Volume backup and restore

1: Run a container with a Volume.

docker run -d --name <container-name> -v vol:<target-path><image-name>

```
root@ip-172-31-83-79:/home/ubuntu# docker run -d --name Demo-2 -v vol:/app nginx:latest
47e508cabce96303eb6d373fbc1444a7a433ce18c00b785dd19f74db3bd2e729
root@ip-172-31-83-79:/home/ubuntu# docker ps
CONTAINER ID   IMAGE          COMMAND                  CREATED          STATUS          PORTS     NAMES
47e508cabce9   nginx:latest   "/docker-entrypoint.…"   10 seconds ago   Up 10 seconds   80/tcp    Demo-2
59a0662299f7   nginx:latest   "/docker-entrypoint.…"   50 minutes ago   Up 50 minutes   80/tcp    demo-container
root@ip-172-31-83-79:/home/ubuntu#
```

Create a text file in the Volume inside the container to verify later.

docker exec –it <container_id> bash

cd app

cat > hello.txt

Hello world

ctrl+c

ls

exit

exit

```
root@ip-172-31-83-79:/home/ubuntu# docker exec -it 47e508cabce9 bash
root@47e508cabce9:/# ls
app  bin  boot  dev  docker-entrypoint.d  docker-entrypoint.sh  etc  home  lib  lib64  media  mnt  opt  proc  root  run  sbin  srv  sys  tmp  usr  var
root@47e508cabce9:/# cd app
root@47e508cabce9:/app# ls
root@47e508cabce9:/app# cat > hello.txt
Hello world^C
root@47e508cabce9:/app# ls
hello.txt
root@47e508cabce9:/app# exit
exit
root@ip-172-31-83-79:/home/ubuntu# exit
exit
ubuntu@ip-172-31-83-79:~$
```

2: Create a temporary container which will import the Volume from our previous Container and create a tar file of the backup in the ‘backup’ directory.

docker run --rm --volumes-from -v $(pwd):/backup <image-name> tar cvf /backup/backup.tar <volume-location>

```
ubuntu@ip-172-31-83-79:~$ sudo docker run --rm --volumes-from Demo-2 -v $(pwd):/backup nginx:latest tar cvf /backup/backup.tar /app
/app/
/app/hello.txt
tar: Removing leading `/' from member names
ubuntu@ip-172-31-83-79:~$ ls
backup.tar  calico.yaml  external-storage  install.sh
ubuntu@ip-172-31-83-79:~$
```

3: Now to restore the backup, run a new container.

docker run -d --name <container-name> -v <target-path><image-name>

```
ubuntu@ip-172-31-83-79:~$ sudo docker run -d --name demo-3 -v /app nginx:latest
f35fe67ef34a02420d7f2a26a6c682d1475b5487535668916e116883cf0dcb40
ubuntu@ip-172-31-83-79:~$ docker ps
permission denied while trying to connect to the Docker daemon socket at unix:///var/run/docker.sock: Get "http://%2Fvar%2Frun%2Fdocker.sock/v1.24/containers/json": d
ial unix /var/run/docker.sock: connect: permission denied
ubuntu@ip-172-31-83-79:~$ sudo docker ps
CONTAINER ID   IMAGE          COMMAND                  CREATED             STATUS             PORTS     NAMES
f35fe67ef34a   nginx:latest   "/docker-entrypoint.…"   15 seconds ago      Up 14 seconds      80/tcp    demo-3
47e508cabce9   nginx:latest   "/docker-entrypoint.…"   15 minutes ago      Up 15 minutes      80/tcp    Demo-2
59a0662299f7   nginx:latest   "/docker-entrypoint.…"   About an hour ago   Up About an hour   80/tcp    demo-container
ubuntu@ip-172-31-83-79:~$
```

4: Now untar the backed up volume and mount it to the new container.

docker run –rm –volumes-from <new-container-name> -v $(pwd):/backup <image-name> bash -c “cd <volume-location>&& tar xvf /backup/backup.tar --strip 1”

```
root@ip-172-31-83-79:/home/ubuntu# docker run --rm --volumes-from demo-3 -v $(pwd):/backup nginx:latest bash -c "cd /app && tar xvf /backup/backup.tar --strip 1"
app/hello.txt
root@ip-172-31-83-79:/home/ubuntu#
```

5: Verify whether the volume contents have been restored by going into the newly created container.

docker exec –it <container_id> bash

cd app

ls

```
root@ip-172-31-83-79:/home/ubuntu# docker ps
CONTAINER ID   IMAGE          COMMAND                  CREATED             STATUS             PORTS     NAMES
f35fe67ef34a   nginx:latest   "/docker-entrypoint.…"   19 minutes ago      Up 19 minutes      80/tcp    demo-3
47e508cabce9   nginx:latest   "/docker-entrypoint.…"   34 minutes ago      Up 34 minutes      80/tcp    Demo-2
59a0662299f7   nginx:latest   "/docker-entrypoint.…"   About an hour ago   Up About an hour   80/tcp    demo-container
root@ip-172-31-83-79:/home/ubuntu#
root@ip-172-31-83-79:/home/ubuntu#
root@ip-172-31-83-79:/home/ubuntu# docker exec -it f35fe67ef34a bash
root@f35fe67ef34a:/# cd app
root@f35fe67ef34a:/app# ls
hello.txt
root@f35fe67ef34a:/app#
```