Assignment: Deploying WordPress on Docker with Data Persistence and Separate Networks also using NFS for High Data availability

Objective:

The objective of this assignment is to understand how to deploy a WordPress website using Docker, ensuring data persistence using Docker Volumes and isolating the database and WordPress containers on separate networks.

Prerequisites:

1. Basic knowledge of Docker.
2. Docker installed on your machine.
3. Basic understanding of WordPress and MySQL.
4. Basic Knowledge of NFS

Steps to Complete the Assignment:

Create 2 vm on aws. 1 vm for nfs server hostname should be **nfs-server.com** and 2nd vm for docker host hostname should be **docker.com**.

Configure NFS server.

1. **Install NFS Utilities:**

   Install the required NFS packages.

2. **Start & enable nfs service and open 2049/tcp port in security group.**
3. **Create a Shared Directory:**

   Create a directory **`/wp_data`** **(to store wordpress data)with 777 permission** to share over NFS.

Create a directory **`/db_data`** **(to store mysql data)with 777 permission** to share over NFS.

4. **Edit the Exports File:**

   Configure the **`/etc/exports`** file to define the shared directory and set the access permissions with (rw,sync) only for docker host.

5. **Restart & enable nfs service.**

Configure Wordpress on Docker.

1. **Create Docker volumes**

   For wordpress container -> **`wp_vol`**

   For mysql container -> **`db_vol`**

2. **Mount the NFS Share:**

   Mount the NFS share to the created volumes (*/wp_data to wp_vol, /db_data to db_vol*).

   NOTE-> You have to find the path of volumes before mount.

3. **Create Docker Networks:**

   Create two Docker networks, one for the database (**`db_network`**) and one for the WordPress (**`wp_network`**) application.

4. **Pull mysql & wordpress images from docker registry to docker host.**
5. **Run the MySQL Container:**

Start a MySQL container connected to both the **`web_networ` and `db_network`.**

Container name should be **`mysql`.**

Mount **`db_vol`** volume to **`/var/lib/mysql`** on wordpress container.

Container should be in running state.

Give environment variable mysq_root_password as **redhat.**

6. **Switch on mysql container and create database & user for wordpress.**

   Username should be wp_user for all host.

   Database name should be wp_db and grant all privileges to wp_user.

7. **Run the WordPress Container:**

   Start a WordPress container connected to both the **`web_network` and `db_network`.**

   Container name should be **`wordpress`**

   Map host machine 80 port to container 80 post.

   Mount *wp_vol* volume to /var/www/html on wordpress container.

8. **Switch on mysql container and Modify `wp-config.php` file** such as database details**.**

   Copy **`wp-config-sample.php`** file as **`wp-config.php`**

   Update the following lines with your database information:

-> database name

-> database user

-> database user password

-> database host

9. Open 80/tcp port in security Group
10. Now open the browser and http://docker-host-public-IP