



**UNIVERSITY OF PETROLEUM AND
ENERGY STUDIES**

**APPLICATION CONTAINERIZATION AND
ORCHESTRATION LAB**

COURSE: B.Tech CSE (Devops)

INSTRUCTOR: DR.Hitesh Kumar Sharma

**UNDERGRAD: Priyanshu Rai
SAP ID: 500096900**

EXPERIMENT 6

AIM: Working with Docker Compose File to Control Multiple Containers

Steps to Complete:

Creating compose files

- ❖ Create a directory named nginx in your root.
- ❖ Switch to that directory and create a file named docker-compose.yaml

```
[priyanshurai@MacBook-Air ~ % mkdir nginx
[priyanshurai@MacBook-Air ~ % cd nginx
cd: string not in pwd: mkdir
[priyanshurai@MacBook-Air ~ % cd nginx
[priyanshurai@MacBook-Air nginx % touch docker-compose.yaml
[priyanshurai@MacBook-Air nginx % ls
docker-compose.yaml
```

```
[priyanshurai@MacBook-Air nginx % cat docker-compose.yaml
version: '3'
services:
  databases:
    image: mysql
    ports:
      - "3307:3306"
    env_file:
      - envs.env
  web:
    image: nginx
    ports:
      - "80:80"
    depends_on:
      - databases
```

- ❖ Use docker-compose version 2 to create docker-compose.yaml file. Create a service named "databases". Use image named "mysql"

Map container 3306 port to host machine 3306 port.

Add environment variables named "MYSQL_ROOT_PASSWORD", "MYSQL_DATABASE", "MYSQL_USER" and "MYSQL_PASSWORD" along with corresponding values for all.

```
priyanshurai@MacBook-Air nginx % cat > evs.env <<EOF
heredoc> MYSQL_ROOT_PASSWORD=redhat08
MYSQL_DATABASE=nginxdb
MYSQL_USER=root<2028>
heredoc> █
```

```
priyanshurai@MacBook-Air nginx % cat docker-compose.yaml
version: '3'
services:
  databases:
    image: mysql
    ports:
      - "3307:3306"
    env_file:
      - evs.env
  web:
    image: nginx
    ports:
      - "80:80"
    depends_on:
      - databases
priyanshurai@MacBook-Air nginx % █
```

Running images using docker-compose

- ❖ Save docker-compose.yaml file and do docker-compose up.

```
priyanshurai@MacBook-Air nginx % docker-compose up -d
[+] Running 11/11
✓ databases 10 layers [#####] 0B/0B Pulled 56.3s
✓ e39ec8f010eb Pull complete 20.3s
✓ e2b7fadc33ec Pull complete 20.4s
✓ 9d193449aafd Pull complete 20.4s
✓ 6ea497c74b15 Pull complete 20.6s
✓ 7778acbf55f3 Pull complete 20.6s
✓ b65a5d7a2435 Pull complete 20.6s
✓ cef9fb0078a5 Pull complete 36.9s
✓ 5b6dc73ec724 Pull complete 36.9s
✓ d992bb39e209 Pull complete 50.7s
✓ 4431432b89a3 Pull complete 50.7s
[+] Running 3/3
✓ Network nginx_default Created 0.1s
✓ Container nginx-databases-1 Started 1.2s
✓ Container nginx-web-1 Started 0.9s
```

- ❖ Verify nginx service is up and is accessible on machine.

```
priyanshurai@MacBook-Air nginx % curl http://localhost:80
<!DOCTYPE html>
<html>
<head>
<title>Welcome to nginx!</title>
<style>
html { color-scheme: light dark; }
body { width: 35em; margin: 0 auto;
font-family: Tahoma, Verdana, Arial, sans-serif; }
</style>
</head>
<body>
<h1>Welcome to nginx!</h1>
<p>If you see this page, the nginx web server is successfully installed and
working. Further configuration is required.</p>

<p>For online documentation and support please refer to
<a href="http://nginx.org/">nginx.org</a>.<br/>
Commercial support is available at
<a href="http://nginx.com/">nginx.com</a>.</p>

<p><em>Thank you for using nginx.</em></p>
</body>
</html>
```