DevOps { PW Assignment }

Assignment : Theoretical Overview of Docker and Containerization

Theoretical Overview of Docker and Containerization

➢ What is Docker?

Docker is a **containerization platform** that automates the deployment of applications inside containers. It provides tools to **build, ship, and run** applications as portable containers.

➢ Key Components:

- **Docker Engine:** Core service to run containers.
- **Docker Images:** Read-only templates with app code + dependencies.
- **Docker Containers:** Running instances of Docker images.
- **Dockerfile:** Script to automate image creation.
- **Docker Hub:** Cloud-based registry to store and share Docker images.

➢ Why Use Docker?

- **Portability:** Runs the same way across environments (dev, test, prod).
- **Efficiency:** Less resource usage than VMs.
- **Isolation:** Each app runs in its own container.
- **Speed:** Faster startup and deployment.

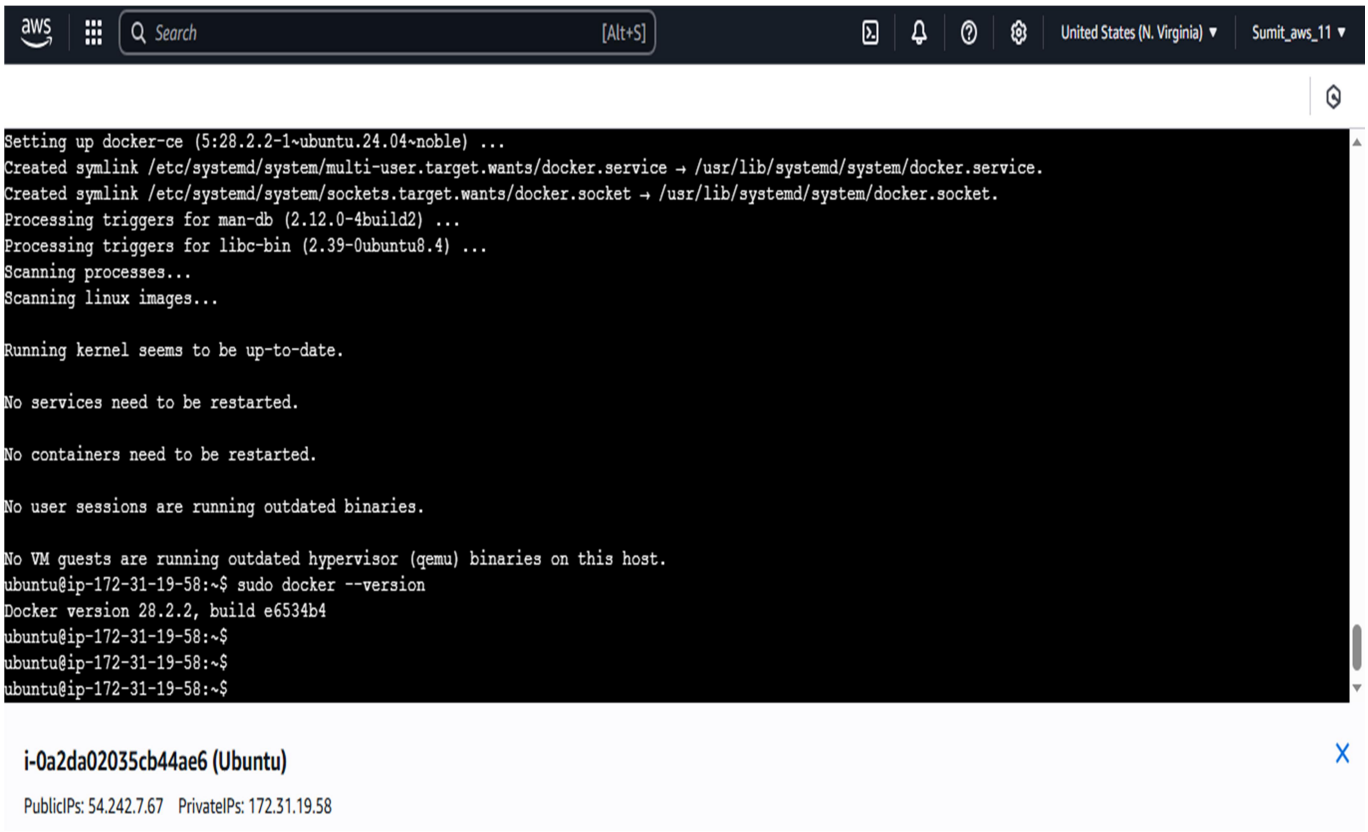
➢ What is Containerization?

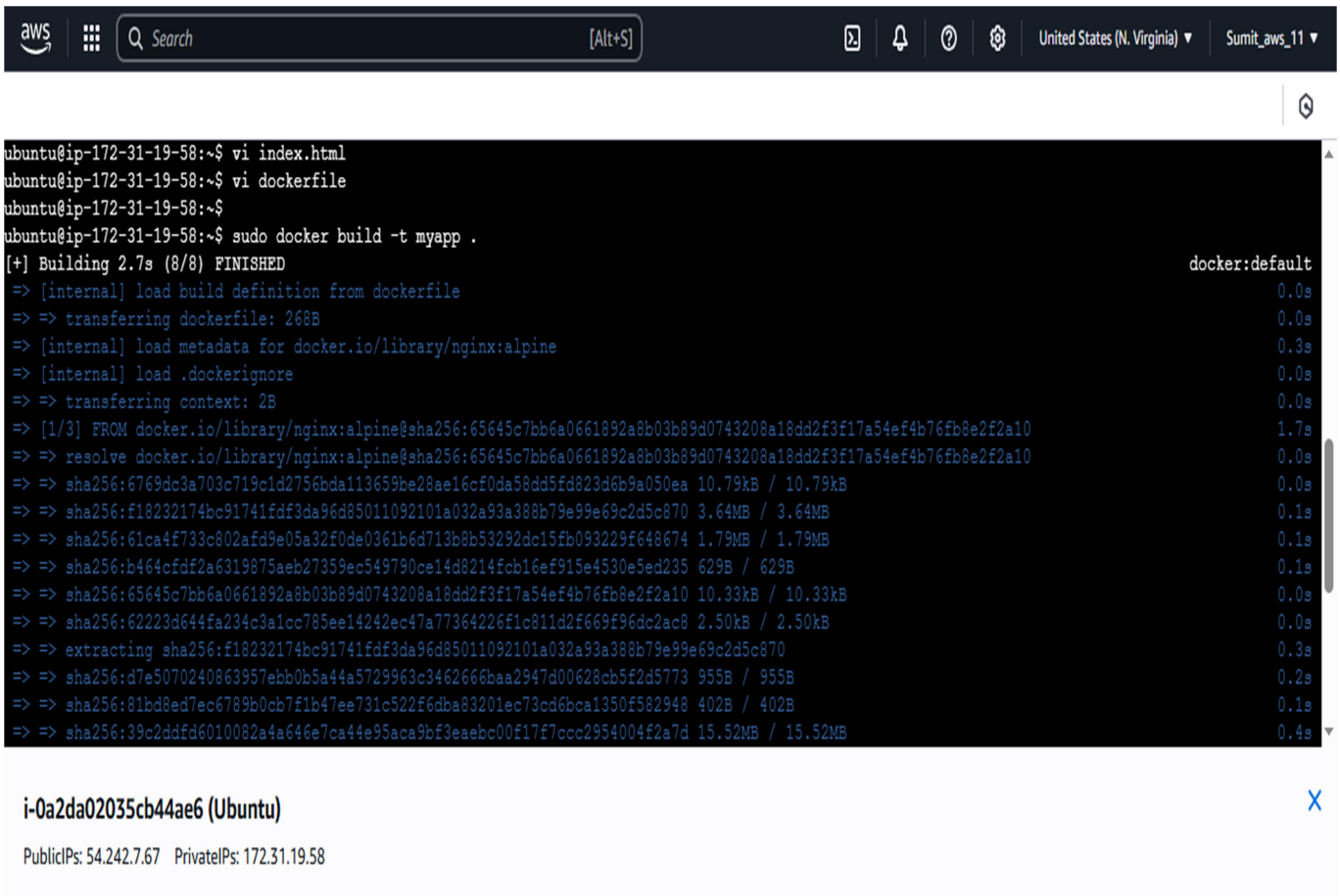
Containerization is a technology that packages applications and their dependencies together into a single unit called a **container**. Containers run on a shared operating system kernel but are isolated from each other.

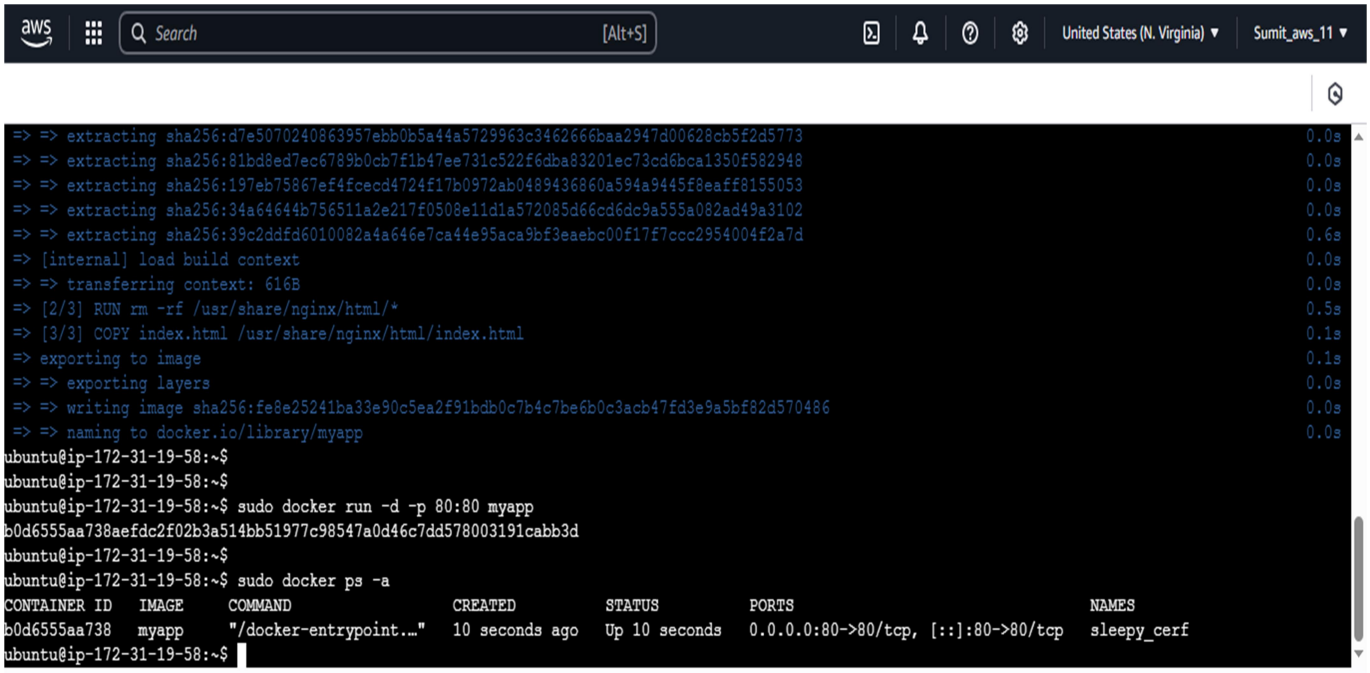
✅Key Characteristics:

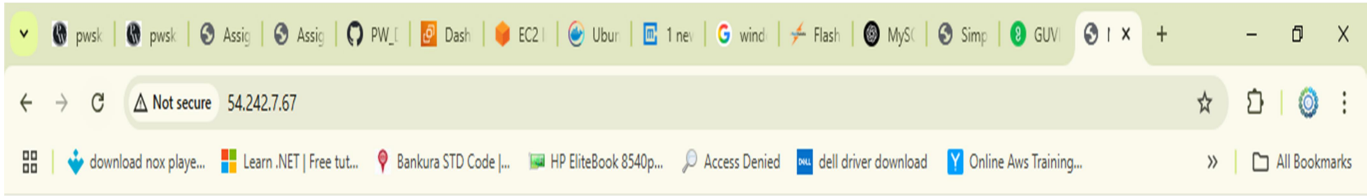
- Lightweight (no need for a full OS like VMs)
- Portable across environments (Dev → Test → Prod)
- Fast startup and shutdown
- Isolated execution environment

1. Install Docker and create Dockerfiles to containerize applications?









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