# Lab Exercise 3: Working with Docker Volumes

**Objective:**

- Learn how to create and manage Docker volumes.
- Understand how Docker volumes can be used to persist data across container restarts.
- Practice mounting Docker volumes to containers.

**Prerequisites:**

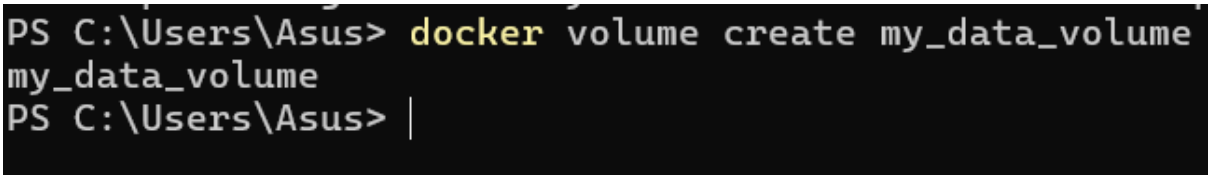
- Docker installed on your system.
- Basic understanding of Docker commands and container concepts.

**Step 1: Create a Docker Volume**

Create a new Docker volume:

```
docker volume create my_data_volume
```

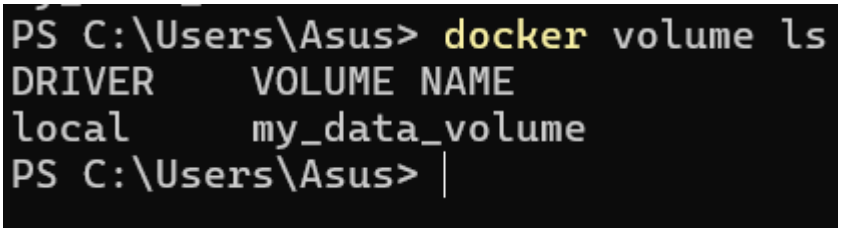
This command creates a Docker volume named my_data_volume.




Verify that the volume was created:

```
docker volume ls
```

You should see my_data_volume listed among the volumes.

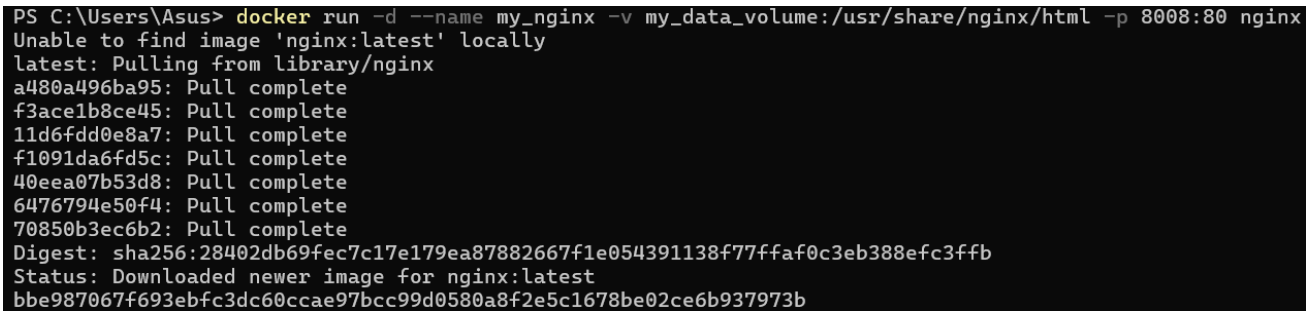


## Step 2: Run a Container with the Volume Mounted

Run an Nginx container with the volume mounted:

```
docker run -d --name my_nginx -v my_data_volume:/usr/share/nginx/html -p 8008:80 nginx
```

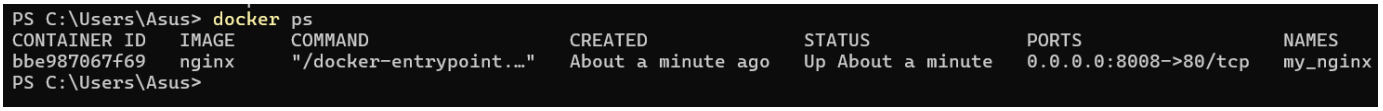
This command starts an Nginx container named my_nginx and mounts the my_data_volume volume to the /usr/share/nginx/html directory inside the container.




Verify that the container is running:

```
docker ps
```

You should see my_nginx listed as one of the running containers.




## Step 3: Interact with the Volume

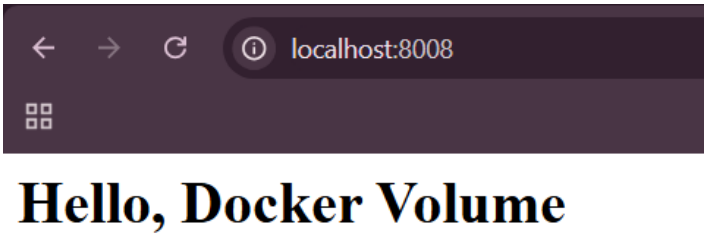
Create a simple HTML file in the volume:

```
docker exec -it my_nginx bash

echo "<h1>Hello, Docker Volume</h1>" > /usr/share/nginx/html/index.html

exit
```

This command creates an HTML file inside the /usr/share/nginx/html directory, which is backed by my_data_volume.

```
PS C:\Users\Asus> docker exec -it my_nginx bash
root@bbe987067f69:/# echo "<h1>Hello, Docker Volume</h1>" > /usr/share/nginx/html/index.html
root@bbe987067f69:/# exit
exit

What's next:
    Try Docker Debug for seamless, persistent debugging tools in any container or image → docker debug my_nginx
    Learn more at https://docs.docker.com/go/debug-cli/
PS C:\Users\Asus>
```

Access the Nginx server to see your file: Open a browser and navigate to http://localhost:8008. You should see the message "Hello, Docker Volume!" displayed on the page.




## Step 4: Test Data Persistence

Stop and remove the container:

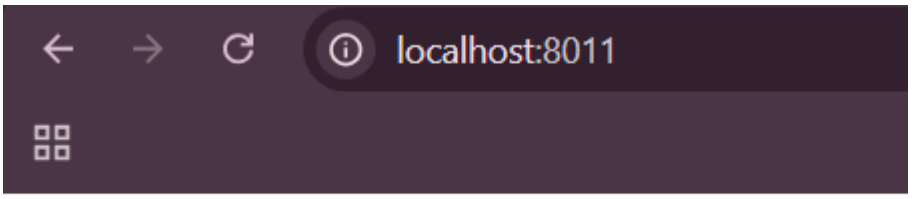
```
docker stop my_nginx

docker rm my_nginx
```

```
PS C:\Users\Asus> docker stop my_nginx
my_nginx
PS C:\Users\Asus> docker rm my_nginx
my_nginx
```

Run a new Nginx container using the same volume:

```
docker run -d -p 8011:80 -v my_data_volume:/usr/share/nginx/html nginx
```

Access the Nginx server again: Navigate to http://localhost in your browser. You should still see the "Hello, Docker Volume!" message, demonstrating that the data persisted across container instances.

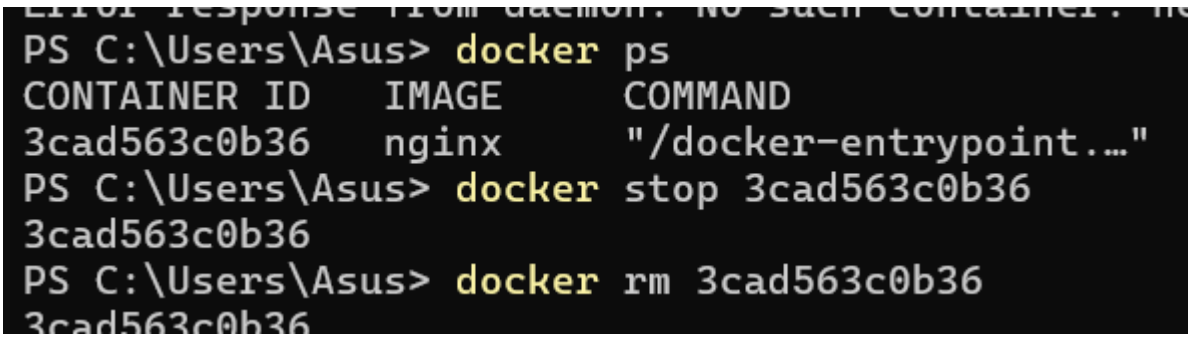



# Hello, Docker Volume

### Step 5: Clean Up

Stop and remove the container:

```
docker stop new_nginx

docker rm new_nginx
```



Remove the Docker volume:

```
docker volume rm my_data_volume
```


Verify that the volume is removed:

```
docker volume ls
```

Ensure that my_data_volume is no longer listed.