DOCKERIZED WEB SERVER DEPLOYMENT AND MANAGEMENT

SCOPE:

The project involves setting up Docker on an Ubuntu virtual machine, pulling and running web server images (httpd and nginx), deploying web applications from Git repositories into Docker containers, configuring network ports for accessibility, and managing Docker images on DockerHub. The project also includes enabling the necessary ports on another virtual machine to ensure comprehensive deployment and management.

PURPOSE:

The purpose of this project is to demonstrate the deployment and management of web server applications using Docker. By containerizing applications, this project aims to highlight the benefits of Docker in terms of portability, consistency, and scalability of web applications. Additionally, it showcases the process of integrating Docker with DockerHub for image management and repository creation..

TOOLS AND TECHNOLOGIES USED:

Cloud : Azure cloud

Operating System: Ubuntu (Virtual Machine)

Containerization: Docker

Docker Engine: For running containers

DockerHub: For image management and repository creation

Web Servers:

httpd (Apache HTTP Server)

nginx

Version Control: Git

Ports Configuration: Ports 800 and 8000 for web application access

IMPLEMENTATION:

Setup Docker on Ubuntu VM:

Installed Docker on an Ubuntu virtual machine.

Pull and Run Docker Images:

Pulled httpd and nginx images from the Docker repository.

Ran the Docker images as containers.

Deploy Web Applications:

Cloned web applications from Git repositories.

Copied the cloned applications into the respective Docker containers.

Network Configuration:

Configured ports 800 and 8000 to ensure the applications running inside the containers are accessible externally.

```
root@anovm:/# docker images
REPOSITORY          TAG       IMAGE ID       CREATED          SIZE
21a91a05d5/repo2    latest    4d702191c9ac   15 minutes ago   229MB
21a91a05d5/repo1    latest    6ec8d24e2032   18 minutes ago   229MB
root@anovm:/# docker run -d -p 800:80 21a91a05d5/repo1:latest
d7b4fa8f55071d7119f30ad3e7c45dd11cbfd7c35754bcfbc27f4bfe5cc05494
root@anovm:/# docker run -d -p 8000:80 21a91a05d5/repo2:latest
ac36f7fe0754a09f5e1b3705c6ac7a2538c71415bd210270624aebdfbb435df7
```

DockerHub Integration:

Created repositories on DockerHub.

Pushed the Docker images to DockerHub for version control and easy access.

Additional Configuration:

Enabled the required ports on another virtual machine to ensure comprehensive deployment and access.

OUTCOME:

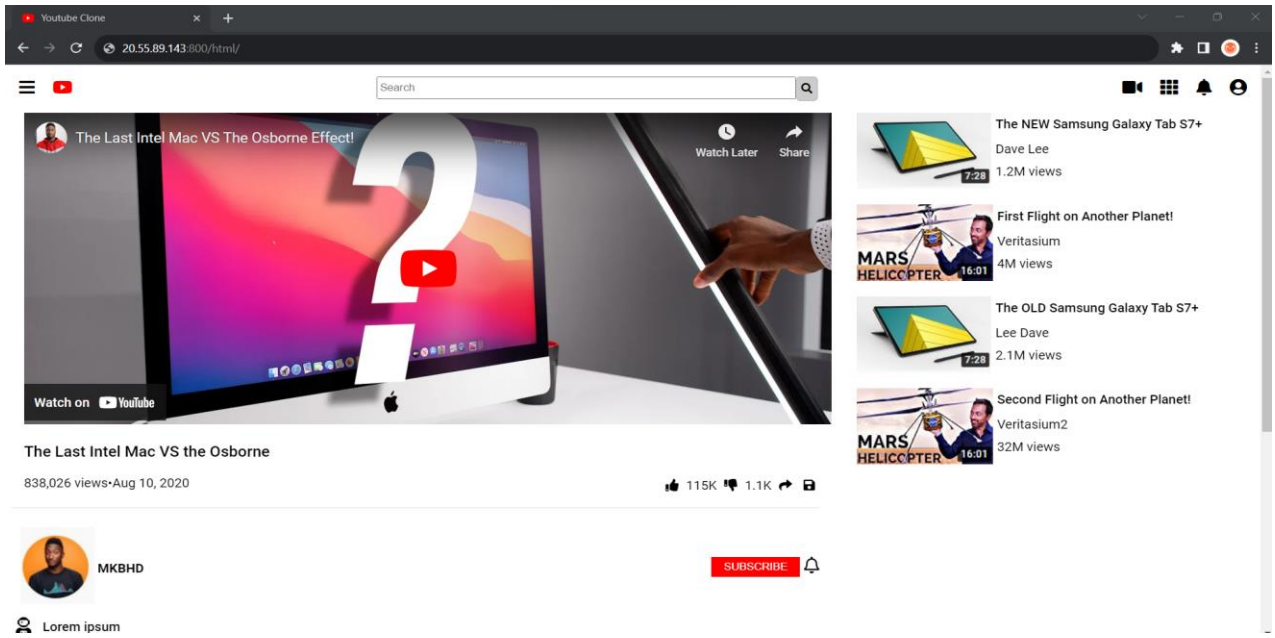
Successfully set up and configured Docker on an Ubuntu virtual machine.

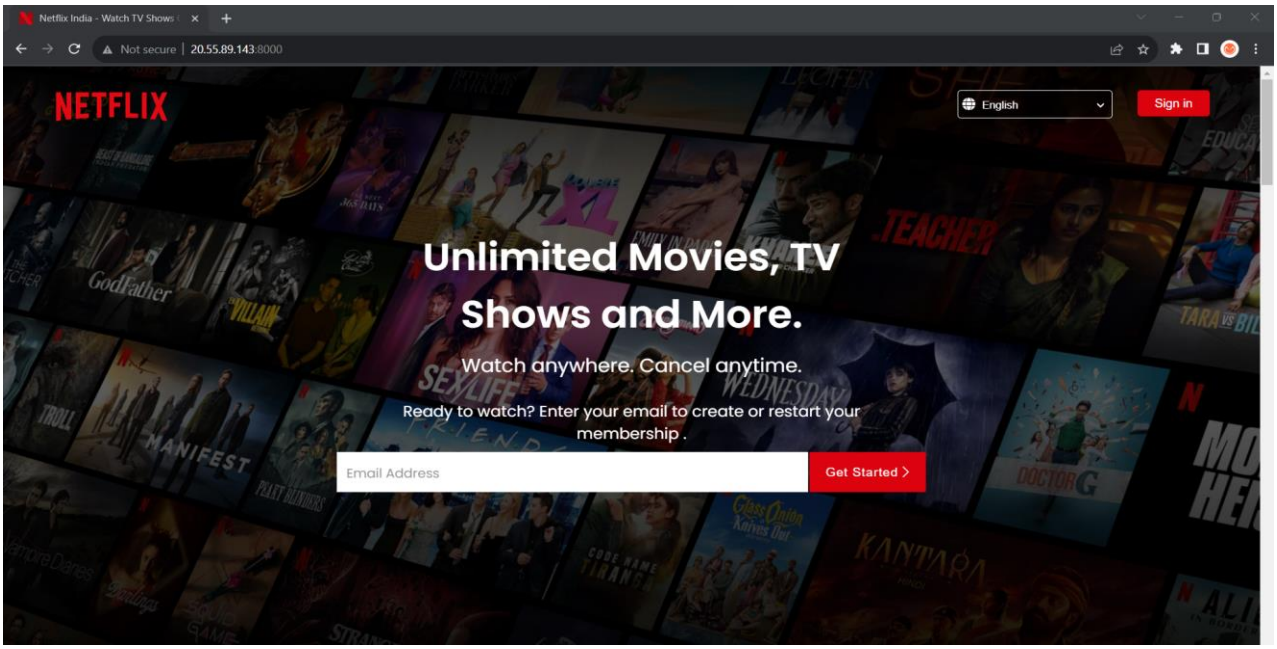
Deployed web server applications (httpd and nginx) within Docker containers.

Ensured the applications were accessible through configured network ports (800 and 8000).

Managed Docker images effectively by creating and pushing them to DockerHub repositories.

Demonstrated the practical benefits of containerization in terms of portability, consistency, and ease of deployment.





CONCLUSION:

The project successfully demonstrated the deployment and management of web server applications using Docker. By leveraging Docker, the project showcased how to achieve consistent and portable application environments, simplifying the process of deploying web applications. The integration with DockerHub further illustrated the ease of managing and sharing Docker images. Overall, this project highlights the practical applications of Docker in modern web development and deployment workflows, emphasizing the benefits of containerization in maintaining robust and scalable web services.