

```
sdklsdklfsdkf
```

```
sdsdjfdskjdf
```

```
root@b4da9724f9fb:/karthik# cat k1.txt
```

```
fsdjfsdjsdfjk
```

```
dsfsdjfkjds
```

```
sdklsdklfsdkf
```

```
sdsdjfdskjdf
```

```
root@b4da9724f9fb:/karthik# cat >> k2.txt
```

```
Welcome to docker
```

```
=====
=====
```

```
# docker login - will login to docker
sudo docker login
```

Output:

```
Authenticating with existing credentials...
```

```
Login did not succeed, error: Error response from daemon: Get https://registry-
1.docker.io/v2/: Get https://auth.docker.io/token?
```

account=kbhat2376&client\_id=docker&offline\_token=true&service=registry.docker.io:  
net/http: request canceled (Client.Timeout exceeded while awaiting headers)  
(Client.Timeout exceeded while awaiting headers)  
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 (kbhat2376): kbhat2376  
Password:myindia@2376

Error response from daemon: Get https://registry-1.docker.io/v2/: net/http: request  
canceled while waiting for connection (Client.Timeout exceeded while awaiting  
headers)

=====  
=====  
=====

# docker push <username>/<image-name> - will push the custom local image to the  
docker hub  
sudo docker push kbhat2376/ubuntu-2020-08-06-latest

Output:

The push refers to repository [docker.io/kbhat2376/ubuntu-2020-08-06-latest]

7ae832ac16f7: Pushed

5b747ba07043: Mounted from kbhat2376/ubuntu-2020-08-06

78c7a3b3d608: Mounted from kbhat2376/ubuntu-2020-08-06

d387dc402e97: Mounted from kbhat2376/ubuntu-2020-08-06

095624243293: Mounted from kbhat2376/ubuntu-2020-08-06

a37e74863e72: Mounted from kbhat2376/ubuntu-2020-08-06

8eeb4a14bcb4: Mounted from kbhat2376/ubuntu-2020-08-06

ce3011290956: Mounted from kbhat2376/ubuntu-2020-08-06

latest: digest:

sha256:1565b372bca309c22f44120683c25ea6ae2dda9c77826aa7035f2edd99a279ea size: 1989

=====  
=====