

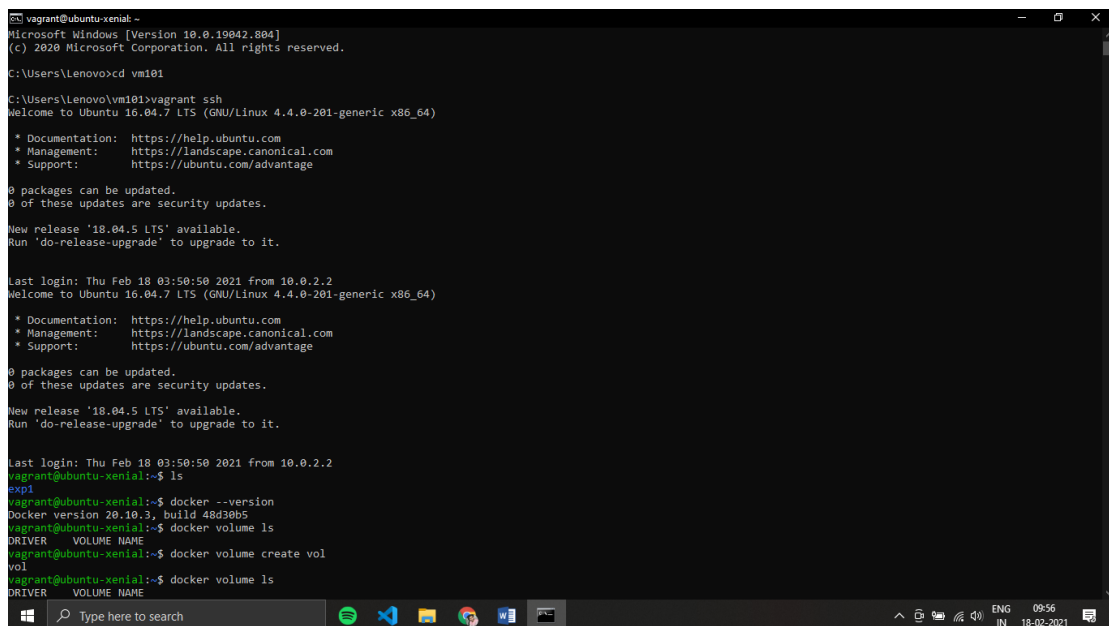
Name – Ankur Sehrawat

Cse-DevOps b1

Experiment -2

Aim- To create Docker volume and attach it with Containers for persistent storage.

1) To create persistent volume in Docker, use command **docker volume create <volume-name>**. After creating volume we can see all the Docker volumes with the help of command **docker volume ls**.

A screenshot of a Windows terminal window with a dark background. The terminal shows a sequence of commands and their outputs. It starts with a Windows command prompt session where the user navigates to a directory and connects via SSH to a VM named 'xeniab'. The VM is running Ubuntu 16.04.7 LTS. After a login banner, the user runs 'ls' and 'docker --version'. Then, they run 'docker volume ls' which shows no volumes. Next, they run 'docker volume create vol' to create a new volume. Finally, they run 'docker volume ls' again, which now shows the newly created volume 'vol'. The terminal window has a standard Windows taskbar at the bottom with various application icons and system tray information.

```
CU vagrant@ubuntu-xeniab: ~  
Microsoft Windows [Version 10.0.19042.804]  
(c) 2020 Microsoft Corporation. All rights reserved.  
  
C:\Users\Lenovo>cd vm101  
  
C:\Users\Lenovo\vm101>vagrant ssh  
Welcome to Ubuntu 16.04.7 LTS (GNU/Linux 4.4.0-201-generic x86_64)  
  
 * Documentation:  https://help.ubuntu.com  
 * Management:    https://landscape.canonical.com  
 * Support:       https://ubuntu.com/advantage  
  
0 packages can be updated.  
0 of these updates are security updates.  
  
New release '18.04.5 LTS' available.  
Run 'do-release-upgrade' to upgrade to it.  
  
Last login: Thu Feb 18 03:50:50 2021 from 10.0.2.2  
Welcome to Ubuntu 16.04.7 LTS (GNU/Linux 4.4.0-201-generic x86_64)  
  
 * Documentation:  https://help.ubuntu.com  
 * Management:    https://landscape.canonical.com  
 * Support:       https://ubuntu.com/advantage  
  
0 packages can be updated.  
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New release '18.04.5 LTS' available.  
Run 'do-release-upgrade' to upgrade to it.  
  
Last login: Thu Feb 18 03:50:50 2021 from 10.0.2.2  
vagrant@ubuntu-xeniab:~$ ls  
exp1  
vagrant@ubuntu-xeniab:~$ docker --version  
Docker version 20.10.3, build 48d30b5  
vagrant@ubuntu-xeniab:~$ docker volume ls  
DRIVER          VOLUME NAME  
vagrant@ubuntu-xeniab:~$ docker volume create vol  
vol  
vagrant@ubuntu-xeniab:~$ docker volume ls  
DRIVER          VOLUME NAME
```

2) Now while launching container use option **-v** to attach volume to any directory inside the container. Inside the container, store any file or data in the directory attached to volume.

```
vagrant@ubuntu-xenial: ~  
Last login: Thu Feb 18 03:50:50 2021 from 10.0.2.2  
Welcome to Ubuntu 16.04.7 LTS (GNU/Linux 4.4.0-201-generic x86_64)  
  
 * Documentation:  https://help.ubuntu.com  
 * Management:    https://landscape.canonical.com  
 * Support:        https://ubuntu.com/advantage  
  
0 packages can be updated.  
0 of these updates are security updates.  
  
New release '18.04.5 LTS' available.  
Run 'do-release-upgrade' to upgrade to it.  
  
Last login: Thu Feb 18 03:50:50 2021 from 10.0.2.2  
vagrant@ubuntu-xenial:~$ ls  
exp1  
vagrant@ubuntu-xenial:~$ docker --version  
Docker version 20.10.3, build 48d30b5  
vagrant@ubuntu-xenial:~$ docker volume ls  
DRIVER    VOLUME NAME  
vagrant@ubuntu-xenial:~$ docker volume create vol  
vol  
vagrant@ubuntu-xenial:~$ docker volume ls  
DRIVER    VOLUME NAME  
local     vol  
vagrant@ubuntu-xenial:~$ docker volume inspect vol  
[  
  {  
    "CreatedAt": "2021-02-18T04:11:43Z",  
    "Driver": "local",  
    "Labels": {},  
    "Mountpoint": "/var/lib/docker/volumes/vol/_data",  
    "Name": "vol",  
    "Options": {},  
    "Scope": "local"  
  }  
]  
vagrant@ubuntu-xenial:~$ docker run alpine  
Unable to find image 'alpine:latest' locally  
latest: Pulling from library/alpine  
ba3557a56b15: Pull complete  
Digest: sha256:a75af8b57e7f34e4dad8d65e2c7ba2e1975c795ce1ee22fa34f8cf46f96a3be
```

3) Now launch another container and attach the same volume with any directory inside the container. Inside the container, we can see same file and data that we stored on another container.

```
    "Scope": "local"  
  }  
]  
vagrant@ubuntu-xenial:~$ docker run alpine  
Unable to find image 'alpine:latest' locally  
latest: Pulling from library/alpine  
ba3557a56b15: Pull complete  
Digest: sha256:a75af8b57e7f34e4dad8d65e2c7ba2e1975c795ce1ee22fa34f8cf46f96a3be  
Status: Downloaded newer image for alpine:latest  
vagrant@ubuntu-xenial:~$ docker ps -a  
CONTAINER ID   IMAGE     COMMAND   CREATED   STATUS    PORTS   NAMES  
8b80412b0f27   alpine   "/bin/sh"  22 seconds ago   Exited (0) 21 seconds ago           intelligent_nash  
vagrant@ubuntu-xenial:~$ docker run -it alpine  
/ # cd /mnt  
/mnt # ls  
/mnt # exit  
vagrant@ubuntu-xenial:~$ docker run -it -v vol:/mnt alpine  
/ # ls  
bin    dev    etc    home  lib    media mnt    opt    proc  root  run   /sbin  /srv   sys    tmp    usr    var  
/ # cd /mnt  
/mnt # ls  
/mnt # touch a.txt  
/mnt # touch b.txt  
/mnt # ls  
a.txt  b.txt  
/mnt # exit  
vagrant@ubuntu-xenial:~$ docker run it alpine  
Unable to find image 'it:latest' locally  
docker: Error response from daemon: pull access denied for it, repository does not exist or may require 'docker login': denied: requested access to the resource is denied.  
See 'docker run --help'.  
vagrant@ubuntu-xenial:~$ docker run -it alpine  
/ # cd /mnt  
/mnt # ls  
/mnt # exit  
vagrant@ubuntu-xenial:~$ docker volume ls  
DRIVER    VOLUME NAME  
local     vol  
vagrant@ubuntu-xenial:~$ docker volume inspect vol  
[  
  {  
    "CreatedAt": "2021-02-18T04:21:17Z",  
    "Driver": "local",  
    "Labels": {},  
    "Mountpoint": "/var/lib/docker/volumes/vol/_data",  
    "Name": "vol",  
    "Options": {},  
    "Scope": "local"  
  }  
]
```

```
vagrant@ubuntu-xenial:~$ docker run --help
See 'docker run --help'.
vagrant@ubuntu-xenial:~$ docker run -it alpine
/ # cd /mnt
/ # ls
/ # exit
vagrant@ubuntu-xenial:~$ docker volume ls
DRIVER      VOLUME NAME
local       vol
vagrant@ubuntu-xenial:~$ docker volume inspect vol
[
  {
    "CreatedAt": "2021-02-18T04:21:17Z",
    "Driver": "local",
    "Labels": {},
    "Mountpoint": "/var/lib/docker/volumes/vol/_data",
    "Name": "vol",
    "Options": {},
    "Scope": "local"
  }
]
vagrant@ubuntu-xenial:~$ docker run -it -v vol:/mnt --name c1 alpine
/ # cd /mnt
/ # ls
a.txt b.txt
/ # ls
a.txt b.txt
/ # exit
vagrant@ubuntu-xenial:~$
```