Experiment No. 3.2

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Subject Name: Containerization With Docker   **Subject Code:** 22CAH-742

1. **Aim/Overview of the practical:** Creating a Private Docker Image Repository.

2. **Code for experiment/practical:**

A private Docker image repository is a Docker registry that is only accessible to authorized users. This is in contrast to a public Docker registry, such as Docker Hub, which is accessible to anyone.

Private Docker image repositories can be hosted on-premises or in the cloud. There are many benefits to using a private Docker image repository, including:
- Security
- Compliance
- Performance

Creating Private Docker Image Repository :
- Pull the Registry Image from Dockerhub

```
PS C:\Users\Pinda> docker pull registry
Using default tag: latest
latest: Pulling from library/registry
96526aa774ef: Already exists
834bccaa730c: Pull complete
87a69098c0a9: Pull complete
afc17120a9f7: Pull complete
e5ac04f3acf5: Pull complete
Digest: sha256:8a60daaa55ab0df4607c4d8625b96b97b06fd2e6ca8528275472963c4ae8afa0
Status: Downloaded newer image for registry:latest
docker.io/library/registry:latest
```

- Run local registry in detached mode

```
PS C:\Users\Pinda> docker run -d -p 5000:5000 --restart always --name registry registry:2
Unable to find image 'registry:2' locally
2: Pulling from library/registry
Digest: sha256:8a60daaa55ab0df4607c4d8625b96b97b06fd2e6ca8528275472963c4ae8afa0
Status: Downloaded newer image for registry:2
47847ce90f1548068b7a60afb3dd60c9043380a5103addb63fa7e75df27a6dc8
```

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- Now, use it from within Docker:
  $ docker pull nginx
- Set tag to ready for push
  $ docker tag nginx localhost:5000/nginx1

```
PS C:\Users\Pinda> docker tag nginx localhost:5000/nginx1
```

- Pushing image to Private Docker Image Repository
  $ docker push localhost:5000/nginx1

```
PS C:\Users\Pinda> docker push localhost:5000/nginx1
Using default tag: latest
The push refers to repository [localhost:5000/nginx1]
505f49f13fbe: Pushed
9920f1ebf52b: Pushed
768e28a222fd: Pushed
715b32fa0f12: Pushed
e503754c9a26: Pushed
609f2a18d224: Pushed
ec983b166360: Pushed
latest: digest: sha256:d2e65182b5fd330470eca9b8e23e8a1a0d87cc9b820eb1fb3f034bf8248d37ee size
: 1778
```

- Check image is pushed or not in private repository
  curl http://localhost:5000/v2/_catalog

```
PS C:\Users\Pinda> curl http://localhost:5000/v2/_catalog

StatusCode        : 200
StatusDescription : OK
Content           : {"repositories":["nginx1"]}

RawContent        : HTTP/1.1 200 OK
                    Docker-Distribution-Api-Version: registry/2.0
                    X-Content-Type-Options: nosniff
                    Content-Length: 28
                    Content-Type: application/json; charset=utf-8
                    Date: Sat, 04 Nov 2023 12:08:24 GMT...
Forms             : {}
Headers           : {[Docker-Distribution-Api-Version, registry/2.0],
                    [X-Content-Type-Options, nosniff], [Content-Length, 28],
                    [Content-Type, application/json; charset=utf-8]...}
Images            : {}
InputFields       : {}
Links             : {}
ParsedHtml        : mshtml.HTMLDocumentClass
RawContentLength  : 28
```

3. Learning outcomes (What I have learned):

a) Understand the Private Docker Image Repository.

b) Understand to run or stop Private Repository.

c) Understand to tag, push Image to Private Repository.