

Microservice orchestration platforms using Kubernetes

Lab- 1 Microservice orchestration platforms using Kubernetes

-Brijesh Varsani

Task: Install Docker and get the enough knowledge to deploy images into the Docker tool.

- Update ubuntu

```
brijesh@brijesh-VirtualBox:~$ sudo apt update
[sudo] password for brijesh:
Hit:1 http://pl.archive.ubuntu.com/ubuntu focal InRelease
```

- Upgrade:

```
brijesh@brijesh-VirtualBox:~$ sudo apt upgrade
Reading package lists... Done
```

- Install curl

```
brijesh@brijesh-VirtualBox:~$ sudo apt install curl
Reading package lists... Done
```

- Install/download minikube and check package

```
brijesh@brijesh-VirtualBox:~$ curl -LO https://storage.googleapis.com/minikube/releases/latest/minikube_latest_amd64.deb
% Total    % Received % Xferd  Average Speed   Time    Time     Time  Current
           Dload  Upload   Total   Spent    Left  Speed
100 19.0M  100 19.0M    0     0  8414k      0  0:00:02  0:00:02 --:--:-- 8411k
brijesh@brijesh-VirtualBox:~$ ll
total 74264
```

- Select package : sudo dpkg -i minikube_latest_amd64.deb

- Unpacking and setting up minikube

- Start minikube;

```
brijesh@brijesh-VirtualBox:~$ minikube start
🌻 minikube v1.14.1 on Ubuntu 20.04 (vbox/amd64)
🌻 Using the docker driver based on existing profile
```

- Install Docker:

```
brijesh@brijesh-VirtualBox:~$ sudo apt install docker
Reading package lists... Done
```

- Install certificate:

```
brijesh@brijesh-VirtualBox:~$ sudo apt install apt-transport-https ca-certificates curl software-properties-common
Reading package lists... Done
```

-add key to protect

```
brijesh@brijesh-VirtualBox:~$ curl -fsSL https://download.docker.com/linux/ubuntu/gpg | sudo apt-key add -
OK
```

```
brijesh@brijesh-VirtualBox:~$ sudo add-apt-repository "deb [arch=amd64] https://download.docker.com/linux/ubuntu bionic stable"
Hit:1 http://pl.archive.ubuntu.com/ubuntu focal InRelease
```

- Install Docker and deploy an images.

```
brijesh@brijesh-VirtualBox:~$ sudo apt install docker
Reading package lists... Done
```

```
brijesh@brijesh-VirtualBox:~$ sudo systemctl status docker
● docker.service - Docker Application Container Engine
   Loaded: loaded (/lib/systemd/system/docker.service; enabled; vendor preset: enabled)
   Active: active (running) since Fri 2020-10-30 18:35:21 CET; 31min ago
   TriggeredBy: ● docker.socket
```

- Deploy hello world application

```
brijesh@brijesh-VirtualBox:~$ docker run hello-world
```

Hello from Docker!

This message shows that your installation appears to be working correctly.

```
brijesh@brijesh-VirtualBox:~$ docker search ubuntu
```

| NAME | STARS | OFFICIAL | AUTOMATED | DESCRIPTION |
|--------------------------------|-------|----------|-----------|---|
| ubuntu | 11460 | [OK] | | Ubuntu is a Debian-based Linux operating system. |
| ng sys... | | | | |
| dorowu/ubuntu-desktop-lxde-vnc | | | | Docker image to provide HTML5 VNC interface to a desktop environment. |
| rface ... | 471 | | [OK] | |
| rastasheep/ubuntu-sshd | | | | Dockerized SSH service, built on top of Ubuntu. |

```
brijesh@brijesh-VirtualBox:~$ docker pull ubuntu
```

Using default tag: latest

latest: Pulling from library/ubuntu

```
brijesh@brijesh-VirtualBox:~$ docker run -it ubuntu
```

```
root@2cf07c0f9d75:/# apt update
```

```
Get:1 http://archive.ubuntu.com/ubuntu focal InRelease [265 kB]
```

- Docker commit:

```
brijesh@brijesh-VirtualBox:~$ docker commit -m "Initial commit Brijesh nodejs" -a "brijesh" 2cf07c0f9d75 brijesh/ubuntu-nodejs
sha256:98066673901e0ba2bee24020771d34ba887e61fd928c0b82015a451c1cf37f71
```

```
brijesh@brijesh-VirtualBox:~$ docker images
```

| REPOSITORY | TAG | IMAGE ID | CREATED | SIZE |
|-----------------------------|---------|--------------|---------------|--------|
| brijesh/ubuntu-nodejs | latest | 98066673901e | 4 minutes ago | 166MB |
| ubuntu | latest | d70eaf7277ea | 7 days ago | 72.9MB |
| gcr.io/k8s-minikube/kicbase | v0.0.13 | 90f1294ff9ac | 4 weeks ago | 800MB |
| hello-world | latest | bf756fb1ae65 | 10 months ago | 13.3kB |
| strm/helloworld-http | latest | 29acbf1818de | 2 years ago | 158MB |

- Docker login

```
brijesh@brijesh-VirtualBox:~$ docker login -u brijesh210
```

Password:

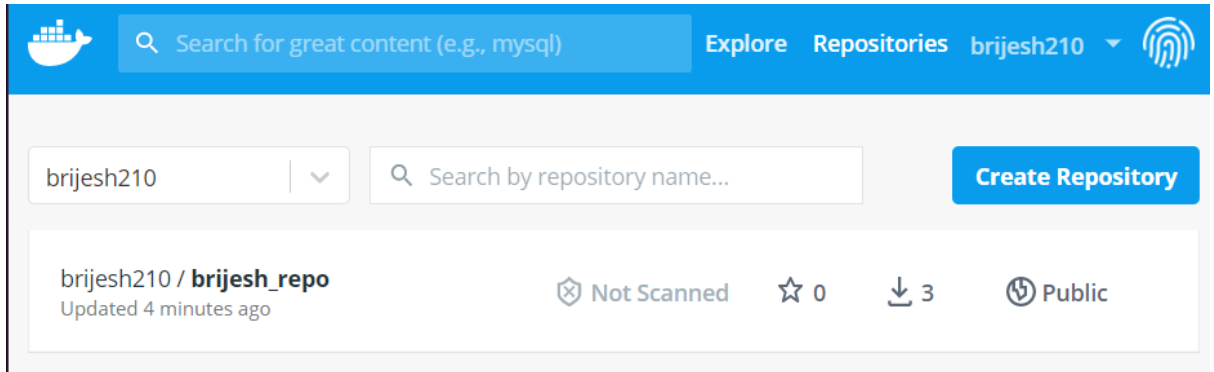
WARNING! Your password will be stored unencrypted in /home/brijesh/.docker/config.json. Configure a credential helper to remove this warning. See <https://docs.docker.com/engine/reference/commandline/login/#credentials-store>

Login Succeeded

```
brijesh@brijesh-VirtualBox:~$ docker info
```

Client:

- Creating Repository:



- Tag an image

```
brijesh@brijesh-VirtualBox:~$ docker tag brijesh/ubuntu-nodejs brijesh_repo/ubuntu-nodejs
```

- Push it to repository

```
brijesh@brijesh-VirtualBox:~$ docker push brijesh210/brijesh_repo
The push refers to repository [docker.io/brijesh210/brijesh_repo]
4bb83a33dace: Pushed
cc9d18e90faa: Pushed
0c2689e3f920: Pushed
47dde53750b4: Pushed
ubuntu-nodejs: digest: sha256:419e111039a91ee39e60eb6723ac273843a6b6ff71c91b8d414a648c718d2923 size: 1155
```

- Result

