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Docker Installation

Install Docker on EC2 (Manually)

- Create a simple EC2 instance with Amazon Linux 2 and execute these commands after you SSH into it.

```
sudo yum update -y
sudo amazon-linux-extras install docker
docker -v
```

- Above commands will install Docker Server, Start the docker service.

- Start the docker service and verify the status of Docker Daemon

```
sudo systemctl start docker
sudo systemctl status docker
```

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```
[ec2-user@ip-172-31-1-197 ~]$ sudo systemctl status docker
• docker.service - Docker Application Container Engine
   Loaded: loaded (/usr/lib/systemd/system/docker.service; disabled; vendor preset: disabled)
   Active: active (running) since Sat 2021-07-17 06:39:46 UTC; 3h 36min ago
     Docs: https://docs.docker.com
  Process: 7628 ExecStartPre=/usr/libexec/docker/docker-setup-runtimes.sh (code=exited, status=0/SUCCESS)
  Process: 7618 ExecStartPre=/bin/mkdir -p /run/docker (code=exited, status=0/SUCCESS)
 Main PID: 7634 (dockerd)
    Tasks: 9
   Memory: 205.7M
   CGroup: /system.slice/docker.service
           └─7634 /usr/bin/dockerd -H fd:// --containerd=/run/containerd/containerd.sock --default-ulimit nofile=1024:4096

Jul 17 06:39:46 ip-172-31-1-197.ec2.internal dockerd[7634]: time="2021-07-17T06:39:46.075372236Z" level=info msg="ClientConn sw...=grpc
Jul 17 06:39:46 ip-172-31-1-197.ec2.internal dockerd[7634]: time="2021-07-17T06:39:46.125677984Z" level=info msg="Loading conta...art."
Jul 17 06:39:46 ip-172-31-1-197.ec2.internal dockerd[7634]: time="2021-07-17T06:39:46.311067572Z" level=info msg="Default bridg...ress"
Jul 17 06:39:46 ip-172-31-1-197.ec2.internal dockerd[7634]: time="2021-07-17T06:39:46.369856229Z" level=info msg="Loading conta...one."
Jul 17 06:39:46 ip-172-31-1-197.ec2.internal dockerd[7634]: time="2021-07-17T06:39:46.386963306Z" level=info msg="Docker daemon....10.4
Jul 17 06:39:46 ip-172-31-1-197.ec2.internal dockerd[7634]: time="2021-07-17T06:39:46.387468167Z" level=info msg="Daemon has co...tion"
Jul 17 06:39:46 ip-172-31-1-197.ec2.internal systemd[1]: Started Docker Application Container Engine.
Jul 17 06:39:46 ip-172-31-1-197.ec2.internal dockerd[7634]: time="2021-07-17T06:39:46.415505904Z" level=info msg="API listen on...sock"
Jul 17 07:02:27 ip-172-31-1-197.ec2.internal dockerd[7634]: time="2021-07-17T07:02:27.940196427Z" level=info msg="ignoring even...lete"
Jul 17 10:16:17 ip-172-31-1-197.ec2.internal dockerd[7634]: time="2021-07-17T10:16:17.625481480Z" level=info msg="ignoring even...lete"
Hint: Some lines were ellipsized, use -l to show in full.
[ec2-user@ip-172-31-1-197 ~]$
```

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- After installation of docker service, a Linux Group `docker` is created.
- Add `ec2-user` to the docker group to execute the docker commands in linux with `ec2-user`

```
docker info
cat /etc/group | grep docker
sudo usermod -a -G docker ec2-user
cat /etc/group | grep docker
docker info
```

- Logout from the EC2 instance and log back in or restart the ssh session and execute `docker info`

Install Docker on EC2 (via EC2 User data)

- Below script can be passed via EC2 User Data while creating the EC2 Instance in Step **Configure Instance Details**

```
#! /bin/sh
yum update -y
amazon-linux-extras install docker
service docker start
usermod -a -G docker ec2-user
chkconfig docker on
```

▼ Advanced Details

| User data ⓘ | ● As text ○ As file ☐ Input is already base64 encoded |

```
#! /bin/sh
yum update -y
amazon-linux-extras install docker
service docker start
usermod -a -G docker ec2-user
chkconfig docker on
```

User data script might take some time to execute and make Docker CLI ready to use.

Docker Commands

```
docker images
# Below command will pull the image from Docker Hub into Local Machine
docker pull ubuntu:18.04
docker images
```

```
[ec2-user@ip-172-31-20-228 ~]$ docker images
REPOSITORY    TAG        IMAGE ID    CREATED    SIZE
[ec2-user@ip-172-31-20-228 ~]$ docker pull ubuntu:18.04
18.04: Pulling from library/ubuntu
2f94e549220a: Pull complete
Digest: sha256:37b7471c1945a2a12e5a57488ee4e3e216a8369d0b9ee1ec2e41db9c2c1e3d22
Status: Downloaded newer image for ubuntu:18.04
docker.io/library/ubuntu:18.04
[ec2-user@ip-172-31-20-228 ~]$ docker images
REPOSITORY    TAG        IMAGE ID        CREATED        SIZE
ubuntu        18.04      886eca19e611    2 weeks ago    63.1MB
[ec2-user@ip-172-31-20-228 ~]$ █
```

--

```
docker images
# creates and starts a container, allocates a pseudo-TTY connected to the
container's stdin, and creates an interactive bash shell in the container.
docker run -i -t ubuntu:18.04 /bin/bash
hostname
id ec2-user
```

```
[ec2-user@ip-172-31-20-228 ~]$ docker run -i -t ubuntu:18.04 /bin/bash
root@7095aca78d63:/# id
uid=0(root) gid=0(root) groups=0(root)
root@7095aca78d63:/# hostname
7095aca78d63
root@7095aca78d63:/# id ec2-user
id: 'ec2-user': no such user
root@7095aca78d63:/# █
```

Here the SSH Session from EC2 instance is changed to a bash session inside the Docker Container.

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- To Detach docker from interactive container, enter the `Ctrl + P and Ctrl + Q` escape sequence.

This escape sequence will detach the TTY from the container and land us in the Docker host prompt $, however the container will continue to run.

--

```
# Display the running Containers
docker ps
docker run -i -t ubuntu:20.04 /bin/bash
# docker run command first checks if docker image is available locally, if
required image is not present, it pulls the image from Docker Hub and then creates
a new container
id ec2-user
# enter the `Ctrl + P and Ctrl + Q` escape sequence
```

```
[ec2-user@ip-172-31-20-228 ~]$ docker run -i -t ubuntu:18.04 /bin/bash
root@7095aca78d63:/# id
uid=0(root) gid=0(root) groups=0(root)
root@7095aca78d63:/# hostname
7095aca78d63
root@7095aca78d63:/# id ec2-user
id: 'ec2-user': no such user
root@7095aca78d63:/# [ec2-user@ip-172-31-20-228 ~]$ docker ps
CONTAINER ID   IMAGE          COMMAND        CREATED          STATUS           PORTS        NAMES
7095aca78d63   ubuntu:18.04   "/bin/bash"    3 minutes ago    Up 3 minutes                  nifty_mcclintock
[ec2-user@ip-172-31-20-228 ~]$ docker run -i -t ubuntu:20.04 /bin/bash
Unable to find image 'ubuntu:20.04' locally
20.04: Pulling from library/ubuntu
ea362f368469: Pull complete
Digest: sha256:b5a61709a9a44284d88fb12e5c48db0409cfad5b69d4ff8224077c57302df9cf
Status: Downloaded newer image for ubuntu:20.04
root@ade7b6905ca2:/# id ec2-user
id: 'ec2-user': no such user
root@ade7b6905ca2:/# [ec2-user@ip-172-31-20-228 ~]$ docker ps
CONTAINER ID   IMAGE          COMMAND        CREATED             STATUS              PORTS        NAMES
ade7b6905ca2   ubuntu:20.04   "/bin/bash"    About a minute ago  Up About a minute                objective_brattain
7095aca78d63   ubuntu:18.04   "/bin/bash"    9 minutes ago       Up 8 minutes                     nifty_mcclintock
[ec2-user@ip-172-31-20-228 ~]$
```

--

```
docker ps
# Create a new container with a specific name
docker run --name=myAmznLinuxContainer -i -t amazonlinux:latest /bin/bash
id
```

```
[ec2-user@ip-172-31-20-228 ~]$ docker run --name=myAmznLinuxContainer -i -t amazonlinux:latest /bin/bash
Unable to find image 'amazonlinux:latest' locally
latest: Pulling from library/amazonlinux
3a461b3ae562: Pull complete
Digest: sha256:ffc013f79b36a2c0352b444f5322ff43de25152a8ac1ad0fa473e90f1cbedcbe
Status: Downloaded newer image for amazonlinux:latest
bash-4.2# id
uid=0(root) gid=0(root) groups=0(root)
bash-4.2# hostname
bash: hostname: command not found
bash-4.2#
```

--

```
# enter the `Ctrl + P and Ctrl + Q` escape sequence
docker images
docker ps
```

```
[ec2-user@ip-172-31-20-228 ~]$ docker images
REPOSITORY    TAG       IMAGE ID        CREATED        SIZE
amazonlinux   latest    30156a0e4f04    9 days ago     164MB
ubuntu        20.04     d13c942271d6    2 weeks ago    72.8MB
ubuntu        18.04     886eca19e611    2 weeks ago    63.1MB
[ec2-user@ip-172-31-20-228 ~]$ docker ps
CONTAINER ID   IMAGE                COMMAND       CREATED          STATUS         PORTS     NAMES
99a0be2ab835   amazonlinux:latest   "/bin/bash"   2 minutes ago    Up 2 minutes             myAmznLinuxContainer
ade7b6905ca2   ubuntu:20.04         "/bin/bash"   9 minutes ago    Up 9 minutes             objective_brattain
7095aca78d63   ubuntu:18.04         "/bin/bash"   16 minutes ago   Up 16 minutes            nifty_mcclintock
[ec2-user@ip-172-31-20-228 ~]$
```

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- Search for Docker Image in Docker Hub Registry

```
docker search amazonlinux
```

```
[ec2-user@ip-172-31-20-228 ~]$ docker search amazonlinux
NAME                                   DESCRIPTION                                      STARS   OFFICIAL   AUTOMATED
amazonlinux                            Amazon Linux provides a stable, secure, and …    1139    [OK]
amd64/amazonlinux                      Amazon Linux provides a stable, secure, and …    3
hayajo/amazonlinux-sshd                https://github.com/hayajo/amazonlinux-sshd/      3                  [OK]
digitalgenius/amazonlinux-python3                                                       2
arm64v8/amazonlinux                    Amazon Linux provides a stable, secure, and …    1
brandedholdings/amazonlinux            Customized amazonlinux build                     1
michaukrieg/amazonlinux-occt-cgal-node Docker image of amazonlinux with opencascade…    1
dokken/amazonlinux-2                   Amazon Linux 2 image for kitchen-dokken          1
n0ts/amazonlinux-xray                  My AmazonLinux X-Ray Docker Image                1                  [OK]
blutv/amazonlinux-python27                                                              0
abeja/amazonlinux-elixir-node-awscli   [DEPRECATED] The docker image based on Amazo…    0                  [OK]
trollin/amazonlinux                                                                     0
ideavate/amazonlinux-node              Docker image starting with Amazon Linux 2 an…    0                  [OK]
socratessystems/amazonlinux            amazonlinux /w aws cli                           0                  [OK]
dokken/amazonlinux                     Amazon Linux 201X image for kitchen-dokken       0
taishin/amazonlinux-sshd                                                                0
robertdebock/amazonlinux               Container to test Ansible roles in, includin…    0
blutv/amazonlinux2-python3                                                              0
testbeds/amazonlinux                   Amazon Linux                                     0                  [OK]
onema/amazonlinux-numpy-lambda         DEPREACATED, USE https://hub.docker.com/r/on…    0
olisimon/amazonlinux-phoenix           Image based on amazonlinux for building or r…    0
diodonfrost/amazonlinux-2-ansible      DEPRECATED - move to diodonfrost/ansible-ama…    0                  [OK]
yasuhiroki/amazonlinux-rails                                                            0
enicia/amazonlinux-ruby                Ruby docker container based on AmazonLinux       0
craftmachine/amazonlinux-python3-terraform                                              0
[ec2-user@ip-172-31-20-228 ~]$
```

--

- Connect back to container prompt using `docker attach`

```
docker ps
# Syntax of below command is : docker attach CONTAINER_NAME|CONTAINER_ID
docker attach myAmznLinuxContainer
echo $HOME
```

```
[ec2-user@ip-172-31-20-228 ~]$ docker ps
CONTAINER ID   IMAGE                COMMAND       CREATED          STATUS         PORTS     NAMES
99a0be2ab835   amazonlinux:latest   "/bin/bash"   7 minutes ago    Up 7 minutes             myAmznLinuxContainer
ade7b6905ca2   ubuntu:20.04         "/bin/bash"   14 minutes ago   Up 14 minutes            objective_brattain
7095aca78d63   ubuntu:18.04         "/bin/bash"   21 minutes ago   Up 21 minutes            nifty_mcclintock
[ec2-user@ip-172-31-20-228 ~]$ docker attach myAmznLinuxContainer
bash-4.2# echo $HOME
/root
bash-4.2#
```

Docker Container Lifecycle Commands

Create Containers

- Using the `docker create` command will create a new Docker container with the specified docker image.

```
docker ps -a
docker create -i --name=myTestContainer -t ubuntu:20.04 /bin/bash
docker ps -a
```

```
[ec2-user@ip-172-31-20-228 ~]$ docker ps -a
CONTAINER ID   IMAGE                 COMMAND        CREATED          STATUS          PORTS     NAMES
99a0be2ab835   amazonlinux:latest    "/bin/bash"    15 minutes ago   Up 15 minutes             myAmznLinuxContainer
ade7b6905ca2   ubuntu:20.04          "/bin/bash"    22 minutes ago   Up 22 minutes             objective_brattain
7095aca78d63   ubuntu:18.04          "/bin/bash"    29 minutes ago   Up 29 minutes             nifty_mcclintock
[ec2-user@ip-172-31-20-228 ~]$ docker create --name=myTestContainer ubuntu:20.04
a3bea9592de41fe2353093064666086e1bc68768cfc6d9bc06e34f3bfeee3804
[ec2-user@ip-172-31-20-228 ~]$ docker ps -a
CONTAINER ID   IMAGE                 COMMAND        CREATED          STATUS          PORTS     NAMES
a3bea9592de4   ubuntu:20.04          "bash"         2 seconds ago    Created                   myTestContainer
99a0be2ab835   amazonlinux:latest    "/bin/bash"    15 minutes ago   Up 15 minutes             myAmznLinuxContainer
ade7b6905ca2   ubuntu:20.04          "/bin/bash"    22 minutes ago   Up 22 minutes             objective_brattain
7095aca78d63   ubuntu:18.04          "/bin/bash"    30 minutes ago   Up 29 minutes             nifty_mcclintock
[ec2-user@ip-172-31-20-228 ~]$
```

--

Start Container

- To start a stopped container OR to start a container that is having a `Created` Status.

```
docker start myTestContainer
docker ps -a
```

```
[ec2-user@ip-172-31-20-228 ~]$ docker ps -a
CONTAINER ID   IMAGE                 COMMAND        CREATED          STATUS          PORTS     NAMES
ceeb928f742f   ubuntu:20.04          "/bin/bash"    4 seconds ago    Created                   myTestContainer
99a0be2ab835   amazonlinux:latest    "/bin/bash"    21 minutes ago   Up 21 minutes             myAmznLinuxContainer
ade7b6905ca2   ubuntu:20.04          "/bin/bash"    28 minutes ago   Up 28 minutes             objective_brattain
7095aca78d63   ubuntu:18.04          "/bin/bash"    35 minutes ago   Up 35 minutes             nifty_mcclintock
[ec2-user@ip-172-31-20-228 ~]$ docker start myTestContainer
myTestContainer
[ec2-user@ip-172-31-20-228 ~]$ docker ps -a
CONTAINER ID   IMAGE                 COMMAND        CREATED          STATUS          PORTS     NAMES
ceeb928f742f   ubuntu:20.04          "/bin/bash"    14 seconds ago   Up 2 seconds              myTestContainer
99a0be2ab835   amazonlinux:latest    "/bin/bash"    21 minutes ago   Up 21 minutes             myAmznLinuxContainer
ade7b6905ca2   ubuntu:20.04          "/bin/bash"    28 minutes ago   Up 28 minutes             objective_brattain
7095aca78d63   ubuntu:18.04          "/bin/bash"    35 minutes ago   Up 35 minutes             nifty_mcclintock
[ec2-user@ip-172-31-20-228 ~]$
```

--

Run Container

- The `docker run` command will do the work of both `docker create` and `docker start` command. This command will create a new container using the specified image.

```
docker run --name=myUbuntuLinuxContainer -i -t ubuntu:20.04 /bin/bash
# enter the `Ctrl + P and Ctrl + Q` escape sequence
docker ps -a
```

--

Stop Container

- Stopping a running Container means to stop all the processes running in that Container.
- Stopping does not mean killing or ending the process.

```
#Stop the container - docker stop <CONTAINER_ID> OR docker stop <CONTAINER_NAME>
docker ps -a
docker stop myUbuntuLinuxContainer
docker ps -a
```

```
[ec2-user@ip-172-31-20-228 ~]$ docker ps -a
CONTAINER ID   IMAGE               COMMAND        CREATED          STATUS              PORTS      NAMES
7ebfe07d03bb   ubuntu:20.04        "/bin/bash"    14 seconds ago   Up 13 seconds                  myUbuntuLinuxContainer
ceeb928f742f   ubuntu:20.04        "/bin/bash"    7 minutes ago    Up 7 minutes                   myTestContainer
99a0be2ab835   amazonlinux:latest  "/bin/bash"    29 minutes ago   Up 29 minutes                  myAmznLinuxContainer
ade7b6905ca2   ubuntu:20.04        "/bin/bash"    36 minutes ago   Up 36 minutes                  objective_brattain
7095aca78d63   ubuntu:18.04        "/bin/bash"    43 minutes ago   Up 43 minutes                  nifty_mcclintock
[ec2-user@ip-172-31-20-228 ~]$ docker stop myUbuntuLinuxContainer
myUbuntuLinuxContainer
[ec2-user@ip-172-31-20-228 ~]$ docker ps -a
CONTAINER ID   IMAGE               COMMAND        CREATED             STATUS                PORTS      NAMES
7ebfe07d03bb   ubuntu:20.04        "/bin/bash"    About a minute ago  Exited (0) 1 second ago          myUbuntuLinuxContainer
ceeb928f742f   ubuntu:20.04        "/bin/bash"    9 minutes ago       Up 8 minutes                     myTestContainer
99a0be2ab835   amazonlinux:latest  "/bin/bash"    30 minutes ago      Up 30 minutes                    myAmznLinuxContainer
ade7b6905ca2   ubuntu:20.04        "/bin/bash"    37 minutes ago      Up 37 minutes                    objective_brattain
7095aca78d63   ubuntu:18.04        "/bin/bash"    44 minutes ago      Up 44 minutes                    nifty_mcclintock
[ec2-user@ip-172-31-20-228 ~]$
```

--

Restart Container

- Stop a running container and start it up again

```
docker restart myTestContainer
docker ps -a
```

```
[ec2-user@ip-172-31-20-228 ~]$ docker ps
CONTAINER ID   IMAGE               COMMAND        CREATED          STATUS           PORTS      NAMES
ceeb928f742f   ubuntu:20.04        "/bin/bash"    10 minutes ago   Up 9 minutes                myTestContainer
99a0be2ab835   amazonlinux:latest  "/bin/bash"    31 minutes ago   Up 31 minutes               myAmznLinuxContainer
ade7b6905ca2   ubuntu:20.04        "/bin/bash"    38 minutes ago   Up 38 minutes               objective_brattain
7095aca78d63   ubuntu:18.04        "/bin/bash"    45 minutes ago   Up 45 minutes               nifty_mcclintock
[ec2-user@ip-172-31-20-228 ~]$ docker restart myTestContainer
myTestContainer
[ec2-user@ip-172-31-20-228 ~]$ docker ps
CONTAINER ID   IMAGE               COMMAND        CREATED          STATUS           PORTS      NAMES
ceeb928f742f   ubuntu:20.04        "/bin/bash"    10 minutes ago   Up 2 seconds                myTestContainer
99a0be2ab835   amazonlinux:latest  "/bin/bash"    31 minutes ago   Up 31 minutes               myAmznLinuxContainer
ade7b6905ca2   ubuntu:20.04        "/bin/bash"    38 minutes ago   Up 38 minutes               objective_brattain
7095aca78d63   ubuntu:18.04        "/bin/bash"    45 minutes ago   Up 45 minutes               nifty_mcclintock
[ec2-user@ip-172-31-20-228 ~]$
```

--

Delete Container

- Removing or deleting the container means destroying all the processes running inside the container and then deleting the Container.
- It's preferred to destroy the container, only if the containter is in the Stopped state instead of forcefully destroying the running container.

```
docker ps
docker rm myTestContainer
# Error response from daemon: You cannot remove a running container
ceeb928f742feceebc93ac16c682bf90ca79d95ab5fe88022a19a1136fbd11d8. Stop the
container before attempting removal or force remove

docker stop myTestContainer
docker rm myTestContainer
docker ps -a
```

--

```
[ec2-user@ip-172-31-20-228 ~]$ docker ps
CONTAINER ID   IMAGE               COMMAND        CREATED         STATUS          PORTS      NAMES
ceeb928f742f   ubuntu:20.04        "/bin/bash"    17 minutes ago  Up 3 seconds               myTestContainer
99a0be2ab835   amazonlinux:latest  "/bin/bash"    38 minutes ago  Up 38 minutes              myAmznLinuxContainer
ade7b6905ca2   ubuntu:20.04        "/bin/bash"    45 minutes ago  Up 45 minutes              objective_brattain
7095aca78d63   ubuntu:18.04        "/bin/bash"    53 minutes ago  Up 53 minutes              nifty_mcclintock
[ec2-user@ip-172-31-20-228 ~]$ docker rm myTestContainer
Error response from daemon: You cannot remove a running container ceeb928f742feceebc93ac16c682bf90ca79d95ab5fe88022a19a1136fbd11d8. Stop the container before
 attempting removal or force remove
[ec2-user@ip-172-31-20-228 ~]$ docker stop myTestContainer
myTestContainer
[ec2-user@ip-172-31-20-228 ~]$ docker ps -a
CONTAINER ID   IMAGE               COMMAND        CREATED         STATUS               PORTS      NAMES
7ebfe07d03bb   ubuntu:20.04        "/bin/bash"    10 minutes ago  Exited (0) 8 minutes ago        myUbuntuLinuxContainer
ceeb928f742f   ubuntu:20.04        "/bin/bash"    17 minutes ago  Exited (0) 3 seconds ago        myTestContainer
99a0be2ab835   amazonlinux:latest  "/bin/bash"    39 minutes ago  Up 39 minutes                   myAmznLinuxContainer
ade7b6905ca2   ubuntu:20.04        "/bin/bash"    45 minutes ago  Up 45 minutes                   objective_brattain
7095aca78d63   ubuntu:18.04        "/bin/bash"    53 minutes ago  Up 53 minutes                   nifty_mcclintock
[ec2-user@ip-172-31-20-228 ~]$ docker rm myTestContainer
myTestContainer
[ec2-user@ip-172-31-20-228 ~]$ docker ps -a
CONTAINER ID   IMAGE               COMMAND        CREATED         STATUS               PORTS      NAMES
7ebfe07d03bb   ubuntu:20.04        "/bin/bash"    10 minutes ago  Exited (0) 8 minutes ago        myUbuntuLinuxContainer
99a0be2ab835   amazonlinux:latest  "/bin/bash"    39 minutes ago  Up 39 minutes                   myAmznLinuxContainer
ade7b6905ca2   ubuntu:20.04        "/bin/bash"    45 minutes ago  Up 45 minutes                   objective_brattain
7095aca78d63   ubuntu:18.04        "/bin/bash"    53 minutes ago  Up 53 minutes                   nifty_mcclintock
[ec2-user@ip-172-31-20-228 ~]$
```

- Run below commands in EC2 linux shell

```
sudo docker ps
sudo docker ps --no-trunc
```

--

- docker ps command attributes
  - CONTAINER ID: container ID associated with the container.
  - IMAGE: image from which the Docker container has been created.
  - COMMAND: command executed during the container launch.
  - CREATED: Time when the container was created.
  - STATUS: Current status of the container.

- o **PORTS**: if any port has been assigned to the container.
- o **NAMES**: The Docker engine auto-generates a random container name. Use `--name` option to specify a customer name in the `docker run` subcommand.

Changes inside Container Files

- Track the changes inside the containers, connect into shell of the docker and create some directories and files inside the container.

```
sudo docker run -i -t ubuntu:18.04 /bin/bash
cd /home
ls -al
touch file{1..5}
touch {f1.txt,f2.txt,f3.txt}
ls -al
pwd
# enter the `Ctrl + P and Ctrl + Q` escape sequence
```

--

```
[ec2-user@ip-172-31-20-228 ~]$ sudo docker run -i -t ubuntu:18.04 /bin/bash
root@040d0e625bcd:/# cd /home
root@040d0e625bcd:/home# ls -al
total 0
drwxr-xr-x 2 root root  6 Apr 24  2018 .
drwxr-xr-x 1 root root  6 Jan 21 20:46 ..
root@040d0e625bcd:/home# touch file{1..5}
root@040d0e625bcd:/home# touch {f1.txt,f2.txt,f3.txt}
root@040d0e625bcd:/home# ls -al
total 0
drwxr-xr-x 1 root root 113 Jan 21 20:47 .
drwxr-xr-x 1 root root  18 Jan 21 20:46 ..
-rw-r--r-- 1 root root   0 Jan 21 20:47 f1.txt
-rw-r--r-- 1 root root   0 Jan 21 20:47 f2.txt
-rw-r--r-- 1 root root   0 Jan 21 20:47 f3.txt
-rw-r--r-- 1 root root   0 Jan 21 20:47 file1
-rw-r--r-- 1 root root   0 Jan 21 20:47 file2
-rw-r--r-- 1 root root   0 Jan 21 20:47 file3
-rw-r--r-- 1 root root   0 Jan 21 20:47 file4
-rw-r--r-- 1 root root   0 Jan 21 20:47 file5
root@040d0e625bcd:/home# pwd
/home
root@040d0e625bcd:/home#
```

--

- Use `docker diff` command to check the changes made inside the container

```
docker ps
docker diff stoic_gates
```

```
[ec2-user@ip-172-31-20-228 ~]$ docker ps
CONTAINER ID    IMAGE               COMMAND         CREATED             STATUS              PORTS       NAMES
040d0e625bcd    ubuntu:18.04        "/bin/bash"     About a minute ago  Up About a minute               stoic_gates
99a0be2ab835    amazonlinux:latest  "/bin/bash"     43 minutes ago      Up 43 minutes                   myAmznLinuxContainer
ade7b6905ca2    ubuntu:20.04        "/bin/bash"     49 minutes ago      Up 49 minutes                   objective_brattain
7095aca78d63    ubuntu:18.04        "/bin/bash"     57 minutes ago      Up 57 minutes                   nifty_mcclintock
[ec2-user@ip-172-31-20-228 ~]$ docker diff stoic_gates
C /home
A /home/file3
A /home/file4
A /home/file5
A /home/f1.txt
A /home/f2.txt
A /home/f3.txt
A /home/file1
A /home/file2
[ec2-user@ip-172-31-20-228 ~]$
```