

**Pandit Deendayal Energy University, Gandhinagar**

**School of Technology**

**Department of Computer Science & Engineering**

**Cloud Computing Lab (20CP322P)**

**B.Tech-Computer Science & Engineering (Sem-VI)**

**Lab 7 Assignment: Working with DOCKER.**

Aim: Create three containers and access these containers from each other by using IP address and container name.

- 1) Create three containers.
- 2) Access these containers using IP address
- 3) Access these containers using container name.

**Step 1:** Create three containers.

```
pdev2@Dev MINGW64 /
$ docker run -d --name nginx1 -p 8080:80 nginx
b7c8779dd9316603de191db76ea58bcd2ea934c9d9f23b4e0c10ec1d41e45b92

pdev2@Dev MINGW64 /
$ docker run -d --name nginx2 -p 8081:80 nginx
a02711de752b442380b449182692004e96355e4138a1ecd7a06e040fed6a06b2

pdev2@Dev MINGW64 /
$ docker run -d --name nginx3 -p 8082:80 nginx
33732850ad209d0f4f823d1f62e6eddf198c9abb5165dd9278ab50916c26c5ce

pdev2@Dev MINGW64 /
$ docker ps
```

| CONTAINER ID | IMAGE | COMMAND                    | CREATED            | STATUS            | PORTS                | NAMES  |
|--------------|-------|----------------------------|--------------------|-------------------|----------------------|--------|
| 33732850ad20 | nginx | "/docker-entrypoint. ...." | About a minute ago | Up About a minute | 0.0.0.0:8082->80/tcp | nginx3 |
| a02711de752b | nginx | "/docker-entrypoint. ...." | About a minute ago | Up About a minute | 0.0.0.0:8081->80/tcp | nginx2 |
| b7c8779dd931 | nginx | "/docker-entrypoint. ...." | About a minute ago | Up About a minute | 0.0.0.0:8080->80/tcp | nginx1 |

## Finding IP of each container

```
pdev2@Dev MINGW64 /
$ docker inspect -f '{{range .NetworkSettings.Networks}}{{.IPAddress}}{{end}}' nginx1
172.17.0.2

pdev2@Dev MINGW64 /
$ docker inspect -f '{{range .NetworkSettings.Networks}}{{.IPAddress}}{{end}}' nginx2
172.17.0.3

pdev2@Dev MINGW64 /
$ docker inspect -f '{{range .NetworkSettings.Networks}}{{.IPAddress}}{{end}}' nginx3
172.17.0.4

pdev2@Dev MINGW64 /
$
```

**Step 2:** Access these containers using IP address

```
root@b7c8779dd931:/# curl 172.17.0.2
<!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>
```

```
root@a02711de752b:/# curl 172.17.0.3
<!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>
```

```
root@33732850ad20:/# curl 172.17.0.4
<!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>
```

**Step 3:** Access these containers using container name.

```
pdev2@Dev MINGW64 /  
$ docker exec -it nginx1 bash  
root@b7c8779dd931:/# hostname  
b7c8779dd931  
root@b7c8779dd931:/# hostname -I  
172.17.0.2  
root@b7c8779dd931:/# exit  
exit
```

```
pdev2@Dev MINGW64 /  
$ docker exec -it nginx2 bash  
root@a02711de752b:/# hostname  
a02711de752b  
root@a02711de752b:/# hostname -I  
172.17.0.3  
root@a02711de752b:/# exit  
exit
```

```
pdev2@Dev MINGW64 /  
$ docker exec -it nginx3 bash  
root@33732850ad20:/# hostname  
33732850ad20  
root@33732850ad20:/# hostname -I  
172.17.0.4  
root@33732850ad20:/# exit  
exit
```