

Introduction To Docker

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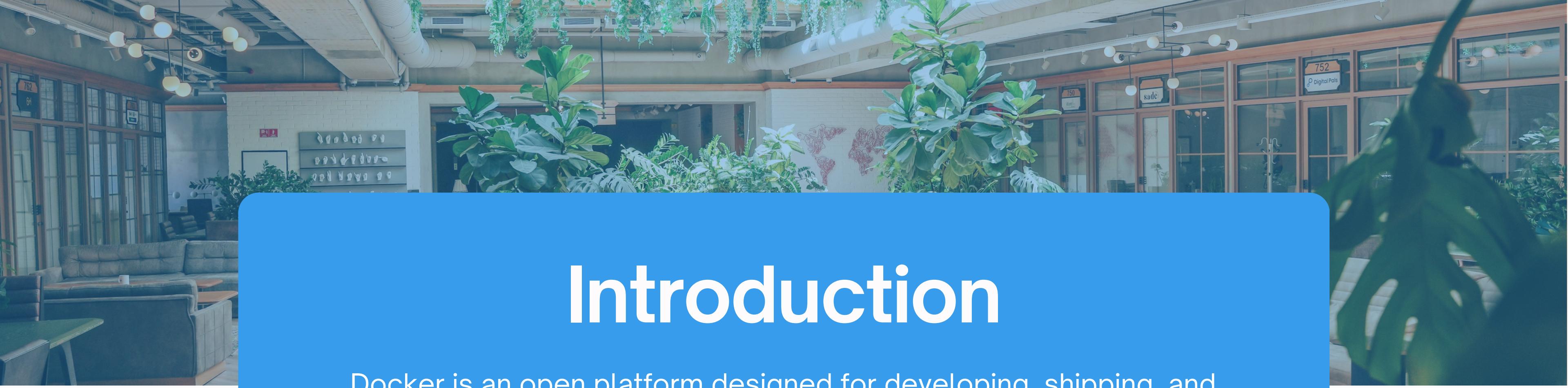


Overview

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Introduction

Docker is an open platform designed for developing, shipping, and running applications. It allows developers to separate their applications from the underlying infrastructure, enabling faster software delivery and more efficient management of applications

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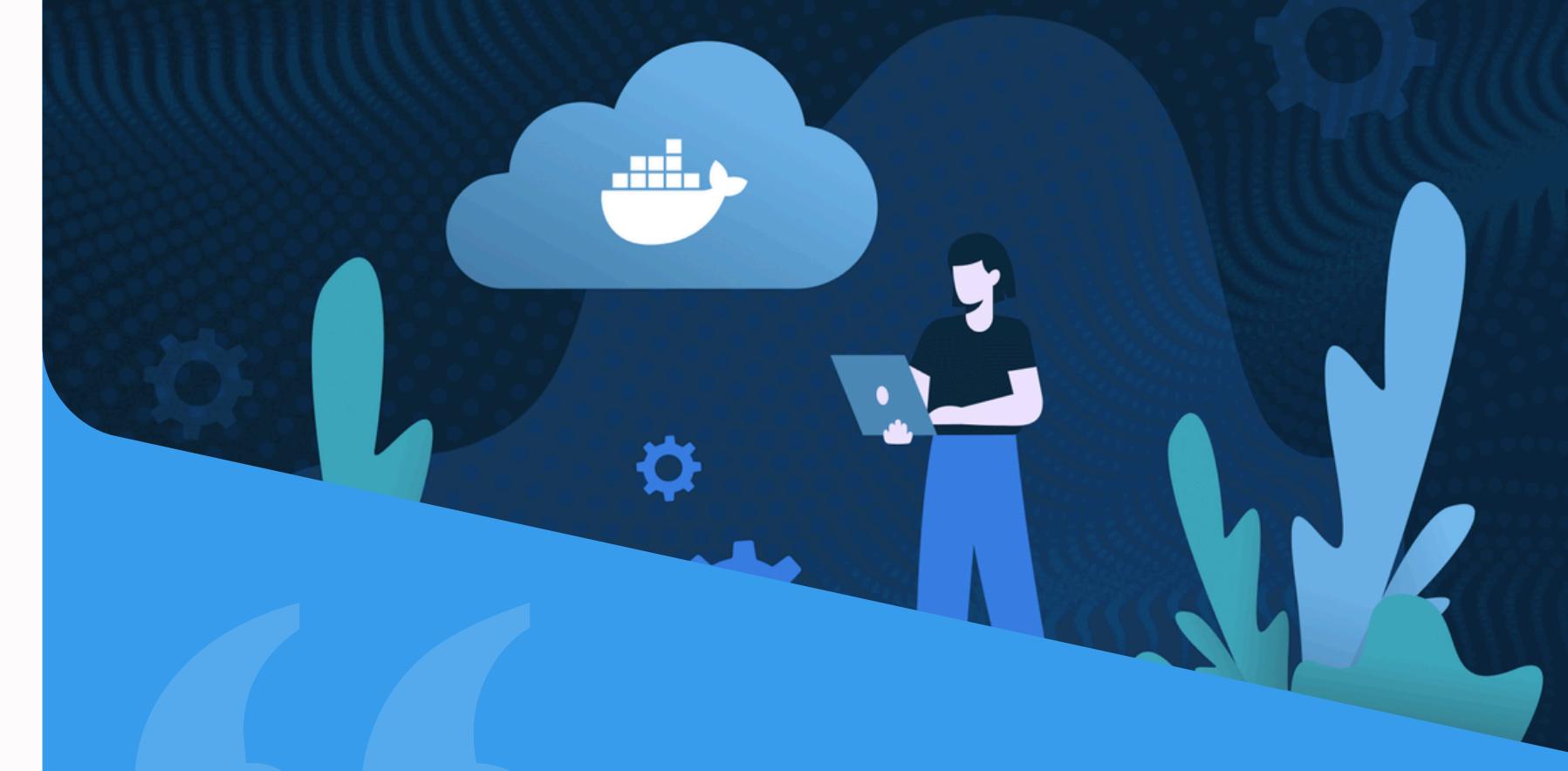


Where We Use Docker?

1. **Development Environments**: Docker simplifies the setup of development environments by allowing developers to create consistent and isolated environments using containers.
2. **Microservices Architecture**: In modern application development, microservices architecture is increasingly popular.
3. **Cloud Deployment**: Docker containers can be easily deployed to cloud platforms, such as AWS, Google Cloud, and Azure. This capability allows developers to leverage cloud resources efficiently, scaling applications up or down as needed.

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How to Run a Docker Container on the Cloud



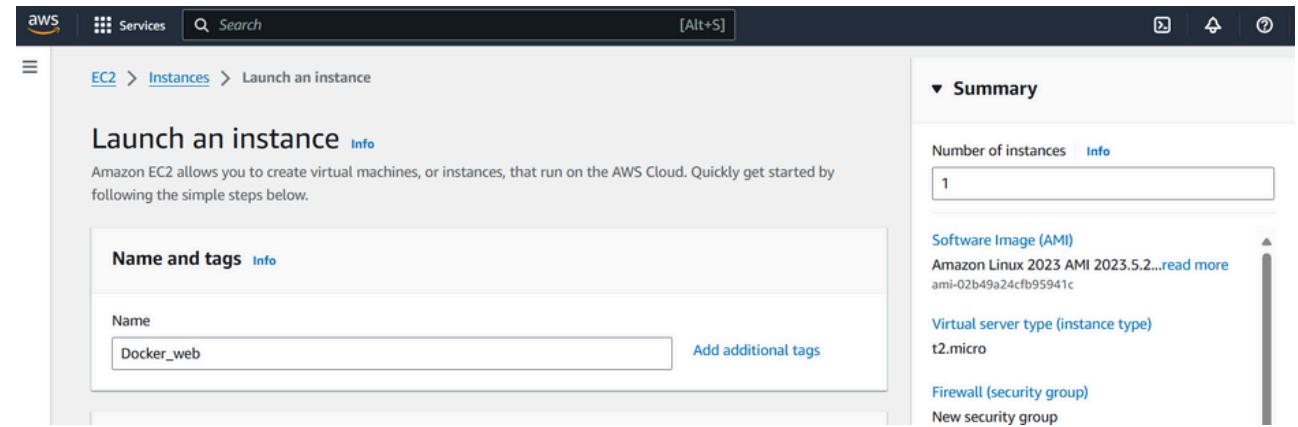
At the heart of Docker is the concept of containers

Lunch Aws Linux to install docker Image

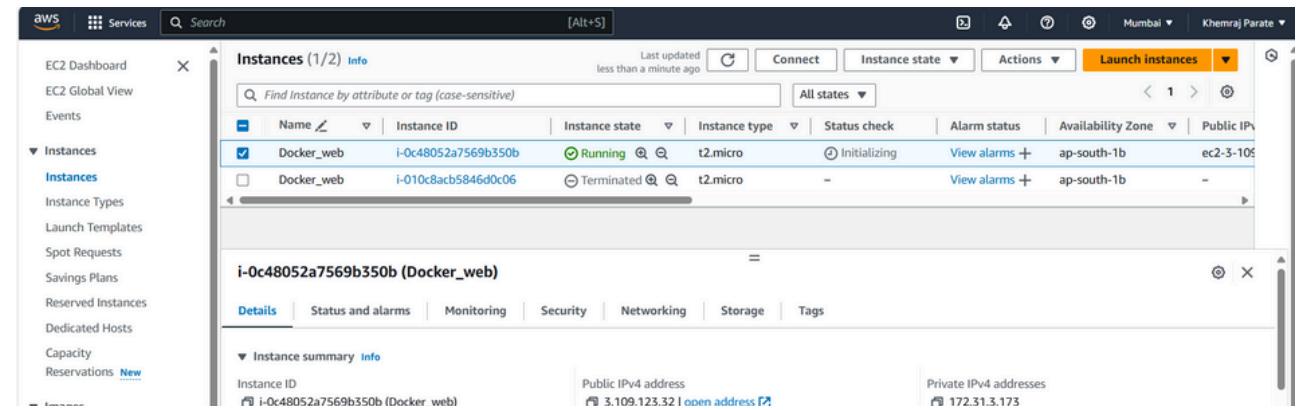
To install Docker on an Amazon EC2 instance running Amazon Linux

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- Launch a Instance of AWS EC2 Service



- Connect a Instance with Aws Linux



- Ready To Setup Docker

```
Amazon Linux 2023
https://aws.amazon.com/linux/amazon-linux-2023

[ec2-user@ip-172-31-3-173 ~]$ [ec2-user@ip-172-31-3-173 ~]$ [ec2-user@ip-172-31-3-173 ~]$ sudo -i
[root@ip-172-31-3-173 ~]# ls
[root@ip-172-31-3-173 ~]# 
```

Installation & Setup

Installing Docker is a straightforward process that varies slightly depending on your operating system. Below, I'll outline the steps for installing Docker on different platforms, focusing primarily on Linux.

Step1: Install Docker on the top of amazon Linux

\$Yum Install Docker

Step2: Check a status of Docker Service

\$systemctl status docker

Step3: Start Docker Service

\$systemctl Start docker

Step4: Pull the Docker Image

\$docker pull ubuntu:14.04

Installation & Setup

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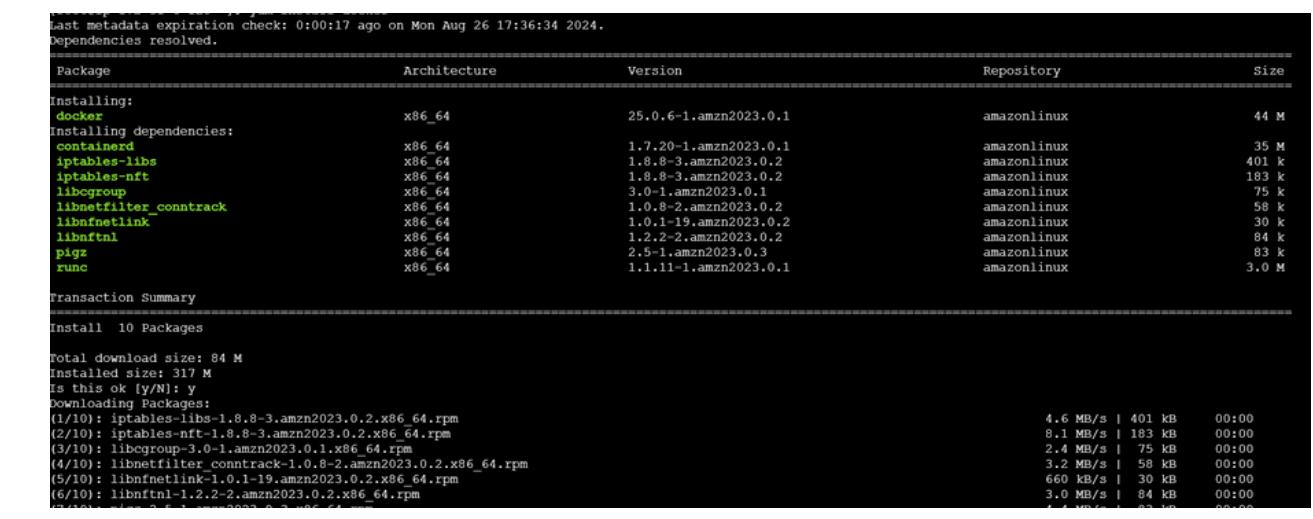
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Step 5: Run a Docker Image on the top Amazon Linux

\$docker run -t -i ubuntu:14.04



```
aws Services Search [Alt+S] Mumbai | Khemraj Pa
Amazon Linux 2023
https://aws.amazon.com/linux/amazon-linux-2023
[ec2-user@ip-172-31-6-120 ~]$ [ec2-user@ip-172-31-6-120 ~]$ [ec2-user@ip-172-31-6-120 ~]$ sudo -i
[root@ip-172-31-6-120 ~]# whoami
root
```



```
Last metadata expiration check: 0:00:17 ago on Mon Aug 26 17:36:34 2024.
Dependencies resolved.

Package           Architecture Version      Repository  Size
Installing:
  docker          x86_64      25.0.6-1.amzn2023.0.1   amazonlinux  44 M
  Installing dependencies:
    containerd     x86_64      1.7.20-1.amzn2023.0.1   amazonlinux  35 M
    iptables-libc  x86_64      1.8.8-3.amzn2023.0.2   amazonlinux  401 k
    iptables-nft   x86_64      1.8.8-3.amzn2023.0.2   amazonlinux  183 k
    libcgroup       x86_64      3.0-1.amzn2023.0.1   amazonlinux  75 k
    libnetfilter_conntrack x86_64  1.0.8-2.amzn2023.0.2   amazonlinux  58 k
    libnftnl        x86_64      1.0.1-19.amzn2023.0.2  amazonlinux  30 k
    libnftnl        x86_64      1.2.2-2.amzn2023.0.2  amazonlinux  84 k
    pigz            x86_64      2.5-1.amzn2023.0.3   amazonlinux  83 k
    runc            x86_64      1.1.11-1.amzn2023.0.1  amazonlinux  3.0 M

Transaction Summary

Install 10 Packages

Total download size: 84 M
Installed size: 317 M
Is this ok [y/N]: y
Downloading Packages:
(1/10): iptables-libc-1.8.8-3.amzn2023.0.2.x86_64.rpm 4.6 MB/s | 401 kB  00:00
(2/10): iptables-nft-1.8.8-3.amzn2023.0.2.x86_64.rpm 8.1 MB/s | 183 kB  00:00
(3/10): libcgroup-3.0-1.amzn2023.0.1.x86_64.rpm 2.4 MB/s | 75 kB  00:00
(4/10): libnetfilter_conntrack-1.0.8-2.amzn2023.0.2.x86_64.rpm 3.2 MB/s | 58 kB  00:00
(5/10): libnftnl-1.0.1-19.amzn2023.0.2.x86_64.rpm 660 kB/s | 30 kB  00:00
(6/10): libnftnl-1.2.2-2.amzn2023.0.2.x86_64.rpm 3.0 MB/s | 84 kB  00:00
(7/10): pigz-2.5-1.amzn2023.0.3.x86_64.rpm 1.1 MB/s | 83 kB  00:00
(8/10): runc-1.1.11-1.amzn2023.0.1.x86_64.rpm 1.1 MB/s | 30 kB  00:00
(9/10): containerd-1.7.20-1.amzn2023.0.1.x86_64.rpm 1.1 MB/s | 30 kB  00:00
(10/10): docker-25.0.6-1.amzn2023.0.1.x86_64.rpm 1.1 MB/s | 44 kB  00:00

[root@ip-172-31-6-120 ~]# systemctl status docker
● docker.service - Docker Application Container Engine
  Loaded: loaded (/usr/lib/systemd/system/docker.service; disabled; preset: disabled)
  Active: inactive (dead)
    TriggeredBy: ● docker.socket
      Docs: https://docs.docker.com
[root@ip-172-31-6-120 ~]# systemctl start docker
[root@ip-172-31-6-120 ~]# systemctl status docker
● docker.service - Docker Application Container Engine
  Loaded: loaded (/usr/lib/systemd/system/docker.service; disabled; preset: disabled)
  Active: active (running) since Mon 2024-08-26 17:37:31 UTC; 3s ago
    TriggeredBy: ● docker.socket
      Docs: https://docs.docker.com
  Process: 26737 ExecStartPre=/bin/mkdir -p /run/docker (code-exited, status=0/SUCCESS)
  Process: 26738 ExecStartPre=/usr/libexec/docker/docker-setup-runtimes.sh (code-exited, status=0/SUCCESS)
  Main PID: 26739 (dockerd)
    Tasks: 7
   Memory: 29.6M
      CPU: 319ms
     CGroup: /system.slice/docker.service
             └─26739 /usr/bin/dockerd -H fd:// --containerd=/run/containerd/containerd.sock --default-ulimit nofile=32768:65536

Aug 26 17:37:30 ip-172-31-6-120.ap-south-1.compute.internal systemd[1]: Starting docker.service - Docker Application Container Engine...
Aug 26 17:37:30 ip-172-31-6-120.ap-south-1.compute.internal dockerd[26739]: time="2024-08-26T17:37:30.584038982Z" level=info msg="Starting up"
Aug 26 17:37:30 ip-172-31-6-120.ap-south-1.compute.internal dockerd[26739]: time="2024-08-26T17:37:30.643521341Z" level=info msg="Loading containers: start."
```

Installation & Setup

Installing Docker is a straightforward process that varies slightly depending on your operating system. Below, I'll outline the steps for installing Docker on different platforms, focusing primarily on Linux.

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Monitor: Monitor the ubuntu image is running on the top of amazon linux as a EC2 Service

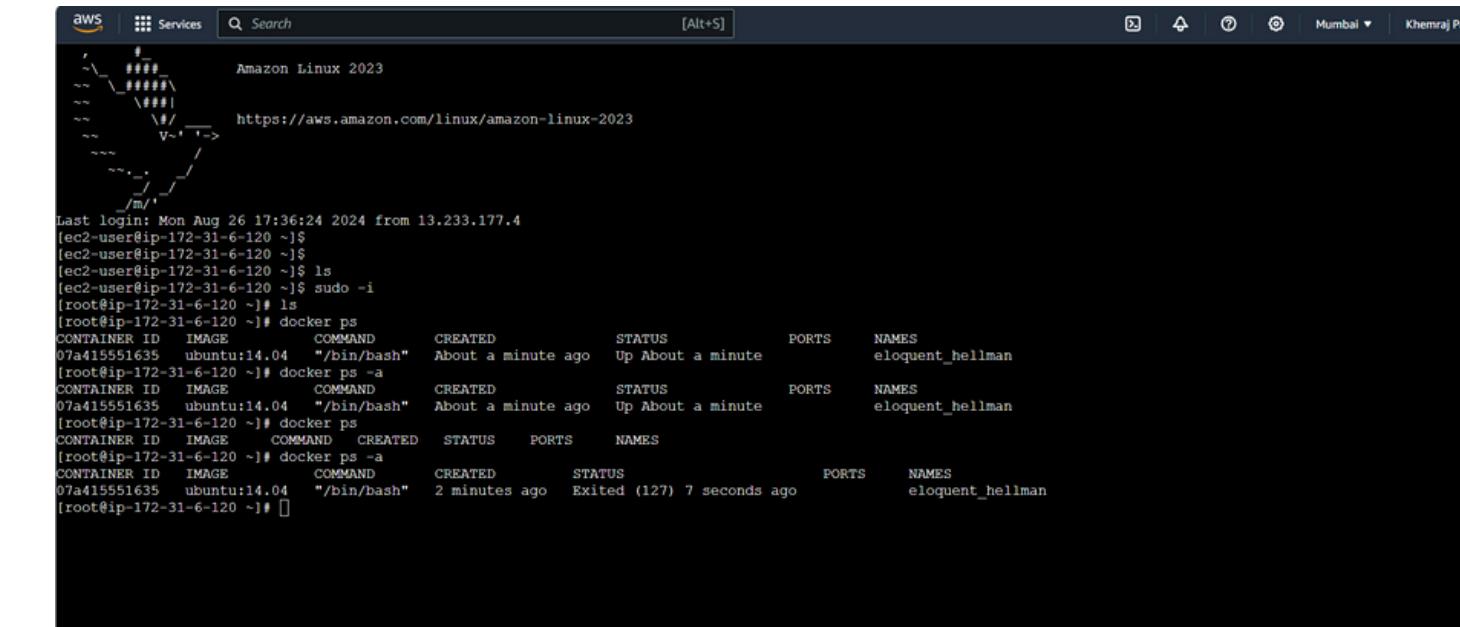
\$docker ps

Monitor: See the history of Docker Images

\$docker ps -a

Stop: Stop the image on the amazon linux

\$Stop



```
aws | Services | Search [Alt+S] | https://aws.amazon.com/lambda/amazon-lambda-2023
Amazon Linux 2023
https://aws.amazon.com/linux/amazon-linux-2023

Last login: Mon Aug 26 17:36:24 2024 from 13.233.177.4
[ec2-user@ip-172-31-6-120 ~]$ 
[ec2-user@ip-172-31-6-120 ~]$ ls
[ec2-user@ip-172-31-6-120 ~]$ sudo -i
[root@ip-172-31-6-120 ~]# ls
[root@ip-172-31-6-120 ~]# docker ps
CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES
07a415551635 ubuntu:14.04 "/bin/bash" About a minute ago Up About a minute eloquent_hellman
[root@ip-172-31-6-120 ~]# docker ps -a
CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES
07a415551635 ubuntu:14.04 "/bin/bash" About a minute ago Up About a minute eloquent_hellman
[root@ip-172-31-6-120 ~]# docker ps
CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES
[root@ip-172-31-6-120 ~]# docker ps -a
CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES
07a415551635 ubuntu:14.04 "/bin/bash" 2 minutes ago Exited (127) 7 seconds ago eloquent_hellman
[root@ip-172-31-6-120 ~]# 
```



THANK TOU



+91 9356456823



paratekhemraj6@gmail.com



Indira Gandhi Ward Hinganghat

@DevOpsWithKhemraj