

**CONTAINERS AND DOCKERS**

**Submitted by:**

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**Batch: B1(Hons)**

***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***

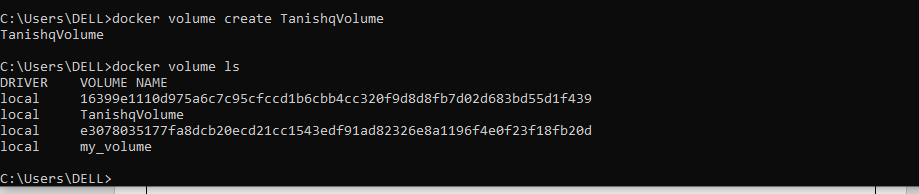
*Create a new Docker volume:*

|  |
| --- |
| ***docker volume create my\_data\_volume*** |

*This command creates a Docker volume named my\_data\_volume.*

*Verify that the volume was created:*

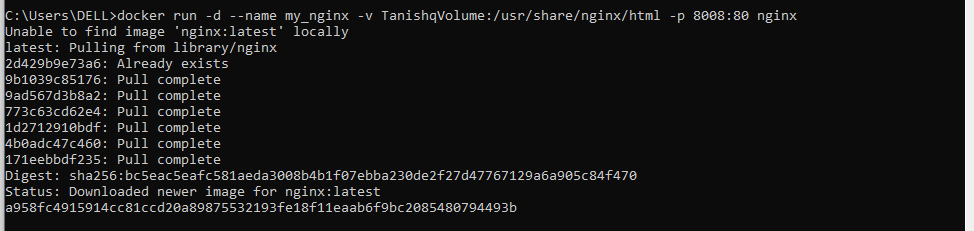
|  |
| --- |
| ***docker volume ls*** |

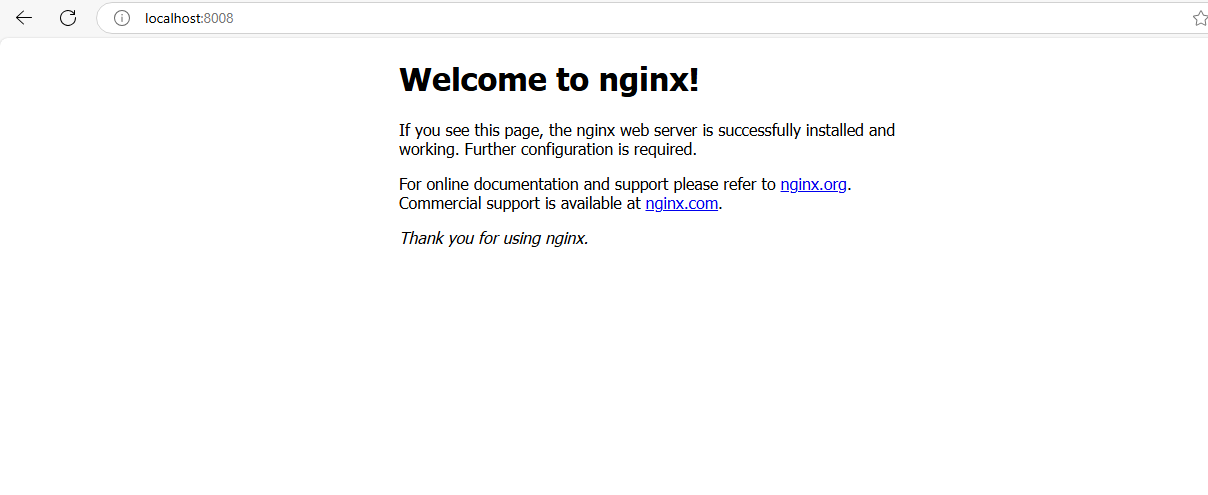


***Step 2: Run a Container with the Volume Mounted***

*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*** |

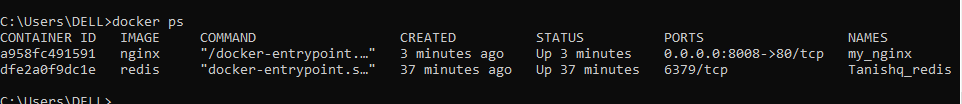




*This command starts an Nginx container named my\_nginx and mounts the my\_data\_volume volume to the /usr/share/nginx/html directory inside the container.*

*Verify that the container is running:*

|  |
| --- |
| ***docker ps***  ***You should see my\_nginx listed as one of the running containers.*** |



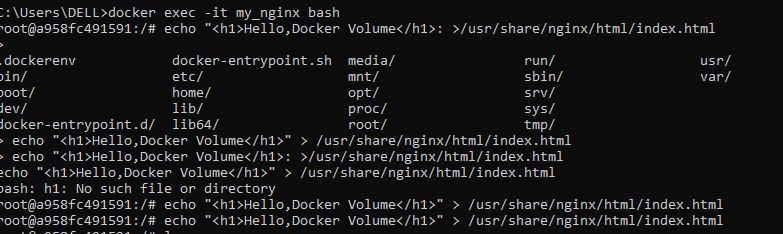
***Step 3: Interact with the Volume***

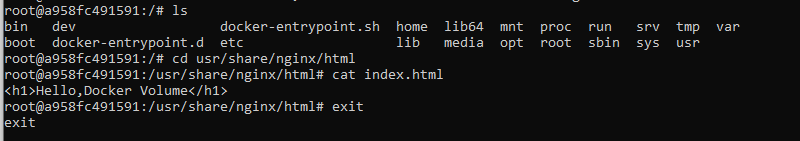
*Create a simple HTML file in the volume:*

***docker exec -it my\_nginx bash***

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

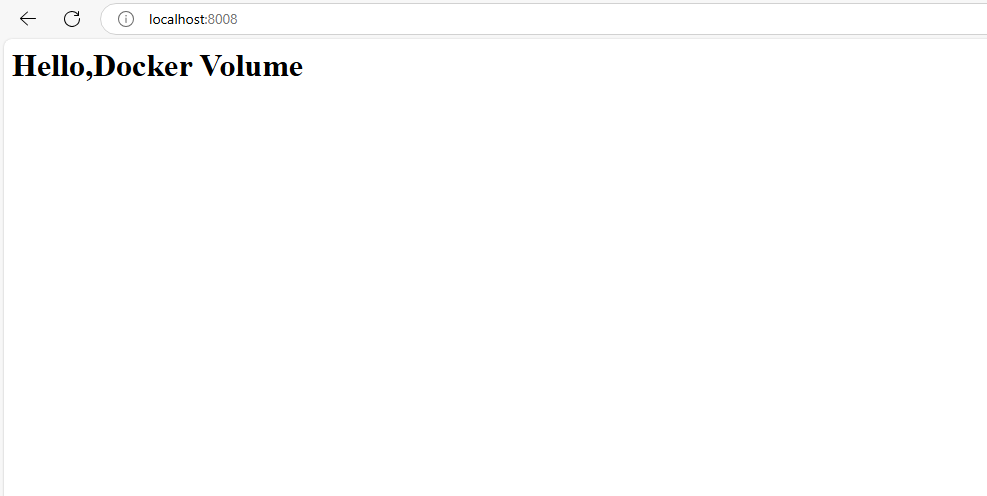
***exit***





*This command creates an HTML file inside the /usr/share/nginx/html directory, which is backed by my\_data\_volume.*

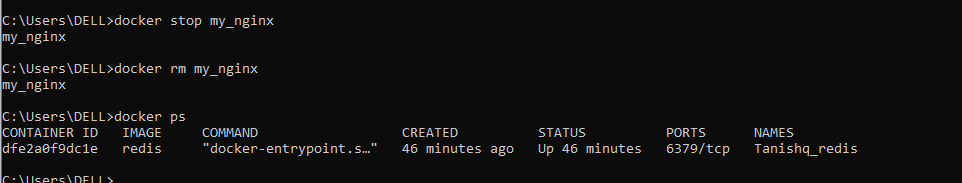
*Access the Nginx server to see your file: Open a browser and navigate to http://localhost:8008. You should see the message "Hello, Docker Volume!" displayed on the page.*



***Step 4: Test Data Persistence***

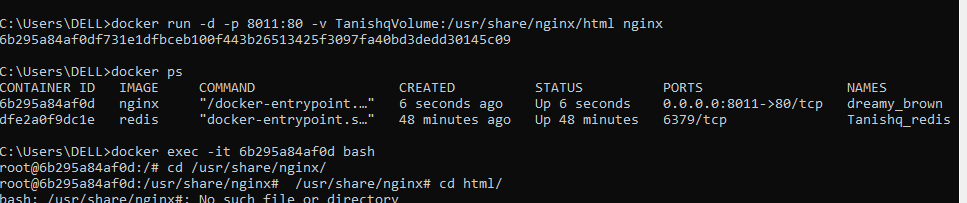
*Stop and remove the container:*

|  |
| --- |
| ***docker stop my\_nginx***  ***docker rm my\_nginx*** |

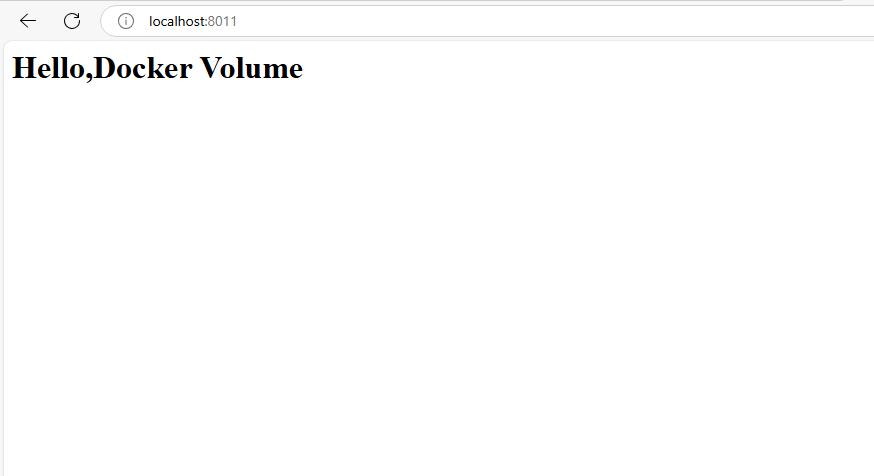


*Run a new Nginx container using the same volume:*

|  |
| --- |
| ***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.*



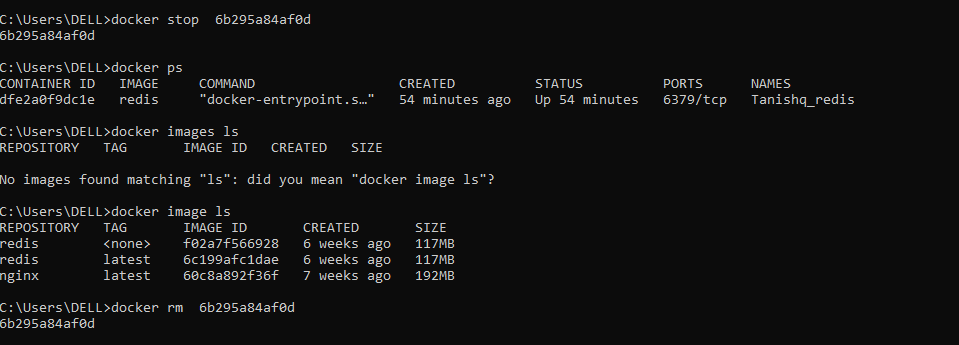
***Step 5: Clean Up***

*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.*

