# **Docker File Creation**

```
Dockerfile Components & diff Command ?
                             Chec-27 -
  Login into AWS account and Start your O/p > C /root
EC2 instance Access it from putty A /root/-
                                                            A /root/bash-history
                                                           C /tmp
A /tmp/myfile
     Now we have to Greate Container from
     Our Own image
                                                     Now, Create image of this Container
 Therefore, Create one Container first
                                                     - docker commit newcontainer
 → docker run -it --name bhupicontainer
                                                          updatelmage
     ubuntu /bin/bash
                                                     -> docker images
                                                     Now Create Container from this image
     cd tmp/
 Now Create One file inside this trop directory
                                                     → docker run -it --name rajcontainer
                                                       updateimage /bin/bash
   → touch myfile
Now if you want to see the difference between the base image & changes on it then
                                                      root@cid# ls
                                                     root@cid # 13

" # cd tmp/

tmp# ls

O/p → myfile { you will get all files}
→ docker diff bhupicontainer updateimage
```

#### Our container

CONTAINER ID	IMAGE	COMMAND	CREATED	STATUS	PORTS	NAMES
9f05d325d7e2	centos	"/bin/bash"	17 minutes ago	Exited (0) 17 minutes ago		Pandit
e036bf19efcb	72d5c909f166	"/sbin/tini /usr/"	3 days ago	Exited (127) 3 days ago		youthful_newton
92e59d43bc56	ubuntu	"/bin/bash"	3 days ago	Exited (0) 3 days ago		infallible_euclid
21ef6206a3fe	ubuntu	"/bin/bash"	4 days ago	Exited (0) 3 days ago		goofy meninsky

→ First, we enter a **pandit** container and then we added some file to the container and after adding the file to the container we exit a container.

→ If we want to see our changes in the container then we use this command to see what kind of changes have been done in the container.

```
C /root = it means changes in root directory.
A / root/.bash history = it means changes save in .bash history
C /tmp = it means we change some things in this directory
A /tmp / satyam = it means we add satyam file in the tmp folder.
```

```
[root@ip-172-31-34-14 ec2-user]# docker diff Pandit
C /root
A /root/.bash_history
C /tmp
A /tmp/satyam
[root@ip-172-31-34-14 ec2-user]# _
```

## Docker images:-

ED SIZE
s ago 72.8ME
cs ago 231MB
ths ago 134MB
k

# Convert container to image

- → If we want to update our container we use this command
- → If I have done some work in my container and then I want to convert the container into an image then we will use this command for that.

[root@ip-172-31-34-14 ec2-user]# docker commit Pandit updateimage sha256:063962a0f525ed6557fb0b2cae9804275cb5e0f69901cff53a5386cdbd860ee9

## Now, we see our new image is created

[root@ip-172-31-34-14 ec2-user]# docker images						
REPOSITORY	TAG	IMAGE ID	CREATED	SIZE		
updateimage	latest	063962a0f525	5 seconds ago	231MB		
ubuntu	latest	ba6acccedd29	10 days ago	72.8MB		
centos	latest	5d0da3dc9764	5 weeks ago	231MB		
darwinwilmut/react-docker	latest	6fafcfc54ae3	2 months ago	134MB		
[root@ip-172-31-34-14 ec2-user]# _						

Now we want to run our update image

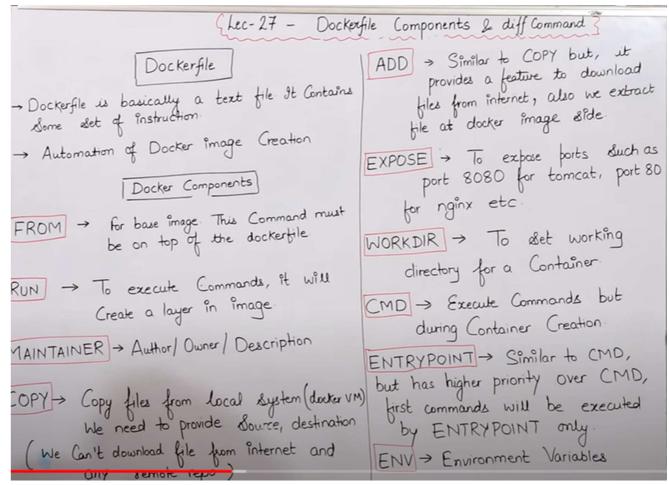
[root@ip-172-31-34-14 ec2-user]# docker run -it --name Allahabad updateimage /bin/bash
[root@45b11a7d39b3 /]# ls

→ We use Is command to view our files :-

```
[root@45b11a7d39b3 /]# ls
bin dev etc home lib lib64 lost+found media mnt opt proc root run sbin srv sys <mark>tmp</mark> usr var
[root@45b11a7d39b3 /]# cd tmp/
```

we create previously in **tmp** folder we create file name is **satyam**, now we see in update image we can see file name satyam is visible.

```
[root@45b11a7d39b3 tmp]# ls
ks-script-4luisyla ks-script-o23i7rc2 ks-script-x6ei4wuu satyam
[root@45b11a7d39b3 tmp]# _
```



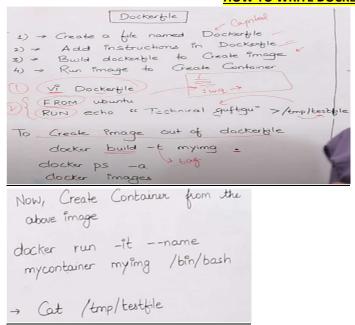
- → Whenever we create a Docker file, we will keep its name only Docker file, can not name any other than Docker file
- → Whenever we create a docker file, the first word of the docker file is always in capital D.

### Ex = Dockerfile

→ We will capitalize all the instructions inside the docker file.

Like = FROM, RUN, MAINTAINER, COPY, ADD, EXPOSE, WORKDIR, CMD, ENTRYPOINT, ENV

# **HOW TO WRITE DOCKER FILE:-**



```
[root@ip-172-31-34-14 ec2-user]# ls
[root@ip-172-31-34-14 ec2-user]# vi Dockerfile
[root@ip-172-31-34-14 ec2-user]# ls
Dockerfile
```

- → we write operating system name in **FROM** line.
- → hum jis bhi operating system ki image banana chahate hai us operating system ka naam hum **FROM** kein aage likhenge.
- → RUN command mene is liye apane docker file mein likha hai kyu ki hum jo bhi dependencies aur script apane Docker file mein likh rahe un sab ko run karane ka kaam karta hai
- → RUN echo "hello satyam this is a temporary file " > /tmp/testfile its means we create a testfile in tmp folder & inside a testfile we write some message.

root@ip-172-31-34-14:/home/ec2-user

```
FROM ubuntu
RUN echo "hello satyam this is a temporary file " > /tmp/testfile_
~
~
```

# **Convert Dockerfile to docker image**

- → We use this command to convert **Dockerfile** to **docker image**. docker build —t my-image.
- → When we convert docker file to docker image, we use . always in last

→ Now we see our image is created.

```
[root@ip-172-31-34-14 ec2-user]# docker images
                                       IMAGE ID
REPOSITORY
                             TAG
                                                      CREATED
                                                                       SIZE
                             latest
                                       26c5aed530cd
                                                       4 minutes ago
myimage
                                                                       72.8MB
updateimage
                             latest
                                       063962a0f525
                                                       22 hours ago
                                                                       231MB
ubuntu
                                       ba6acccedd29
                                                                       72.8MB
                             latest
                                                      11 days ago
                             latest
                                       5d0da3dc9764
                                                       5 weeks ago
                                                                       231MB
centos
darwinwilmut/react-docker
                                       6fafcfc54ae3
                             latest
                                                       2 months ago
                                                                       134MB
root@ip-172-31-34-14 ec2-user]#
```

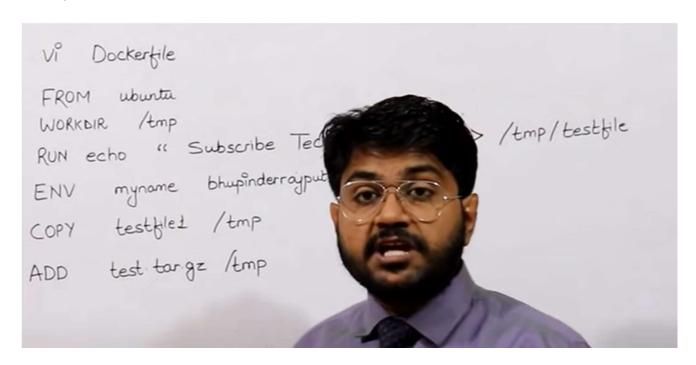
#### Our Container

```
root@ip-172-31-34-14 ec2-user]# ps -a
 PID TTY
                   TIME CMD
8610 pts/0
               00:00:00 sudo
8612 pts/0
               00:00:00 su
8613 pts/0
               00:00:00 bash
               00:00:00 ps
11727 pts/0
[root@ip-172-31-34-14 ec2-user]# docker ps
CONTAINER ID IMAGE
                        COMMAND
                                       CREATED
                                                       STATUS
                                                                     PORTS
                                                                                NAMES
                        "/bin/bash" 23 hours ago
0f05d325d7e2
                                                       Up 22 hours
                                                                                Pandit
              centos
[root@ip-172-31-34-14 ec2-user]# docker ps -a
CONTAINER ID
             IMAGE
                              COMMAND
                                                        CREATED
                                                                       STATUS
                                                                                                  PORTS
                                                                                                            NAMES
45b11a7d39b3
                               "/bin/bash"
                                                                       Exited (0) 19 hours ago
                                                                                                            Allahabad
               updateimage
                                                        21 hours ago
                              "/bin/bash"
0f05d325d7e2
                                                        23 hours ago
                                                                       Up 22 hours
                                                                                                            Pandit
               centos
                                                                       Exited (127) 4 days ago
Exited (0) 4 days ago
a036bf19efcb
               72d5c909f166
                               "/sbin/tini -- /usr/..."
                                                                                                            youthful newton
                                                        4 days ago
                              "/bin/bash"
92e59d43bc56
                                                                                                            infallible_euclid
               ubuntu
                                                        4 days ago
                              "/bin/bash"
21ef6206a3fe
                                                        4 days ago
                                                                       Exited (0) 4 days ago
                                                                                                            goofy_meninsky
               ubuntu
```

Now, before running container we create a Dockerfile and inside a Dockerfile we write a testfile now, testfile is visible when container is running.

```
root@96fef6268383:/# ls
          home lib32 libx32
     dev
                                    proc
                                          run
                                                srv
                                                          var
                lib64 media
boot
     etc
          lib
                               opt
                                    root sbin
                                                sys
root@96fef6268383:/# cd tmp/
root@96fef6268383:/tmp# ls
testfile
root@96fef6268383:/tmp# cat testfile
hello satyam this is a temporary file
root@96fef6268383:/tmp#
```

# → Now , we edit Dockerfile



```
[root@ip-172-31-34-14 ec2-user]# vi Dockerfile
[root@ip-172-31-34-14 ec2-user]# ls
Dockerfile
```

```
[root@ip-172-31-34-14 ec2-user]# touch test test2
[root@ip-172-31-34-14 ec2-user]# ls
Dockerfile test test2
```

- → WORKDIR / tmp it means our current working directory is tmp folder
- → COPY testfile /tmp it means ki humare local machine mein sein testfile name sein jo file hai usko humare tmp folder mein daal do.
- → ADD test .tar .gz /tmp it means ki humare local machine mein eak test naam ki file padi hai us file ko test file ko pehale tar file banao then uske baad us file ko zip file mein convert kar do.

```
m root@ip-172-31-34-14:/home/ec2-user
```

→ Now we convert our test file into tar file

```
[root@ip-172-31-34-14 ec2-user]# tar -cvf test.tar test
test
[root@ip-172-31-34-14 ec2-user]# ls
Dockerfile test test2 test.tar
```

→ Now we zipped our test.tar file

```
[root@ip-172-31-34-14 ec2-user]# gzip test.tar
[root@ip-172-31-34-14 ec2-user]# ls
Dockerfile test test2 test.tar.gz
```

Now, we remove our test file, kyuki mere bhai mene apane test file ko test.tar file mein bana diya aur usko zipped bhi kar diya haia toh humein ab zarurat nahi uski.

```
[root@ip-172-31-34-14 ec2-user]# rm -rf test
[root@ip-172-31-34-14 ec2-user]# ls
Dockerfile test2 test.tar.gz
```

[root@ip-172-31-34-14 ec2-user]# docker images					
REPOSITORY	TAG	IMAGE ID	CREATED	SIZE	
myimage	latest	26c5aed530cd	3 hours ago	72.8MB	
updateimage	latest	063962a0f525	25 hours ago	231MB	
ubuntu	latest	ba6acccedd29	11 days ago	72.8MB	
centos	latest	5d0da3dc9764	5 weeks ago	231MB	
darwinwilmut/react-docker	latest	6fafcfc54ae3	2 months ago	134MB	

Now, again we convert our docker file to docker image. Humane apane docker file mein jo bhi changes kiya thaa humane phir sein usi file sein eak new image create kar diya. hum dekh sakte haii ki docker eak –eak karke humari sab dependences install kar raha jo humane docker file mein de rakha thaa apane.

```
[root@ip-172-31-34-14 ec2-user]# docker build -t mynewimage .
Sending build context to Docker daemon 9.216kB
Step 1/6 : FROM ubuntu
---> ba6acccedd29
Step 2/6 : WORKDIR /tmp
---> Running in b24881b20eef
Removing intermediate container b24881b20eef
---> 69799eea16b5
Step 3/6 : RUN echo "hello satyam this is a temporary file " > /tmp/testfile
---> Running in d63ec33ef603
Removing intermediate container d63ec33ef603
---> 1378276b4e43
Step 4/6 : ENV myname satyam tripathi
---> Running in faac8f36ee40
Removing intermediate container faac8f36ee40
---> cb66f5174ba8
Step 5/6 : COPY test2 /tmp
---> d3540222d1d2
Step 6/6 : ADD test.tar.gz /tmp
---> 6836c642ede9
Successfully built 6836c642ede9
Successfully tagged mynewimage:latest
[root@ip-172-31-34-14 ec2-user]#
```

### → Image created

[root@ip-172-31-34-14 ec2-user]# docker images						
REPOSITORY	TAG	IMAGE ID	CREATED	SIZE		
mynewimage	latest	6836c642ede9	7 minutes ago	72.8MB		
myimage	latest	26c5aed530cd	3 hours ago	72.8MB		
updateimage	latest	063962a0f525	25 hours ago	231MB		
ubuntu	latest	ba6acccedd29	11 days ago	72.8MB		
centos	latest	5d0da3dc9764	5 weeks ago	231MB		
darwinwilmut/react-docker	latest	6fafcfc54ae3	2 months ago	134MB		
[root@ip-172-31-34-14 ec2-user]# <b>_</b>						

#### **Docker container**

```
[root@ip-172-31-34-14 ec2-user]# docker ps -a
CONTAINER ID IMAGE COMMAND
                                                                CREATED
                                                                                 STATUS
                                                                                                                     PORTS
                                                                                                                                 NAMES
96fef6268383
                                   "/bin/bash"
                                                                3 hours ago
                                                                                 Exited (0) About an hour ago
                                                                                                                                 testcontainer
                myimage
45b11a7d39b3
                updateimage
                                   "/bin/bash"
                                                                24 hours ago
                                                                                 Exited (0) 22 hours ago
                                                                                                                                 Allahabad
                                  "/bin/bash"
                                                                25 hours ago
                                                                                 Up 24 hours
0f05d325d7e2
                 centos
                                                                                                                                 Pandit
                                                                                 Exited (127) 4 days ago
Exited (0) 5 days ago
Exited (0) 5 days ago
a036bf19efcb
                 72d5c909f166
                                  "/sbin/tini -- /usr/..."
                                                               4 days ago
                                                                                                                                 youthful_newton
92e59d43bc56
                 ubuntu
                                   "/bin/bash"
                                                                5 days ago
                                                                                                                                  infallible_euclid
                                   "/bin/bash"
21ef6206a3fe
                ubuntu
                                                                5 days ago
                                                                                                                                 goofy_meninsky
```

- → Mene yaha mynewcontainer kein naam sein eak naya container banaya hai aur uske andar mene apani jo mynewimage banayi thii us image ko hi use kiya hai
- → Mein yaha dekh sakta hu ki mene jaise container ko run iya usane turant hi container kein andar tmp folder mein mujhe lekar chala gaya kyu ki mene apaane docker file kein andar apani WORKDIR mein tmp folder ko efine kar rakha hai

```
[root@ip-172-31-34-14 ec2-user]# docker run -it --name mynewcontainer mynewimage /bin/bash
root@ef1cf15debb3:/tmp#
root@ef1cf15debb3:/tmp# ls
test test2 testfile
```

- → Now, we can see here in container, all details are come.
- → humane jo bhi apane file mein de rakha thaa vo sab aagaya isme. root@ef1cf15debb3:/tmp# cat testfile hello satyam this is a temporary file root@ef1cf15debb3:/tmp# \_
- → If I want to know our environment we use this command
- → Humane ENV apane docker file mein de rakha hai.

root@ef1cf15debb3:/tmp# echo \$myname satyam tripathi