

## Experiment 6

Aim :- Working with docker compose files to control multiple containers

### 1. Creating Compose file

Solution :-

Very first we need to create a nginx folder and inside that folder we have to create **docker-compose.yml** file.

**Command :- mkdir nginx**

```
vishalthakur@vishals-MacBook-Air ~ % mkdir nginx  
vishalthakur@vishals-MacBook-Air ~ %
```

**Command :- cd nginx**

**Command :- vi docker-compose.yml**

```
vishalthakur@vishals-MacBook-Air nginx % vi docker-compose.yml
```

### 2. Create a service named “databases”. Use image named “mysql”.

- Map container 3306 port machine to host machine 3306 port.

Solution :-

**Command :- vi docker-compose.yml**

```
version: '3'  
services:  
  database:  
    image: mysql  
    ports:  
      - "3307:3306"
```

3. Add environment variable named “MYSQL\_ROOT\_PASSWORD”, “MYSQL\_DATABASE”, “MYSQL\_USER” and “MYSQL\_PASSWORD” along with corresponding values for all.

Solution: -

**Command :- vi evs.env**

```
vishalthakur@vishals-MacBook-Air nginx % vi evs.env
MYSQL_ROOT_PASSWORD=redhat08
MYSQL_DATABASE=nginxdb
MYSQL_USER=root
~
~
~
~
~
~
~
```

4. Add another service named “web”, Use image nginx

Solution: -

**Command :- vi docker-compose.yml**

```
version: '3'
services:
  database:
    image: mysql
    ports:
      - "3307:3306"
    env_file:
      - evs.env
  web:
    image: nginx
    ports:
      - "80:80"
    depends_on:
      - database
~
~
~
~
~
~
~
~
~
~
```

5. Save docker-compose.yml file and do docker compose up

Solution :-

Command :- docker compose up -d

The command will download all the images mentioned in docker-compose.yml file and will run the instance of it in a respective container.

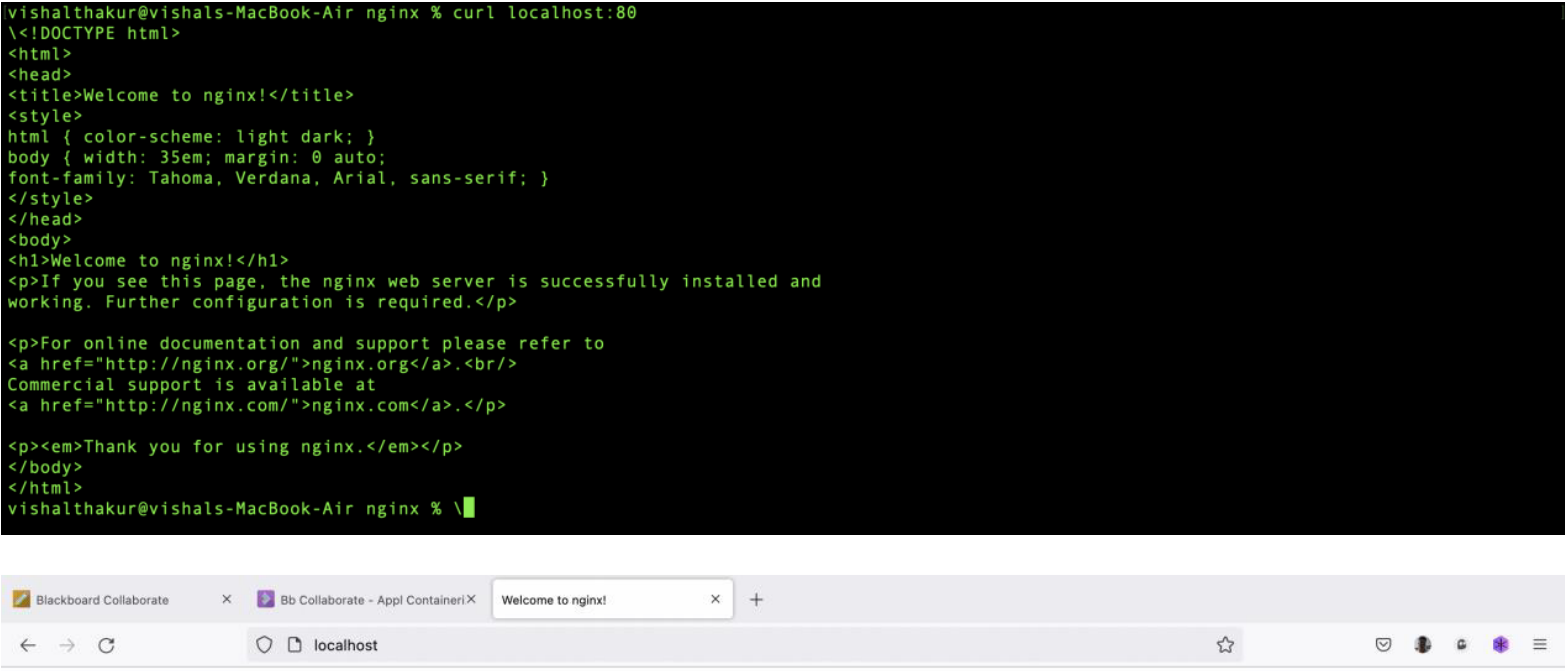
```
vishalthakur@vishals-MacBook-Air nginx % docker compose up -d
[+] Running 19/19
  :: web Pulled
  :: 3d898485473e Pull complete
  :: 3f45c0a5377f Pull complete
  :: f1cdcf23708a Pull complete
  :: a73e5a7988e9 Pull complete
  :: 43509f6ae4b3 Pull complete
  :: 8460b172ee88 Pull complete
  :: database Pulled
  :: 9a8b791677e1 Pull complete
  :: 51c023923f62 Pull complete
  :: af22db8f5e18 Pull complete
  :: 428c3a923aa3 Pull complete
  :: 830d9608cd58 Pull complete
  :: 9914654f8cd5 Pull complete
  :: 22a35992845d Pull complete
  :: 54d4540528c8 Pull complete
  :: 4c6ec168f6cf Pull complete
  :: 1742f8a782c5 Pull complete
  :: 27e5cc37f4b1 Pull complete
[+] Running 3/3
  :: Network nginx_default Created
  :: Container nginx-database-1 Started
  :: Container nginx-web-1 Started
vishalthakur@vishals-MacBook-Air nginx %
```

```
vishalthakur@vishals-MacBook-Air nginx % docker ps -a
CONTAINER ID   IMAGE          COMMAND                  CREATED        STATUS        PORTS          NAMES
76cd8dd246f   nginx         "/docker-entrypoint..." 7 minutes ago  Up 7 minutes  0.0.0.0:80->80/tcp  nginx-web-1
5f2d83ba7a9a   mysql        "docker-entrypoint.s..." 7 minutes ago  Exited (1) 7 minutes ago           nginx-database-1
605d6e366482   mysql        "docker-entrypoint.s..." 7 minutes ago  Up 7 minutes           k8s_vpnkit-controller_vpnkit-controller_kube-system_a2e27ff6-4eff-42af-a9c0-4c861bcd37d9_1
8              blissful_hugle
7c7addfca4ba   ubuntu:latest "/bin/bash"             About an hour ago  Exited (0) About an hour ago       k8s_storage-provisioner_storage-provisioner_kube-system_ce0f8d7f-2882-4498-8dae-alc1dcff3e1de_1
f052598987e0   c027a58fa0bb "/storage-provisione..." About an hour ago  Up About an hour           k8s_storage-provisioner_storage-provisioner_kube-system_ce0f8d7f-2882-4498-8dae-alc1dcff3e1de_1
3b27217cfeb6   edaa71f2aee8 "/coredns -conf /etc..." About an hour ago  Up About an hour           k8s_coredns_coredns-6d4b75cb6d-gq27n_kube-system_56d1de12-6ccd-4668-b37c-e38c6571c6c7_1
0c423534e035   k8s.gcr.io/pause:3.8 "/pause"              About an hour ago  Up About an hour           k8s_POD_vpnkit-controller_kube-system_a2e27ff6-4eff-42af-a9c0-4c861bcd37d9_1
b6f55d7657de   4f5059b7cb08 "/usr/local/bin/kube..." About an hour ago  Up About an hour           k8s_kube-proxy_kube-proxy-21nq4_kube-system_b0c9ef78-921a-4e89-a3df-8acbb5c71aeb_1
05efeb99fc147   k8s.gcr.io/pause:3.8 "/pause"              About an hour ago  Up About an hour           k8s_POD_coredns-6d4b75cb6d-gq27n_kube-system_56d1de12-6ccd-4668-b37c-e38c6571c6c7_1
c28b65e9dc09   k8s.gcr.io/pause:3.8 "/pause"              About an hour ago  Up About an hour           k8s_POD_kube-proxy-21nq4_kube-system_b0c9ef78-921a-4e89-a3df-8acbb5c71aeb_1
4e5e42dea8a7   k8s.gcr.io/pause:3.8 "/pause"              About an hour ago  Up About an hour           k8s_POD_storage-provisioner_kube-system_ce0f8d7f-2882-4498-8dae-alc1dcff3e1de_1
2dc2ec7b2549   edaa71f2aee8 "/coredns -conf /etc..." About an hour ago  Up About an hour           k8s_coredns_coredns-6d4b75cb6d-5m25j_kube-system_f3e89842-6837-490b-a3be-2dbb1710e42c_1
03fc42a42d3f   k8s.gcr.io/pause:3.8 "/pause"              About an hour ago  Up About an hour           k8s_POD_coredns-6d4b75cb6d-5m25j_kube-system_f3e89842-6837-490b-a3be-2dbb1710e42c_1
bc3d79179136   21a90cbceae7 "kube-apiserver --ad..." About an hour ago  Up About an hour           k8s_kube-apiserver_kube-apiserver-docker-desktop_kube-system_f59181e45aa472d140b331ad42b9f0_1
f0f0_1
0ae1f04f50db   a9a710bb96df "etcd --advertise-cl..." About an hour ago  Up About an hour           k8s_etcd_etcd-docker-desktop_kube-system_2449ddc0985e3be8dd23ffc4d12cb53b_1
8a6f70532701   25034e073eab "kube-scheduler --au..." About an hour ago  Up About an hour           k8s_kube-scheduler_kube-scheduler-docker-desktop_kube-system_a31c4b29a6bb804ea33360ba0a65dc67_1
dc67_1
f45b37c2ae36   cbadad6da5e7 "kube-controller-man..." About an hour ago  Up About an hour           k8s_kube-controller-manager_kube-controller-manager-docker-desktop_kube-system_738060756a
ab710f2803c9939fe352c3_1
0fc6d9c2d414   k8s.gcr.io/pause:3.8 "/pause"              About an hour ago  Up About an hour           k8s_POD_kube-scheduler-docker-desktop_kube-system_a31c4b29a6bb804ea33360ba0a65dc67_1
33e5683c732   k8s.gcr.io/pause:3.8 "/pause"              About an hour ago  Up About an hour           k8s_POD_kube-controller-manager-docker-desktop_kube-system_738060756a0b70f2803c9939fe352c3_1
c3_1
356ab8ef70e0   k8s.gcr.io/pause:3.8 "/pause"              About an hour ago  Up About an hour           k8s_POD_kube-apiserver-docker-desktop_kube-system_f59181e45aa472d140b331ad42b9f0_1
f59d76feec14   k8s.gcr.io/pause:3.8 "/pause"              About an hour ago  Up About an hour           k8s_POD_etcd-docker-desktop_kube-system_2449ddc0985e3be8dd23ffc4d12cb53b_1
ea1b0f7c21e53   k8s3codar/redis-node-docker-example "npm start"           6 days ago         Exited (1) 6 days ago         v10rant_torvalds
7fe9e7c2adcs   alpine       "ping -c1 red_contain..." 7 days ago         Exited (0) 7 days ago         practical_lewin
0debb2831e1   redis        "docker-entrypoint.s..." 7 days ago         Exited (0) 6 days ago         red_contain
```

6. Verify nginx service is up and accessible on machine

Solution :-

Command :- curl localhost:80



7. Stop and remove your docker container using docker compose

Solution :-

Command :- docker compose down

```
vishalthakur@vishals-MacBook-Air nginx % docker ps -a
CONTAINER ID   IMAGE                                COMMAND                  CREATED    STATUS      PORTS      NAMES
d1c911601f25   2edf9c994f19                        "/kube-vpnkit-forwar..." 6 minutes ago Up 6 minutes      k8s_vpnkit-controller_vpnkit-controller_kube-syste
m_a2e27ff6-4eff-42af-a9c0-4c861bcd37d9_11
7c7addfca4ba   ubuntu:latest                       "/bin/bash"              2 hours ago Exited (0) 2 hours ago blissful_hugle
f052590987e0   c027a58fa0bb                       "/storage-provisione..." 2 hours ago Up 2 hours      k8s_storage-provisioner_storage-provisioner_kube-s
ystem_ce0f8d7f-2882-4498-8dae-allcdf3e1de_2
3827d17cfeb6   edaa71f2aee8                        "/coredns -conf /etc..." 2 hours ago Up 2 hours      k8s_coredns_coredns-6d4b75cb6d-gq27n_kube-system_5i
6d1de12-6ccd-4668-b37c-e30c6571c6c7_1
0c423534e035   k8s.gcr.io/pause:3.8                "/pause"                  2 hours ago Up 2 hours      k8s_POD_vpnkit-controller_kube-system_a2e27ff6-4ef
f-42af-a9c0-4c861bcd37d9_1
b6f55d7657de   4f5059b7cbd8                        "/usr/local/bin/kube..." 2 hours ago Up 2 hours      k8s_kube-proxy_kube-proxy-2lnq4_kube-system_b0c9ef
70-921a-4e89-a3df-8acbb5c71aeb_1
05efe09fc147   k8s.gcr.io/pause:3.8                "/pause"                  2 hours ago Up 2 hours      k8s_POD_coredns-6d4b75cb6d-gq27n_kube-system_56d1d
e12-6ccd-4668-b37c-e30c6571c6c7_1
c20b65eedc09   k8s.gcr.io/pause:3.8                "/pause"                  2 hours ago Up 2 hours      k8s_POD_kube-proxy-2lnq4_kube-system_b0c9ef70-921a
-4e89-a3df-8acbb5c71aeb_1
4e5e42dea0a7   k8s.gcr.io/pause:3.8                "/pause"                  2 hours ago Up 2 hours      k8s_POD_storage-provisioner_kube-system_ce0f8d7f-2
882-4498-8dae-allcdf3e1de_1
2dc2ec7b2549   edaa71f2aee8                        "/coredns -conf /etc..." 2 hours ago Up 2 hours      k8s_coredns_coredns-6d4b75cb6d-5m25j_kube-system_f
3e89842-6837-490b-a3be-2dbb1710e42c_1
03fc42442d3f   k8s.gcr.io/pause:3.8                "/pause"                  2 hours ago Up 2 hours      k8s_POD_coredns-6d4b75cb6d-5m25j_kube-system_f3e89
842-6837-490b-a3be-2dbb1710e42c_1
bc3d79179136   21a90cbceae7                        "kube-apiserver --ad..." 2 hours ago Up 2 hours      k8s_kube-apiserver_kube-apiserver-docker-desktop_k
ube-system_f59181e45aa4f2d140b33clad42bf0f0_1
6bef884f5d0b   a9a710bb96df                       "etcd --advertise-cl..." 2 hours ago Up 2 hours      k8s_etcd_etcd-docker-desktop_kube-system_2449ddc09
85e3be8dd23ffc4d12cb53b_1
8a6ff0532701   25034e073eab                        "kube-scheduler --au..." 2 hours ago Up 2 hours      k8s_kube-scheduler_kube-scheduler-docker-desktop_k
ube-system_a31c4b29a6bb804ea33360ba0a65dc67_1
f45b37c2ae36   cbada6da5e7                         "kube-controller-man..." 2 hours ago Up 2 hours      k8s_kube-controller-manager_kube-controller-manage
r-docker-desktop_kube-system_738606756aab710f2003c9939fe352c3_1
0fc6d9c2d414   k8s.gcr.io/pause:3.8                "/pause"                  2 hours ago Up 2 hours      k8s_POD_kube-scheduler-docker-desktop_kube-system_
a31c4b29a6bb804ea33360ba0a65dc67_1
33e56683c732   k8s.gcr.io/pause:3.8                "/pause"                  2 hours ago Up 2 hours      k8s_POD_kube-controller-manager-docker-desktop_kub
e-system_738606756aab710f2003c9939fe352c3_1
e-system_738606756aab710f2003c9939fe352c3_1
356ab8ef70e0   k8s.gcr.io/pause:3.8                "/pause"                  2 hours ago Up 2 hours      k8s_POD_kube-apiserver-docker-desktop_kube-system_
f59181e45aa4f2d140b33clad42bf0f0_1
f99d76feelc4   k8s.gcr.io/pause:3.8                "/pause"                  2 hours ago Up 2 hours      k8s_POD_etcd-docker-desktop_kube-system_2449ddc098
5e3be8dd23ffc4d12cb53b_1
ea1b0fc21e53   katacoda/redis-node-docker-example  "npm start"              6 days ago Exited (1) 6 days ago vibrant_torvalds
7fe9e7c2adc5   alpine                               "ping -c1 red_contain..." 7 days ago Exited (0) 7 days ago practical_lewin
0debb28315e1   redis                               "docker-entrypoint.s..." 7 days ago Exited (0) 6 days ago red_contain
vishalthakur@vishals-MacBook-Air nginx %
```

Submitted by :-

Name :- Vishal

SAPID :- 500084112

Roll no. :- R2142201315

Submitted to:-

Name :- Hitesh Sharma