**Lab Exercise 8: Docker Volume Backup and Restore**

**Objective:**

This lab will help you understand how to back up and restore data stored in Docker volumes. You will perform the following:

* Create and mount a Docker volume.
* Write data into the volume.
* Back up the volume to a .tar.gz file.
* Restore the volume from the backup file.

**Lab Setup Requirements:**

* Docker installed on your system.
* Basic knowledge of Docker containers and volumes.
* Internet access to pull Docker images.

**Step 1: Create a Docker Volume**

1. Open a terminal.
2. Run the following command:

docker volume create lab\_volume

1. Verify the volume was created:

docker volume ls

**Step 2: Create a Container and Write Data into the Volume**

1. Run a container that mounts the volume:

docker run -it --rm -v lab\_volume:/data ubuntu /bin/bash

1. Inside the container, write some data:

echo "This is a test file." > /data/testfile.txt

1. Exit the container:

exit

**Step 3: Back Up the Docker Volume**

1. Create a backup directory on your host machine:

mkdir -p ~/docker\_backups

1. Run a container to create a compressed backup archive:

docker run --rm \

-v lab\_volume:/data \

-v ~/docker\_backups:/backup \

ubuntu \

tar czf /backup/lab\_volume\_backup.tar.gz -C /data .

1. Verify the backup archive:

ls ~/docker\_backups/lab\_volume\_backup.tar.gz

**Step 4: Restore the Docker Volume**

**Simulate deletion:**

1. Remove the original volume:

docker volume rm lab\_volume

1. Recreate the volume:

docker volume create lab\_volume

**Restore from the backup:**

1. Use a container to extract the archive into the new volume:

docker run --rm \

-v lab\_volume:/data \

-v ~/docker\_backups:/backup \

ubuntu \

tar xzf /backup/lab\_volume\_backup.tar.gz -C /data

**Step 5: Validate the Restore**

1. Run a container again to access the volume:

docker run -it --rm -v lab\_volume:/data ubuntu /bin/bash

1. Check if the file exists:

cat /data/testfile.txt

You should see:

This is a test file.

1. Exit the container:

exit