UPES

UNIVERSITY WITH A PURPOSE

EXPERIMENT-3

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SAP ID –	*500069414*
SUBJECT-	*APLLICATION CONTAINERIZATION*
COURSE-	*B.Tech(CSE-DEVOPS)*

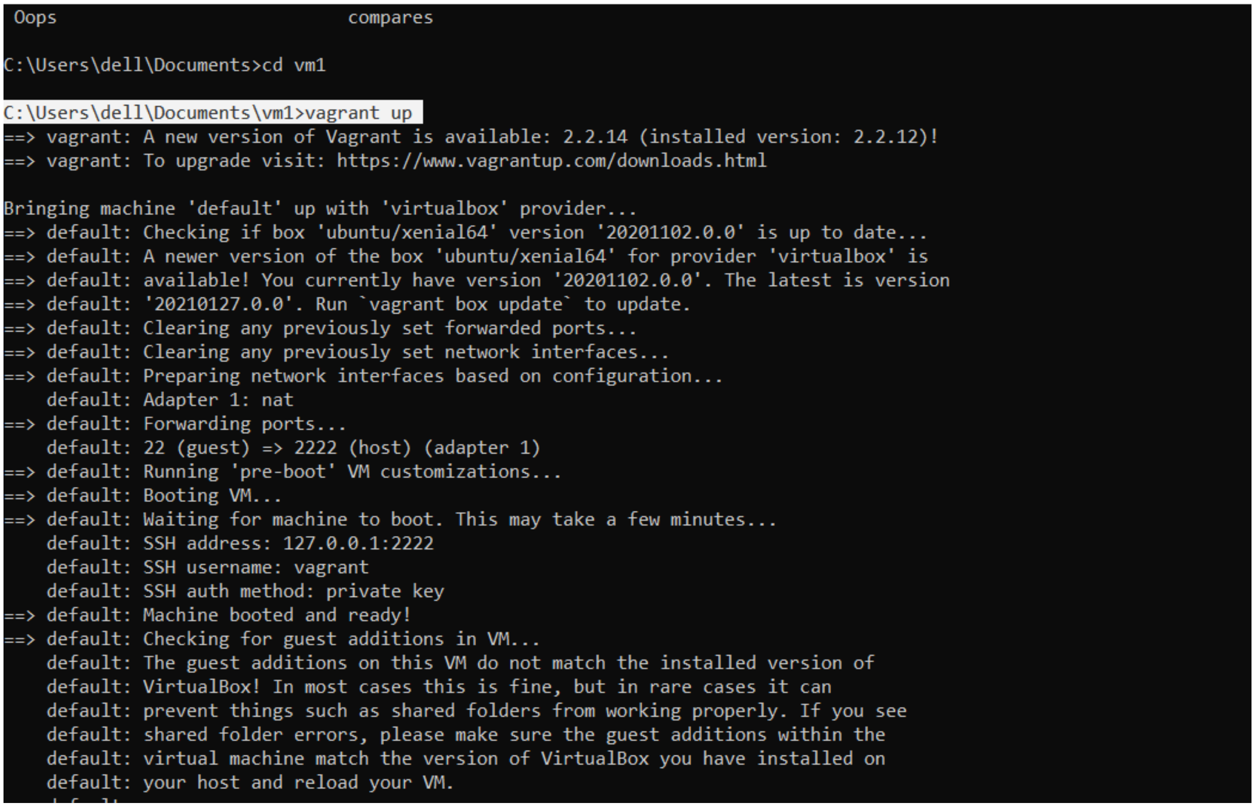
SUBMITTED TO:-

MR. HITESH KUMAR SHARMA

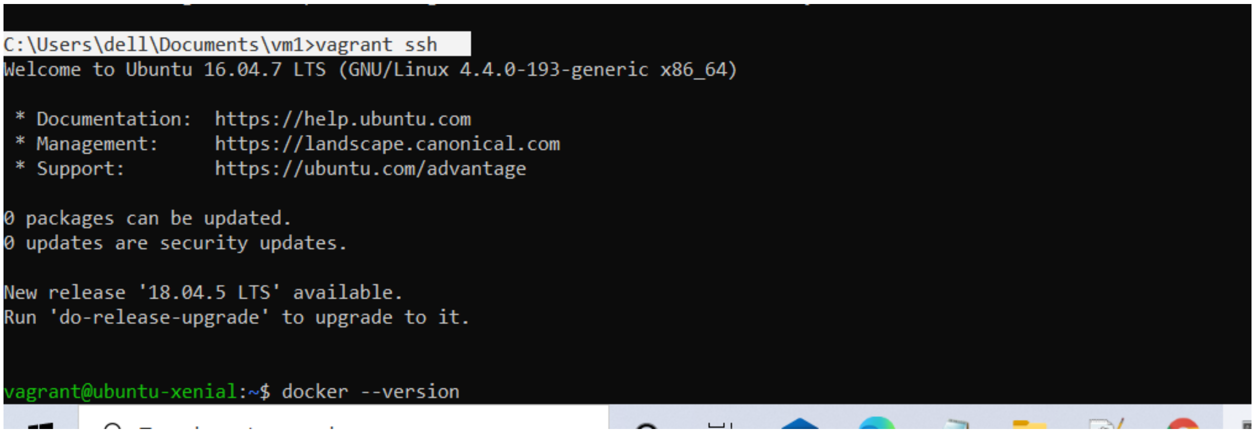
AIM- CREATE A VOLUME

Step-1:- To start the vagrant

1. vagrant up
2. vagrant ssh



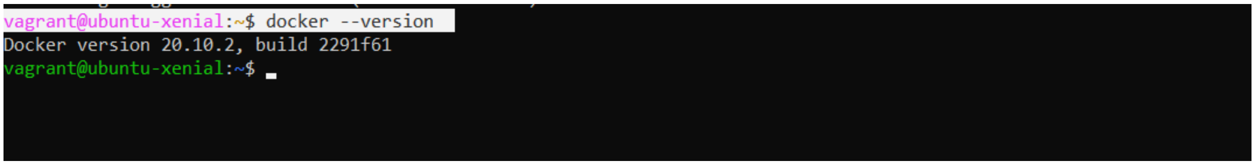
```
 Oops                          compares

C:\Users\dell\Documents>cd vm1

C:\Users\dell\Documents\vm1>vagrant up
==> vagrant: A new version of Vagrant is available: 2.2.14 (installed version: 2.2.12)!
==> vagrant: To upgrade visit: https://www.vagrantup.com/downloads.html

Bringing machine 'default' up with 'virtualbox' provider...
==> default: Checking if box 'ubuntu/xenial64' version '20201102.0.0' is up to date...
==> default: A newer version of the box 'ubuntu/xenial64' for provider 'virtualbox' is
==> default: available! You currently have version '20201102.0.0'. The latest is version
==> default: '20210127.0.0'. Run `vagrant box update` to update.
==> default: Clearing any previously set forwarded ports...
==> default: Clearing any previously set network interfaces...
==> default: Preparing network interfaces based on configuration...
    default: Adapter 1: nat
==> default: Forwarding ports...
    default: 22 (guest) => 2222 (host) (adapter 1)
==> default: Running 'pre-boot' VM customizations...
==> default: Booting VM...
==> default: Waiting for machine to boot. This may take a few minutes...
    default: SSH address: 127.0.0.1:2222
    default: SSH username: vagrant
    default: SSH auth method: private key
==> default: Machine booted and ready!
==> default: Checking for guest additions in VM...
    default: The guest additions on this VM do not match the installed version of
    default: VirtualBox! In most cases this is fine, but in rare cases it can
    default: prevent things such as shared folders from working properly. If you see
    default: shared folder errors, please make sure the guest additions within the
    default: virtual machine match the version of VirtualBox you have installed on
    default: your host and reload your VM.
```



```
C:\Users\dell\Documents\vm1>vagrant ssh
Welcome to Ubuntu 16.04.7 LTS (GNU/Linux 4.4.0-193-generic x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:     https://landscape.canonical.com
 * Support:        https://ubuntu.com/advantage

0 packages can be updated.
0 updates are security updates.

New release '18.04.5 LTS' available.
Run 'do-release-upgrade' to upgrade to it.


vagrant@ubuntu-xenial:~$ docker --version
```

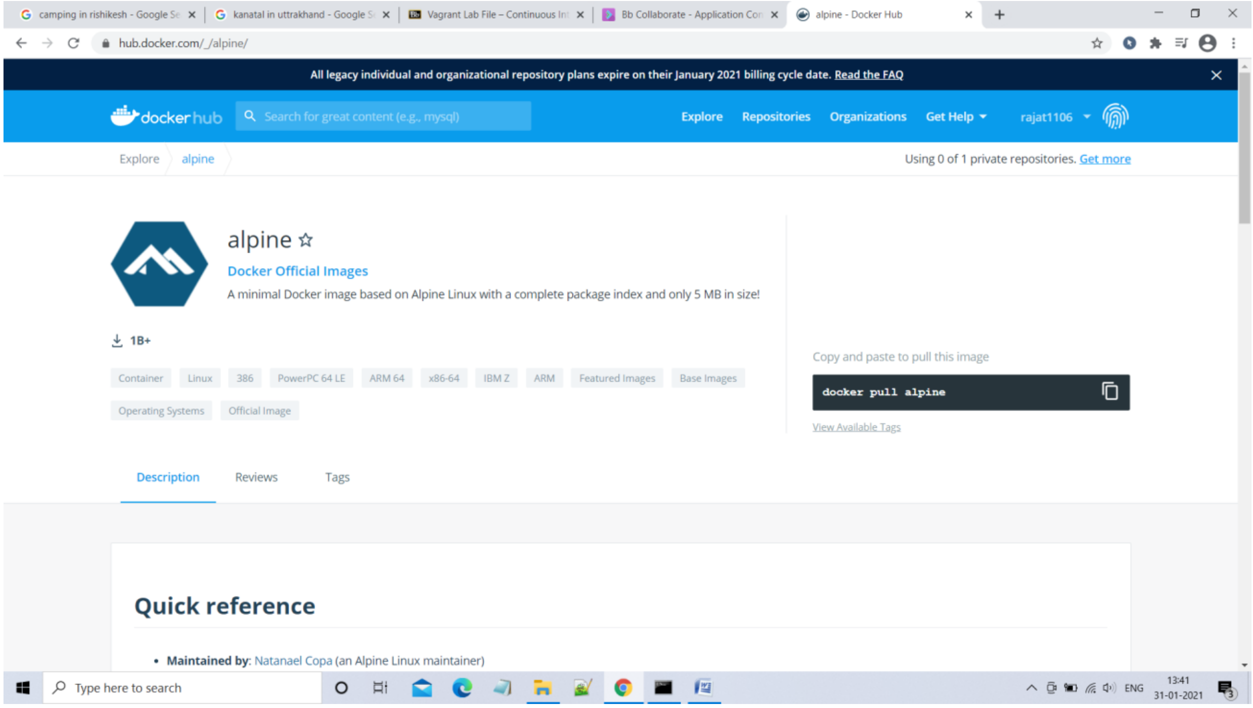
Step-2:- check docker version

docker --version



```
vagrant@ubuntu-xenial:~$ docker --version
Docker version 20.10.2, build 2291f61
vagrant@ubuntu-xenial:~$ _
```

Search image of **alpine container** image on dockerhub



All legacy individual and organizational repository plans expire on their January 2021 billing cycle date. Read the FAQ

Using 0 of 1 private repositories. Get more

alpine ☆

Docker Official Images

A minimal Docker image based on Alpine Linux with a complete package index and only 5 MB in size!

1B+

Copy and paste to pull this image

```
docker pull alpine
```

View Available Tags

Quick reference

- **Maintained by:** Natanael Copa (an Alpine Linux maintainer)

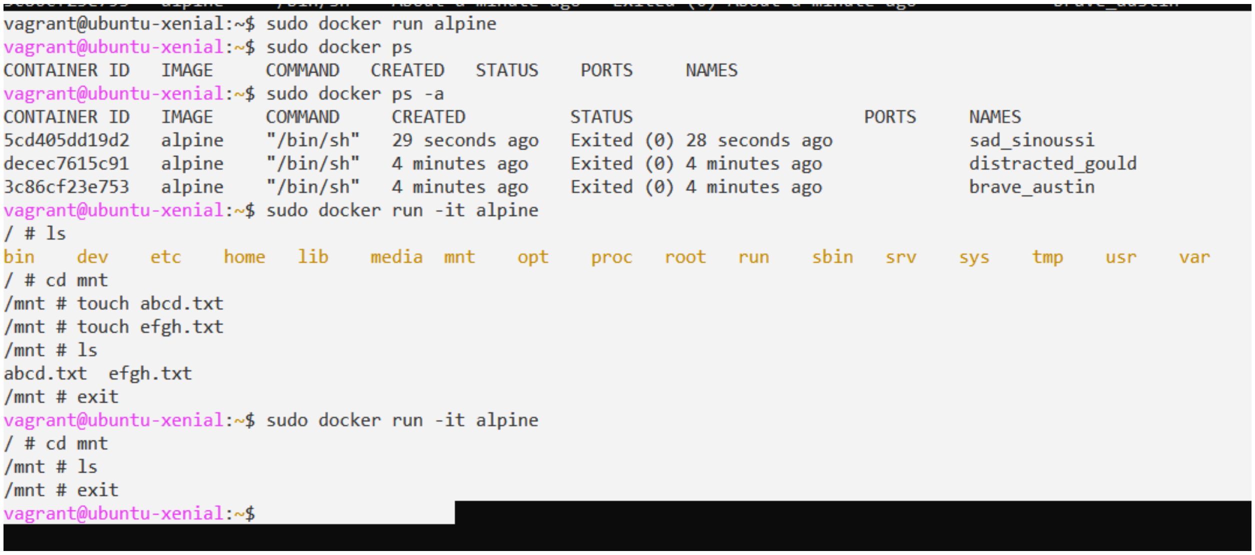
Step:-4

Run alpine container with out volume and create file with the help of touch command and after that exit that container. We will lost our all file.

COMMAND- docker run –it alpine

touch abcd.txt

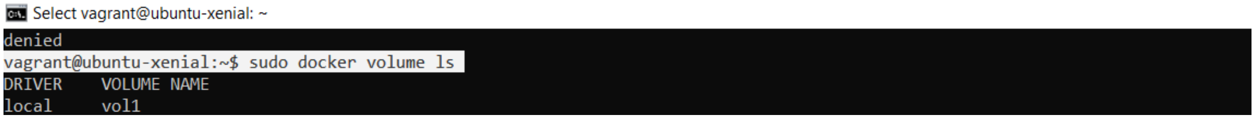
touch efgh.txt



```
vagrant@ubuntu-xenial:~$ sudo docker run alpine
vagrant@ubuntu-xenial:~$ sudo docker ps
CONTAINER ID   IMAGE     COMMAND   CREATED   STATUS    PORTS     NAMES
vagrant@ubuntu-xenial:~$ sudo docker ps -a
CONTAINER ID   IMAGE     COMMAND     CREATED          STATUS                     PORTS     NAMES
5cd405dd19d2   alpine    "/bin/sh"   29 seconds ago   Exited (0) 28 seconds ago            sad_sinoussi
decec7615c91   alpine    "/bin/sh"   4 minutes ago    Exited (0) 4 minutes ago             distracted_gould
3c86cf23e753   alpine    "/bin/sh"   4 minutes ago    Exited (0) 4 minutes ago             brave_austin
vagrant@ubuntu-xenial:~$ sudo docker run -it alpine
/ # ls
bin    dev    etc    home   lib    media  mnt    opt    proc   root   run    sbin   srv    sys    tmp    usr    var
/ # cd mnt
/mnt # touch abcd.txt
/mnt # touch efgh.txt
/mnt # ls
abcd.txt  efgh.txt
/mnt # exit
vagrant@ubuntu-xenial:~$ sudo docker run -it alpine
/ # cd mnt
/mnt # ls
/mnt # exit
vagrant@ubuntu-xenial:~$
```

--To show the list all the volume

COMMAND- docker volume ls

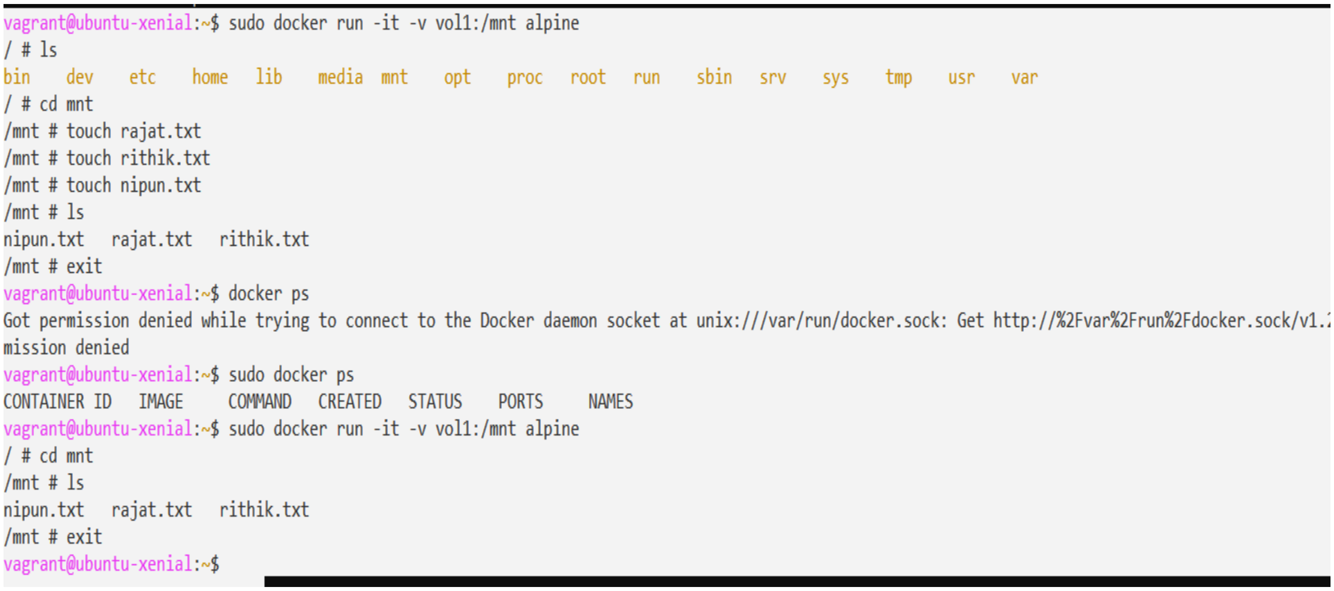


```
denied
vagrant@ubuntu-xenial:~$ sudo docker volume ls
DRIVER    VOLUME NAME
local     vol1
```

Step:-5

Run alpine container with the help of volume and create the file with the help of touch command and when we exit the container and run again other container with same volume the files do not delete.

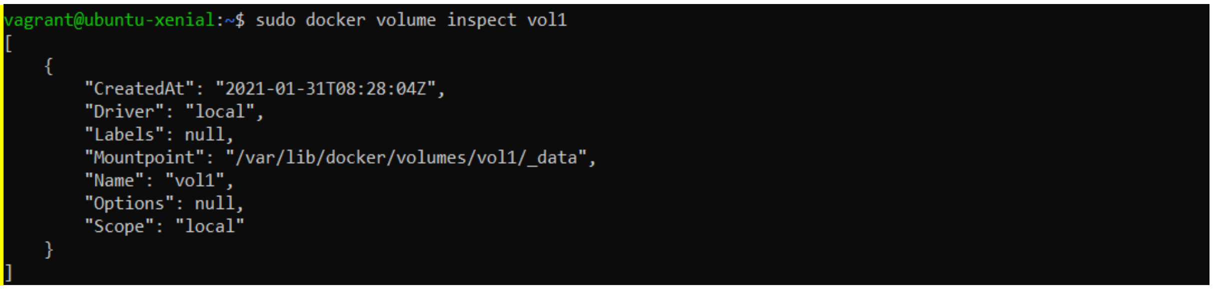
COMMAND- docker run –it –v "volume_name":/"folder_name" alpine



```
vagrant@ubuntu-xenial:~$ sudo docker run -it -v vol1:/mnt alpine
/ # ls
bin    dev    etc    home   lib    media  mnt    opt    proc   root   run    sbin   srv    sys    tmp    usr    var
/ # cd mnt
/mnt # touch rajat.txt
/mnt # touch rithik.txt
/mnt # touch nipun.txt
/mnt # ls
nipun.txt   rajat.txt   rithik.txt
/mnt # exit
vagrant@ubuntu-xenial:~$ docker ps
Got permission denied while trying to connect to the Docker daemon socket at unix:///var/run/docker.sock: Get http://%2Fvar%2Frun%2Fdocker.sock/v1.
mission denied
vagrant@ubuntu-xenial:~$ sudo docker ps
CONTAINER ID   IMAGE     COMMAND   CREATED   STATUS    PORTS     NAMES
vagrant@ubuntu-xenial:~$ sudo docker run -it -v vol1:/mnt alpine
/ # cd mnt
/mnt # ls
nipun.txt   rajat.txt   rithik.txt
/mnt # exit
vagrant@ubuntu-xenial:~$
```

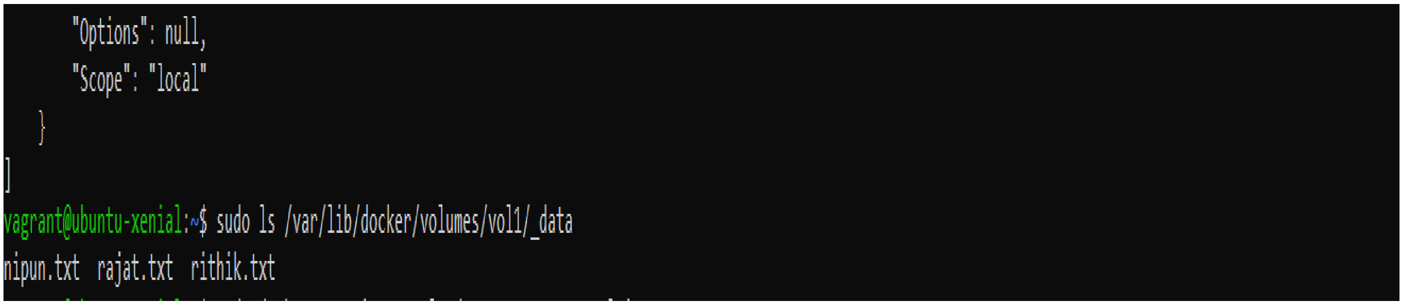
Step-:6 -- To check the path of volume

COMMAND- **docker volume inspect "volume name"**



```
vagrant@ubuntu-xenial:~$ sudo docker volume inspect vol1
[
    {
        "CreatedAt": "2021-01-31T08:28:04Z",
        "Driver": "local",
        "Labels": null,
        "Mountpoint": "/var/lib/docker/volumes/vol1/_data",
        "Name": "vol1",
        "Options": null,
        "Scope": "local"
    }
]
```

To show the file that particular location

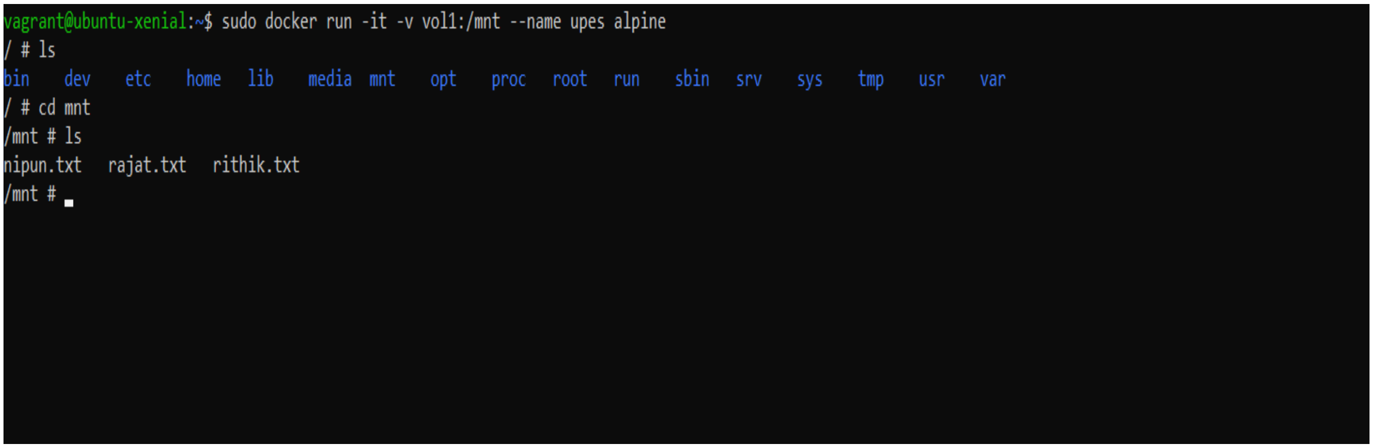


```
      "Options": null,
      "Scope": "local"
   }
]
vagrant@ubuntu-xenial:~$ sudo ls /var/lib/docker/volumes/vol1/_data
nipun.txt  rajat.txt  rithik.txt
```

Step7:-

When we create and run container and we will give our own name that particular container that file exist in this container which we had create another container.

COMMAND- docker run –it –v “volume_name”:/”folder_name” --name “container_name” alpine

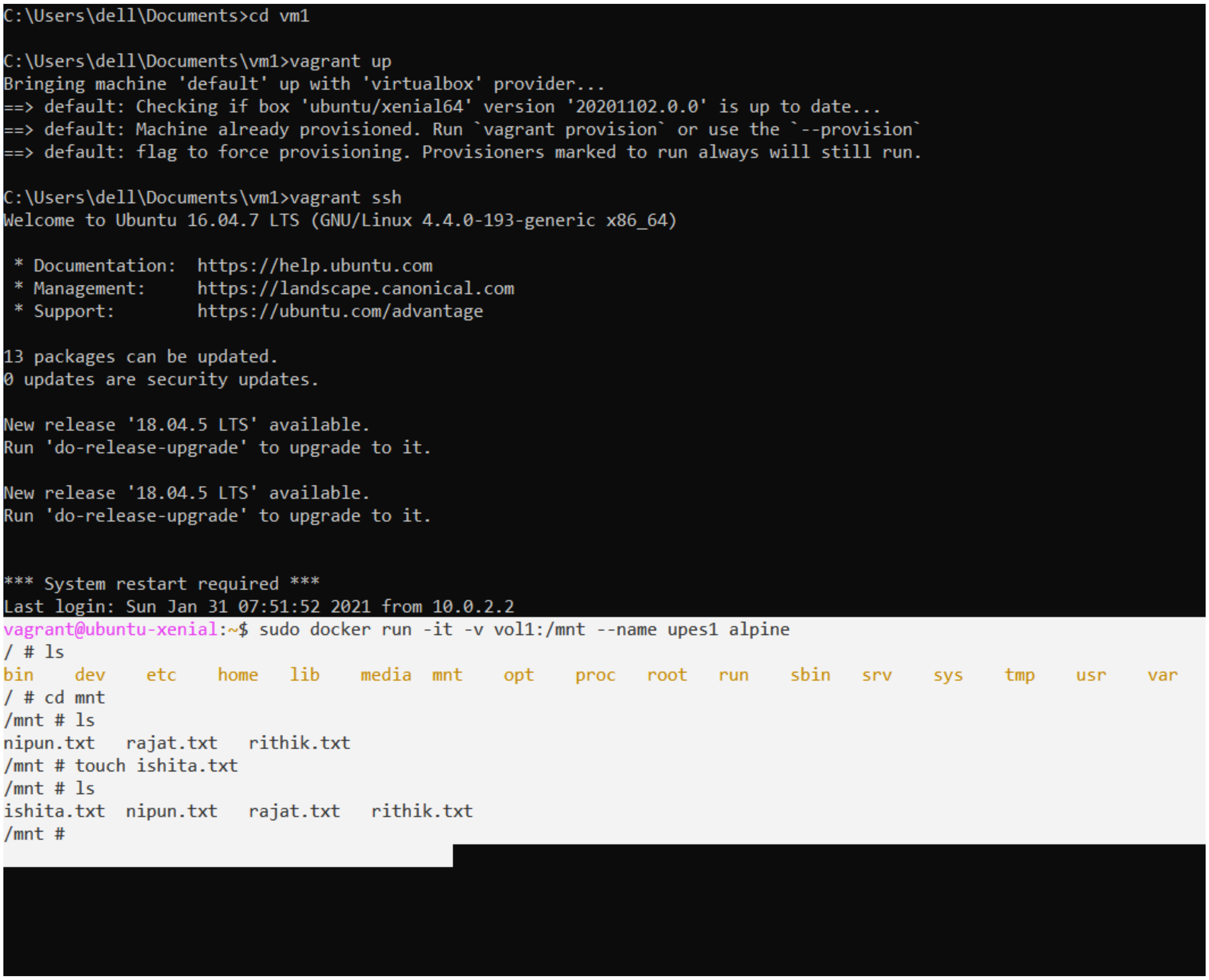


```
vagrant@ubuntu-xenial:~$ sudo docker run -it -v vol1:/mnt --name upes alpine
/ # ls
bin    dev    etc    home   lib    media  mnt    opt    proc   root   run    sbin   srv    sys    tmp    usr    var
/ # cd mnt
/mnt # ls
nipun.txt   rajat.txt   rithik.txt
/mnt #
```

now we will open a new CMD and run again vagrant and run a new container with the help of previous command which container name is “upes1” and we will see that “Ishita.txt” file is available on that container.

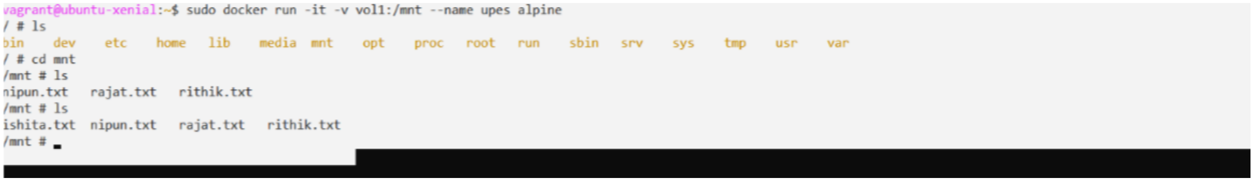
We create another file in container

Ishita.txt



```
C:\Users\dell\Documents>cd vm1

C:\Users\dell\Documents\vm1>vagrant up
Bringing machine 'default' up with 'virtualbox' provider...
==> default: Checking if box 'ubuntu/xenial64' version '20201102.0.0' is up to date...
==> default: Machine already provisioned. Run `vagrant provision` or use the `--provision`
==> default: flag to force provisioning. Provisioners marked to run always will still run.

C:\Users\dell\Documents\vm1>vagrant ssh
Welcome to Ubuntu 16.04.7 LTS (GNU/Linux 4.4.0-193-generic x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:     https://landscape.canonical.com
 * Support:        https://ubuntu.com/advantage

13 packages can be updated.
0 updates are security updates.

New release '18.04.5 LTS' available.
Run 'do-release-upgrade' to upgrade to it.

New release '18.04.5 LTS' available.
Run 'do-release-upgrade' to upgrade to it.


*** System restart required ***
Last login: Sun Jan 31 07:51:52 2021 from 10.0.2.2
vagrant@ubuntu-xenial:~$ sudo docker run -it -v vol1:/mnt --name upes1 alpine
/ # ls
bin    dev    etc    home   lib    media  mnt    opt    proc   root   run    sbin   srv    sys    tmp    usr    var
/ # cd mnt
/mnt # ls
nipun.txt   rajat.txt   rithik.txt
/mnt # touch ishita.txt
/mnt # ls
ishita.txt  nipun.txt   rajat.txt   rithik.txt
/mnt #
```

Now we can see that “ishita.txt” file is available on “upes” container

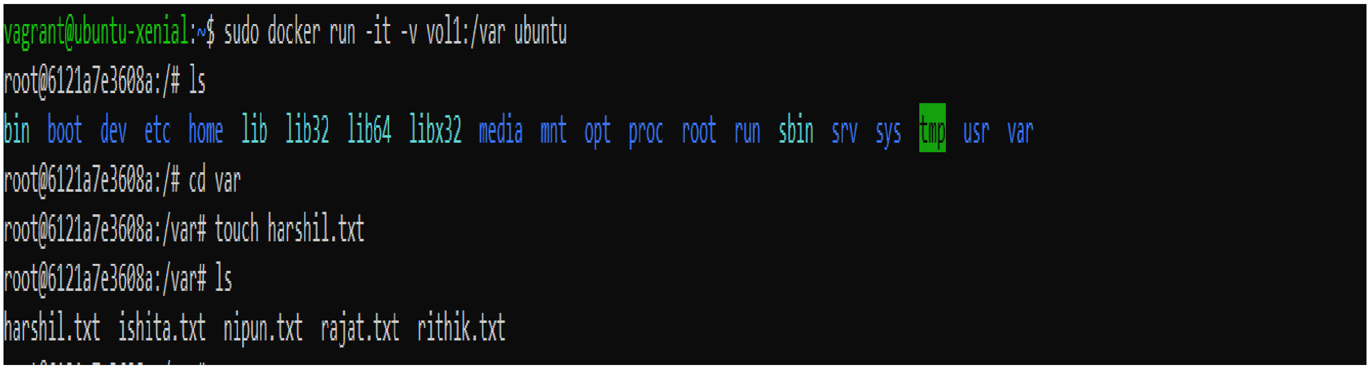


```
vagrant@ubuntu-xenial:~$ sudo docker run -it -v vol1:/mnt --name upes alpine
/ # ls
bin     dev     etc     home    lib     media   mnt     opt     proc    root    run     sbin    srv     sys     tmp     usr     var
/ # cd mnt
/mnt # ls
nipun.txt   rajat.txt   rithik.txt
/mnt # ls
ishita.txt  nipun.txt   rajat.txt   rithik.txt
/mnt #
```

Step-:8

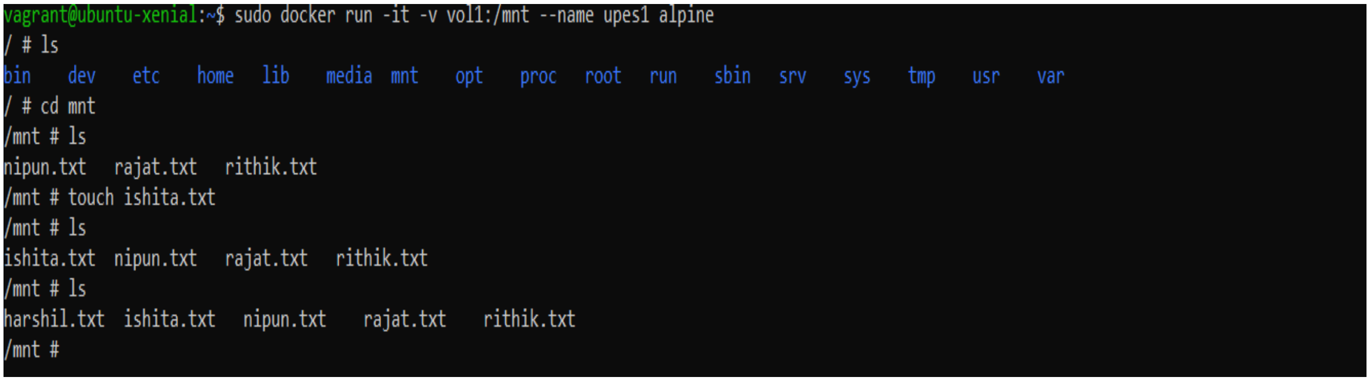
Now we will start a new “ubuntu”container on first CMD and

We create a file “harshil.txt” and that file will be visible on “upes1” container.



```
vagrant@ubuntu-xenial:~$ sudo docker run -it -v vol1:/var ubuntu
root@6121a7e3608a:/# ls
bin  boot  dev  etc  home  lib  lib32  lib64  libx32  media  mnt  opt  proc  root  run  sbin  srv  sys  tmp  usr  var
root@6121a7e3608a:/# cd var
root@6121a7e3608a:/var# touch harshil.txt
root@6121a7e3608a:/var# ls
harshil.txt  ishita.txt  nipun.txt  rajat.txt  rithik.txt
```

And this file is visible here:-



```
vagrant@ubuntu-xenial:~$ sudo docker run -it -v vol1:/mnt --name upes1 alpine
/ # ls
bin     dev     etc     home    lib     media   mnt     opt     proc    root    run     sbin    srv     sys     tmp     usr     var
/ # cd mnt
/mnt # ls
nipun.txt   rajat.txt   rithik.txt
/mnt # touch ishita.txt
/mnt # ls
ishita.txt  nipun.txt   rajat.txt   rithik.txt
/mnt # ls
harshil.txt  ishita.txt  nipun.txt   rajat.txt   rithik.txt
/mnt #
```

Step-9

For delete the volume:-

COMMAND- docker volume rm “volume_name”

Before run that command we will stop our all container