

Module 7: Docker Ecosystem & Networking

Demo Document

edureka!

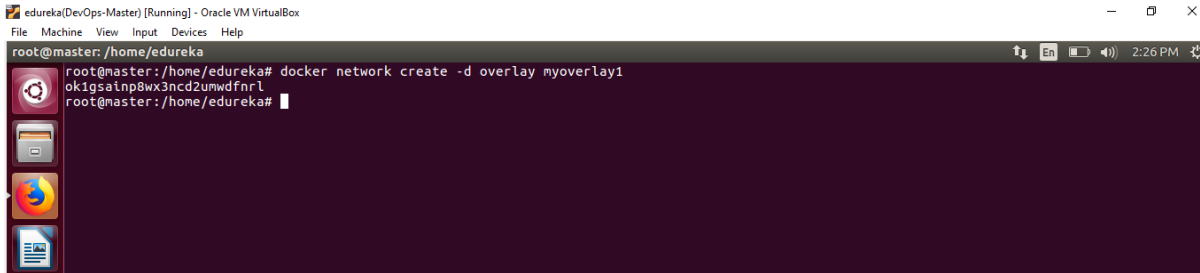
edureka!

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Demo: 3 Create and deploy a multi-tier application over swarm cluster.

Step :1 Create an overlay network.

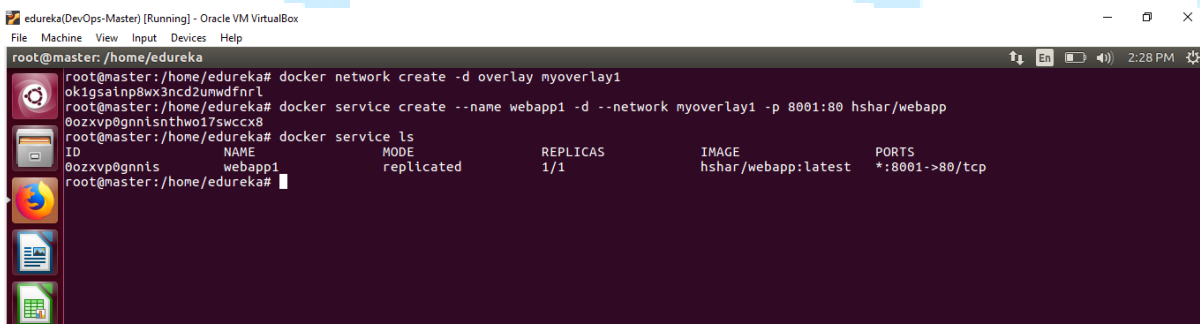
```
docker network create -d overlay myoverlay1
```



```
edureka(DevOps-Master) [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
root@master:/home/edureka# docker network create -d overlay myoverlay1
ok1gsainp8wx3ncd2umwdfnrl
root@master:/home/edureka#
```

Step2: Create a service webapp 1 and use the network you have created to deploy this service over the swarm cluster.

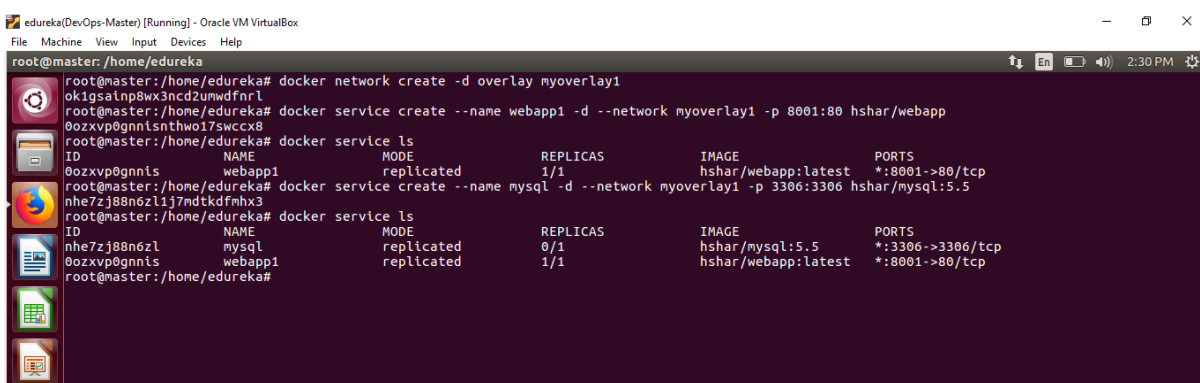
```
docker service create --name webapp1 -d --network myoverlay1 -p 8001:80 hshar/webapp
```



```
edureka(DevOps-Master) [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
root@master:/home/edureka# docker network create -d overlay myoverlay1
ok1gsainp8wx3ncd2umwdfnrl
root@master:/home/edureka# docker service create --name webapp1 -d --network myoverlay1 -p 8001:80 hshar/webapp
0ozxvp0ggnisnthwo17swccx8
root@master:/home/edureka# docker service ls
ID            NAME      MODE           REPLICAS        IMAGE              PORTS
0ozxvp0ggnis webapp1    replicated     1/1              hshar/webapp:latest *:8001->80/tcp
root@master:/home/edureka#
```

Step:3 Check if the services are created by checking it with the below command.

```
docker service ls
```



```
edureka(DevOps-Master) [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
root@master:/home/edureka# docker network create -d overlay myoverlay1
ok1gsainp8wx3ncd2umwdfnrl
root@master:/home/edureka# docker service create --name webapp1 -d --network myoverlay1 -p 8001:80 hshar/webapp
0ozxvp0ggnisnthwo17swccx8
root@master:/home/edureka# docker service ls
ID            NAME      MODE           REPLICAS        IMAGE              PORTS
0ozxvp0ggnis webapp1    replicated     1/1              hshar/webapp:latest *:8001->80/tcp
root@master:/home/edureka# docker service create --name mysql -d --network myoverlay1 -p 3306:3306 hshar/mysql:5.5
nhe7zj88n6zl1j7mdtkdfnhx3
root@master:/home/edureka# docker service ls
ID            NAME      MODE           REPLICAS        IMAGE              PORTS
nhe7zj88n6zl mysql     replicated     0/1              hshar/mysql:5.5    *:3306->3306/tcp
0ozxvp0ggnis webapp1    replicated     1/1              hshar/webapp:latest *:8001->80/tcp
root@master:/home/edureka#
```

Step:4 Create a service mysql and use the network you have created to deploy the service over the swarm cluster.

```
docker service create --name mysql --network myoverlay1 -p 3306:3306 hshar/mysql:5.5
```

```
edureka(DevOps-Master) [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
Terminal File Edit View Search Terminal Help
root@master:/home/edureka# docker service create --name mysql -d --network myoverlay1 -p 3306:3306 hshar/mysql:5.5
```

Step 5: Check which container is running on your master node and go inside the hshar/webapp container.

```
docker ps
docker exec -it container_id bash
nano var/www/html/index.php
```

```
edureka(DevOps-Master) [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
root@00855713d24d:/
root@master:/home/edureka# docker service ls
ID                NAME      MODE      REPLICAS  IMAGE                PORTS
nhe7zj88n6zl     mysql    replicated 1/1        hshar/mysql:5.5     *:3306->3306/tcp
0ozxvp0gnnis     webapp1   replicated 1/1        hshar/webapp:latest *:8001->80/tcp

root@master:/home/edureka# docker ps
CONTAINER ID   IMAGE                COMMAND                  CREATED        STATUS        PORTS        NAMES
00855713d24d   hshar/webapp:latest  "/bin/sh -c 'apachec..."  7 minutes ago  Up 7 minutes  80/tcp       webapp1.1.wlila

root@master:/home/edureka# docker exec -it 00855713d24d bash
root@00855713d24d:/# nano var/www/html/index.php
```

Step 6: Change \$servername from localhost to mysql and \$password from "" to "edureka" and save your index.php file by typing ctrl+x and then y to save and press enter.



```

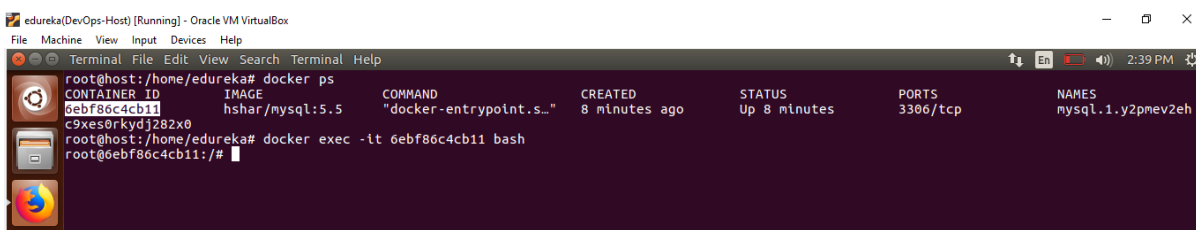
GNU nano 2.9.3 var/www/html/index.php
<html>
<head>
<title>Docker Sample App</title>
<?php
if($_SERVER['REQUEST_METHOD'] == "POST")
{
    $servername = "mysql";
    $username = "root";
    $password = "edureka";
    $dbname = "docker";
    $name=$_POST["name"];
    $phone=$_POST["phone"];

    // Create connection
    $conn = new mysqli($servername, $username, $password, $dbname);
    // Check connection
    if ($conn->connect_error) {
        die("Connection failed: " . $conn->connect_error);
    }
}

```

Step:7 Go inside mysql container which is running on other node .

```
Docker exec -it mysql container_id bash
```



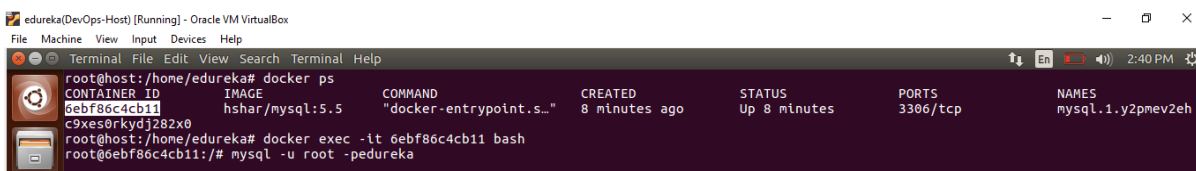
```

root@host:/home/edureka# docker ps
CONTAINER ID   IMAGE     COMMAND                  CREATED    STATUS    PORTS    NAMES
6ebf86c4cb11   hshar/mysql:5.5   "docker-entrypoint.s..."  8 minutes ago    Up 8 minutes    3306/tcp    mysql.1.y2pmev2eh
root@host:/home/edureka# docker exec -it 6ebf86c4cb11 bash
root@6ebf86c4cb11:/#

```

Step 8: Use the below commands to use database in mysql.

```
mysql -u root -pedureka
```



```

root@host:/home/edureka# docker ps
CONTAINER ID   IMAGE     COMMAND                  CREATED    STATUS    PORTS    NAMES
6ebf86c4cb11   hshar/mysql:5.5   "docker-entrypoint.s..."  8 minutes ago    Up 8 minutes    3306/tcp    mysql.1.y2pmev2eh
root@host:/home/edureka# docker exec -it 6ebf86c4cb11 bash
root@6ebf86c4cb11:/# mysql -u root -pedureka
mysql>

```

Step 9: Create a database and a table in mysql which will be used to get data from webapp1.

```
CREATE DATABASE docker;
```

```

mysql> CREATE DATABASE docker;
Query OK, 1 row affected (0.00 sec)

mysql>

```

```
USE docker;
```

```

mysql> USE docker;
Database changed

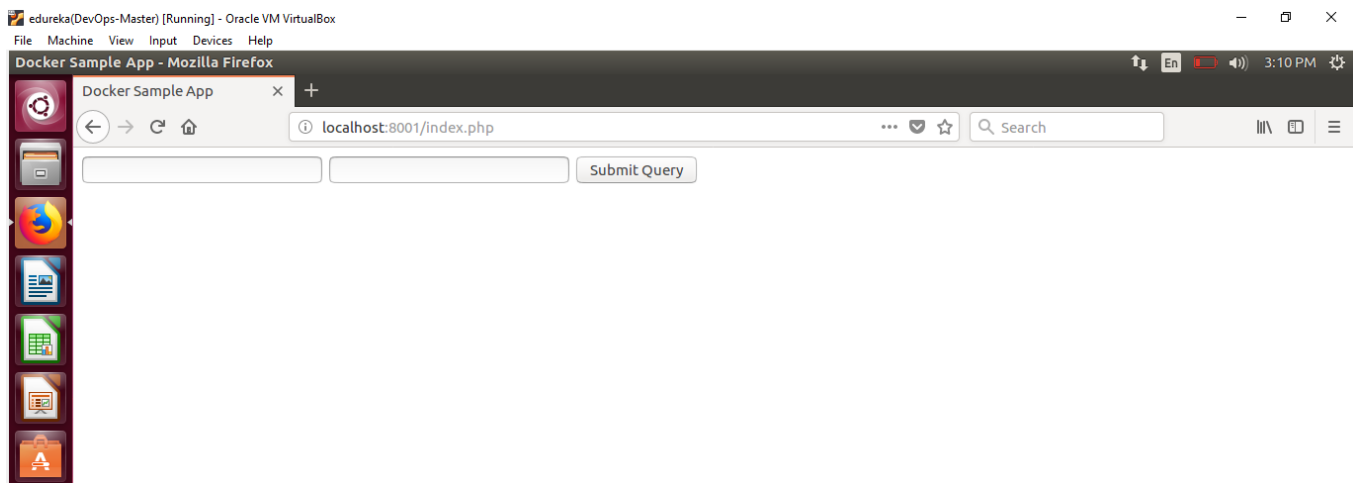
```

```
CREATE TABLE emp (name VARCHAR(10), phone VARCHAR(11));
```

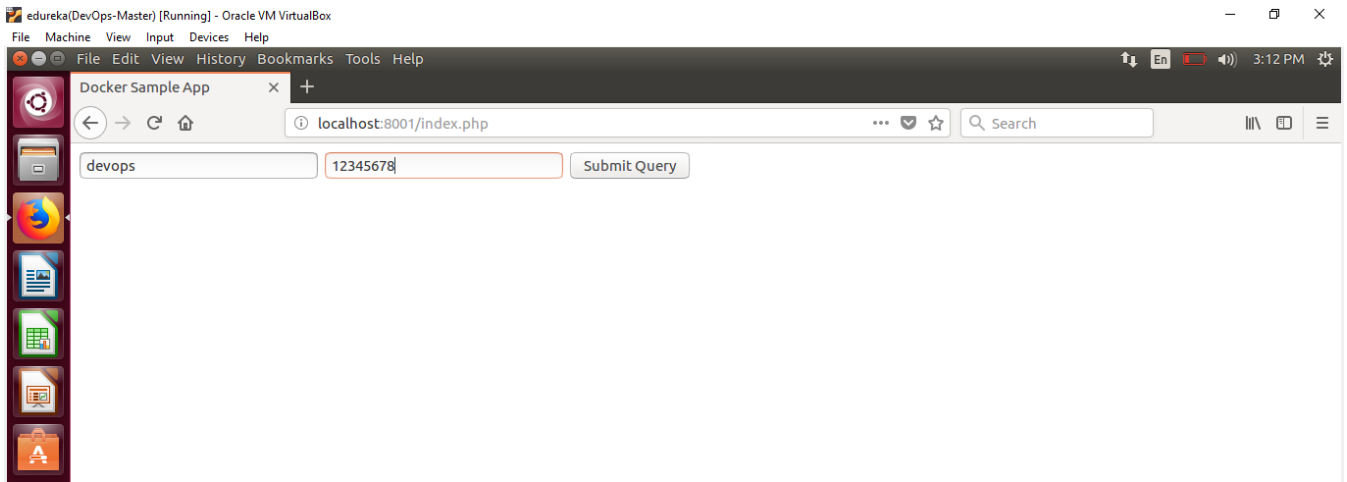
```
mysql> CREATE TABLE emp(name VARCHAR(10), phone VARCHAR(10));  
Query OK, 0 rows affected (0.06 sec)
```

Now exit the mysql and container as well.

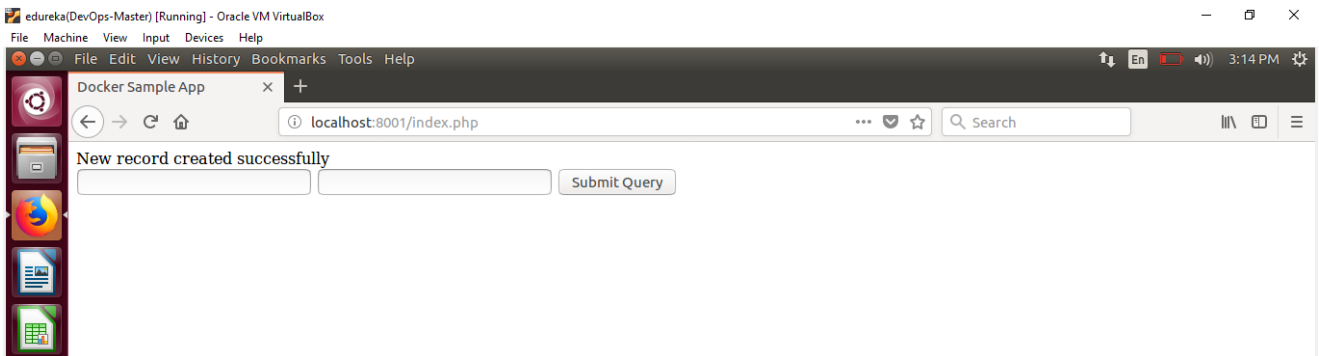
Step 10: Now go to your browser and enter the address as localhost:8001/index.php



You will have to enter the data and click on submit query.



You will see the below message after clicking on submit query .



Now go to that node in which your mysql service is running .

Go inside the container.

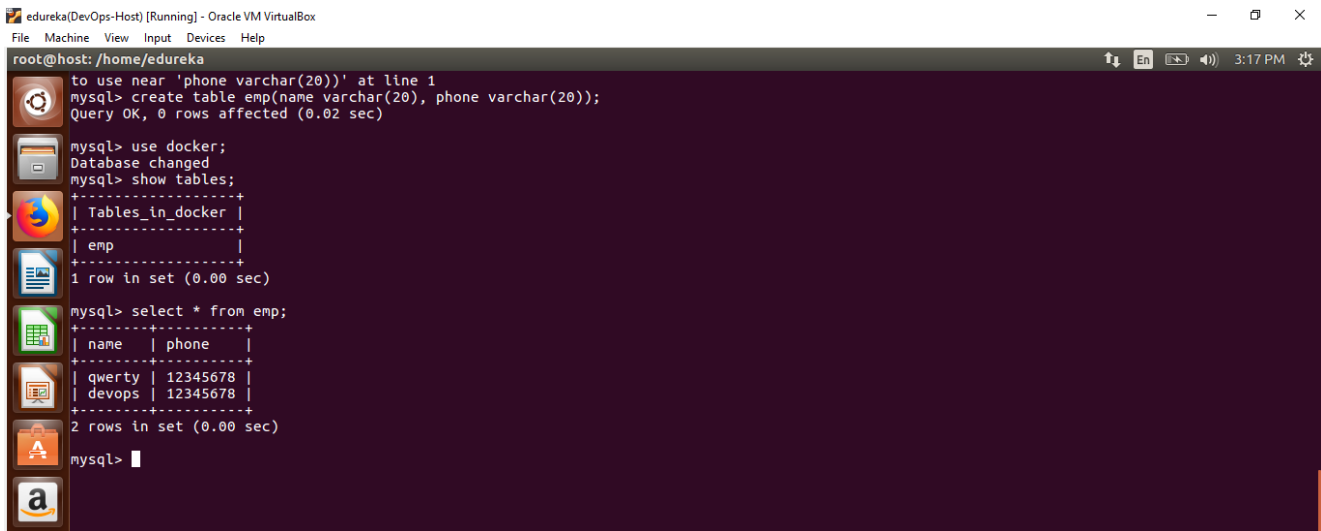
```
docker exec -it container_id bash
```

```
mysql -u root -pedureka
```

```
use docker;
```

```
show tables;
```

```
select * from emp;
```



```
edureka(DevOps-Host) [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
root@host: /home/edureka
mysql> create table emp(name varchar(20), phone varchar(20));
Query OK, 0 rows affected (0.02 sec)

mysql> use docker;
Database changed
mysql> show tables;
+-----+
| Tables_in_docker |
+-----+
| emp               |
+-----+
1 row in set (0.00 sec)

mysql> select * from emp;
+-----+-----+
| name  | phone |
+-----+-----+
| qwerty | 12345678 |
| devops | 12345678 |
+-----+-----+
2 rows in set (0.00 sec)

mysql>
```

edureka!