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Starting VM

<mark>$ vagrant up</mark>

```
F:\first-vagrant>vagrant up
Bringing machine 'default' up with 'virtualbox' provider...
==> default: Checking if box 'ubuntu/xenial64' version '20201104.0.0' is up to date...
==> default: Clearing any previously set forwarded ports...
==> default: Fixed port collision for 22 => 2222. Now on port 2200.
==> default: Clearing any previously set network interfaces...
==> default: Preparing network interfaces based on configuration...
    default: Adapter 1: nat
==> default: Forwarding ports...
    default: 22 (guest) => 2200 (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: 127.0.0.1:2200
    default: SSH username: vagrant
    default: SSH auth method: private key
    default: Warning: Connection aborted. Retrying...
    default: Warning: Remote connection disconnect. Retrying...
==> 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
```

Listing all the volumes in docker and inspecting a volume

<mark>$ docker volume ls</mark>

```
vagrant@ubuntu-xenial:~$ ls
vagrant@ubuntu-xenial:~$ docker --version
Docker version 19.03.13, build 4484c46d9d
vagrant@ubuntu-xenial:~$ docker volume ls
DRIVER              VOLUME NAME
local               84b27a886a4606b3ae662f1128af362e3ba98e6f7c69ecd95d2616511c7e3275
local               7159a0eaca4ace48a606f9b4caa09fb32a4ddb4b5a2621d1696b24275387414c
local               614531430a43274c4e256347bdadf770d2a858ac7faca8094a84613dc7f5c7fe
local               d8774dcbbc276d80b3ac096f9220b6c79c03336f9c040ac77421875dd8d42f04
```

```
vagrant@ubuntu-xenial:~$ docker volume inspect 84b27a886a4606b3ae662f1128af362e3ba98e6f7c69ecd95d2616511c7e3275
[
    {
        "CreatedAt": "2020-11-20T06:38:18Z",
        "Driver": "local",
        "Labels": null,
        "Mountpoint": "/var/lib/docker/volumes/84b27a886a4606b3ae662f1128af362e3ba98e6f7c69ecd95d2616511c7e3275/_data"
        "Name": "84b27a886a4606b3ae662f1128af362e3ba98e6f7c69ecd95d2616511c7e3275",
        "Options": null,
        "Scope": "local"
    }
]
vagrant@ubuntu-xenial:~$ docker run alpine
Unable to find image 'alpine:latest' locally
latest: Pulling from library/alpine
4c0d98bf9879: Pull complete
Digest: sha256:08d6ca16c60fe7490c03d10dc339d9fd8ea67c6466dea8d558526b1330a85930
```

Running an Alpine Image

<mark>$ docker run alpine</mark>

```
vagrant@ubuntu-xenial:~$ docker run alpine
Unable to find image 'alpine:latest' locally
latest: Pulling from library/alpine
4c0d98bf9879: Pull complete
Digest: sha256:08d6ca16c60fe7490c03d10dc339d9fd8ea67c6466dea8d558526b1330a85930
Status: Downloaded newer image for alpine:latest
vagrant@ubuntu-xenial:~$ docker ps
CONTAINER ID    IMAGE         COMMAND              CREATED         STATUS                PORTS        NAMES
vagrant@ubuntu-xenial:~$ docker ps -a
CONTAINER ID    IMAGE         COMMAND              CREATED         STATUS                PORTS        NAMES
a7ca31cdaebc    alpine        "/bin/sh"            17 seconds ago  Exited (0) 16 seconds ago          pedantic_tereshkova
fc5214159b1b    redis         "docker-entrypoint.s…"  2 months ago    Exited (0) 2 months ago            test
dd09f62b7568    redis         "docker-entrypoint.s…"  2 months ago    Exited (0) 2 months ago            sharp_keller
ace4825d6132    redis         "docker-entrypoint.s…"  2 months ago    Exited (255) 20 minutes ago  6379/tcp  gifted_murdock
989295354bd4    redis         "docker-entrypoint.s…"  2 months ago    Exited (0) 2 months ago            infallible_swartz
2e6d810bd42a    ubuntu        "/bin/bash"          2 months ago    Exited (0) 2 months ago            trusting_blackwell
6fd9d26742ee    ubuntu        "/bin/bash"          2 months ago    Exited (0) 2 months ago            trusting_chandrasekhar
```

```
vagrant@ubuntu-xenial:~$ docker ps
CONTAINER ID    IMAGE         COMMAND              CREATED          STATUS                PORTS        NAMES
vagrant@ubuntu-xenial:~$ docker ps -a
CONTAINER ID    IMAGE         COMMAND              CREATED          STATUS                PORTS        NAMES
91a9d32caea6    alpine        "/bin/sh"            About a minute ago  Exited (0) 14 seconds ago        compassionate_colden
a7ca31cdaebc    alpine        "/bin/sh"            8 minutes ago    Exited (0) 8 minutes ago           pedantic_tereshkova
fc5214159b1b    redis         "docker-entrypoint.s…"  2 months ago     Exited (0) 2 months ago            test
dd09f62b7568    redis         "docker-entrypoint.s…"  2 months ago     Exited (0) 2 months ago            sharp_keller
ace4825d6132    redis         "docker-entrypoint.s…"  2 months ago     Exited (255) 29 minutes ago  6379/tcp  gifted_murdock
989295354bd4    redis         "docker-entrypoint.s…"  2 months ago     Exited (0) 2 months ago            infallible_swartz
2e6d810bd42a    ubuntu        "/bin/bash"          2 months ago     Exited (0) 2 months ago            trusting_blackwell
6fd9d26742ee    ubuntu        "/bin/bash"          2 months ago     Exited (0) 2 months ago            trusting_chandrasekhar
vagrant@ubuntu-xenial:~$ docker run -it alpine
/ # cd mnt
/mnt # ls
/mnt # exit
vagrant@ubuntu-xenial:~$ docker run -it -v myvol:/mnt alpine
/ # ls
```

Creating some files in that alpine cont.

$ docker run –it –v myvol:/mnt alpine

```
vagrant@ubuntu-xenial:~$ docker run -it -v myvol:/mnt alpine
/ # ls
bin    dev    etc    home    lib    media  mnt    opt    proc   root   run    sbin   srv    sys    tmp    usr    var
/ # 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 ps
CONTAINER ID       IMAGE          COMMAND            CREATED          STATUS               PORTS          NAMES
vagrant@ubuntu-xenial:~$ docker run -it -v myvol:/mnt alpine
/ # ls
bin    dev    etc    home    lib    media  mnt    opt    proc   root   run    sbin   srv    sys    tmp    usr    var
/ # cd mnt
/mnt # ls
a.txt  b.txt
/mnt # exit
vagrant@ubuntu-xenial:~$ docker run -it alpine
/ # cd mnt
/mnt # ls
/mnt # exit
vagrant@ubuntu-xenial:~$ docker volume ls
DRIVER             VOLUME NAME
local              84b27a886a4606b3ae662f1128af362e3ba98e6f7c69ecd95d2616511c7e3275
local              7159a0eaca4ace48a606f9b4caa09fb32a4ddb4b5a2621d1696b24275387414c
local              614531430a43274c4e256347bdadf770d2a858ac7faca8094a84613dc7f5c7fe
local              d8774dcbbc276d80b3ac096f9220b6c79c03336f9c040ac77421875dd8d42f04
local              myvol
vagrant@ubuntu-xenial:~$ docker volume inspect myvol
[
    {
        "CreatedAt": "2021-01-29T06:20:39Z",
        "Driver": "local",
        "Labels": null,
        "Mountpoint": "/var/lib/docker/volumes/myvol/_data",
        "Name": "myvol",
        "Options": null,
        "Scope": "local"
    }
]
```

Creating Container with Volume

$ docker run –it –v myvol:/mnt –name c1 alpine

```
vagrant@ubuntu-xenial:~$ docker run -it -v myvol:/mnt --name c1 alpine
/ # cd mnt
/mnt # ls
a.txt  b.txt
/mnt # ls
a.txt  b.txt  c.txt
/mnt # ls
a.txt  b.txt  c.txt  d.txt
/mnt # exit
```

In another instance of terminal, starting a VM and running docker in that

```
vagrant@ubuntu-xenial:~$ docker ps
CONTAINER ID        IMAGE             COMMAND             CREATED             STATUS              PORTS               NAMES
8d261bbd152e        alpine            "/bin/sh"           3 minutes ago       Up 3 minutes                            c1
vagrant@ubuntu-xenial:~$ docker run -it -v myvol:/mnt --name c2 alpine
/ # ls
bin     dev     etc     home    lib     media   mnt     opt     proc    root    run     sbin    srv     sys     tmp     usr     var
/ # cd mnt
/mnt # ls
a.txt  b.txt
/mnt # touch c.txt
/mnt # ls
a.txt  b.txt  c.txt
```

All the files show synced up

```
vagrant@ubuntu-xenial:~$ docker run -it ubuntu
root@e90ae2c215ee:/# ls
bin  boot  dev  etc  home  lib  lib32  lib64  libx32  media  mnt  opt  proc  root  run  sbin  srv  sys  tmp  usr  var
root@e90ae2c215ee:/# docker run -it -v :myvol:/var ubuntu
bash: docker: command not found
root@e90ae2c215ee:/# exit
exit
vagrant@ubuntu-xenial:~$ docker run -it -v :myvol:/var ubuntu
root@282d265e9f4f:/# ls
:myvol:  bin  boot  dev  etc  home  lib  lib32  lib64  libx32  media  mnt  opt  proc  root  run  sbin  srv  sys  tmp  usr  var
root@282d265e9f4f:/# cd var
root@282d265e9f4f:/var# ls
backups  cache  lib  local  lock  log  mail  opt  run  spool  tmp
root@282d265e9f4f:/var# touch d.txt
root@282d265e9f4f:/var# ls
backups  cache  d.txt  lib  local  lock  log  mail  opt  run  spool  tmp
root@282d265e9f4f:/var# exit
exit
vagrant@ubuntu-xenial:~$ docker run -it -v :myvol:/var ubuntu
root@6612b1af8603:/# cd var
root@6612b1af8603:/var# touch d.txt
root@6612b1af8603:/var# ls
backups  cache  d.txt  lib  local  lock  log  mail  opt  run  spool  tmp
root@6612b1af8603:/var# exit
exit
vagrant@ubuntu-xenial:~$ docker run -it -v myvol:/var ubuntu
root@1a3479d7b43b:/# cd var
root@1a3479d7b43b:/var# touch d.txt
root@1a3479d7b43b:/var# ls
a.txt  b.txt  c.txt  d.txt
root@1a3479d7b43b:/var# exit
exit
vagrant@ubuntu-xenial:~$
```