

AI-03070 Docker Database Postgresql MariaDB

Owner	Ⓜ Rigel Arcayan
Tags	Project
Created time	@October 12, 2025 7:58 PM

Build me a docker-compose file to create a shared Docker Postgresql database and include the init script and necessary.env file. Use a dockelab_net bridge network and include pdAdmin

Here's a **complete working setup** for a **shared PostgreSQL database with pgAdmin** using Docker Compose.

It includes:

- ✓ `docker-compose.yml`
- ✓ `.env` file for credentials
- ✓ `init.sql` for database initialization
- ✓ Shared network `dockerlab_net` (bridge)

Folder Structure

```
~/docker/postgres/  
├── docker-compose.yml  
├── .env  
├── init/  
│   └── init.sql
```

1. `docker-compose.yml`

version: "3.9"

networks:

dockerlab_net:
driver: bridge

services:

postgres:

image: postgres:16
container_name: postgres_db
restart: always
env_file:
- .env
ports:
- "5432:5432"
volumes:
- ./data:/var/lib/postgresql/data
- ./init:/docker-entrypoint-initdb.d
networks:
- dockerlab_net

pgadmin:

image: dpage/pgadmin4:8
container_name: pgadmin
restart: always
env_file:
- .env
ports:
- "5050:80"
depends_on:
- postgres
volumes:
- ./pgadmin_data:/var/lib/pgadmin

```
networks:  
- dockerlab_net
```

2. `.env`

```
# PostgreSQL environment  
POSTGRES_USER=admin  
POSTGRES_PASSWORD=StrongPassword123  
POSTGRES_DB=shared_db  
  
# pgAdmin environment  
PGADMIN_DEFAULT_EMAIL=admin@local.com  
PGADMIN_DEFAULT_PASSWORD=Admin123
```

3. `init/init.sql`

```
-- Initialization script for shared PostgreSQL database  
CREATE TABLE IF NOT EXISTS users (  
  id SERIAL PRIMARY KEY,  
  name VARCHAR(100),  
  email VARCHAR(100) UNIQUE NOT NULL,  
  created_at TIMESTAMP DEFAULT CURRENT_TIMESTAMP  
);  
  
INSERT INTO users (name, email) VALUES  
('Rigel Arcayan', 'rigel@example.com'),  
('Britta Arcayan', 'britta@example.com');
```

4. Commands to Run

```
cd ~/docker/postgres  
  
# Create the network (if not yet created)
```

```
docker network create dockerlab_net
```

```
# Launch containers
```

```
docker compose up -d
```

```
# View running containers
```

```
docker ps
```

```
# View logs (optional)
```

```
docker compose logs -f
```

5. Access Information

Service	URL / Host	Username / Email	Password
PostgreSQL	localhost:5432	admin	StrongPassword123
pgAdmin4	http://localhost:5050	admin@local.com	Admin123

When inside **pgAdmin**, register a new server:

- **Host:** postgres
- **Port:** 5432
- **Username:** admin
- **Password:** StrongPassword123

Would you like me to add **persistent backup rotation** (daily `.sql` dumps using a cron-like container)? It's useful for shared databases.

Build me a docker-compose file to create a shared Docker MariaDB database and include the init script and necessary.env file. Use dockerlab_net bridge network, include a phmyadmin to manage MariaDB

Here's a **complete setup** for a **shared Docker MariaDB database** with **phpMyAdmin**, using a **bridge network (dockerlab_net)**, an **init SQL script**, and a properly structured `.env` file.

Folder Structure

```
~/docker/mariadb/  
├── docker-compose.yml  
├── .env  
├── init/  
    └── init.sql
```

1. **.env** file

Create a `.env` file inside `~/docker/mariadb/` :

```
# MariaDB Environment  
MARIADB_ROOT_PASSWORD=supersecretroot  
MARIADB_DATABASE=shared_db  
MARIADB_USER=labuser  
MARIADB_PASSWORD=labpass  
  
# phpMyAdmin Environment  
PHPMYADMIN_PORT=8082  
  
# Docker network  
NETWORK_NAME=dockerlab_net
```

2. **docker-compose.yml**

Create this `docker-compose.yml` file inside `~/docker/mariadb/` :

```
version: "3.9"  
  
services:  
  mariadb:  
    image: mariadb:11.4  
    container_name: mariadb_server
```

```
restart: always
env_file: .env
environment:
  - MARIADB_ROOT_PASSWORD=${MARIADB_ROOT_PASSWORD}
  - MARIADB_DATABASE=${MARIADB_DATABASE}
  - MARIADB_USER=${MARIADB_USER}
  - MARIADB_PASSWORD=${MARIADB_PASSWORD}
ports:
  - "3306:3306"
volumes:
  - mariadb_data:/var/lib/mysql
  - ./init:/docker-entrypoint-initdb.d
networks:
  - ${NETWORK_NAME}
```

phpmyadmin:

```
image: phpmyadmin:latest
container_name: phpmyadmin_mariadb
restart: always
env_file: .env
environment:
  - PMA_HOST=mariadb
  - PMA_USER=${MARIADB_USER}
  - PMA_PASSWORD=${MARIADB_PASSWORD}
  - PMA_ARBITRARY=1
ports:
  - "${PHPMYADMIN_PORT}:80"
depends_on:
  - mariadb
networks:
  - ${NETWORK_NAME}
```

volumes:

mariadb_data:

networks:

```
${NETWORK_NAME}:  
driver: bridge
```



3. Example `init/init.sql`

This script runs automatically **on first container startup**.

```
CREATE TABLE IF NOT EXISTS users (  
  id INT AUTO_INCREMENT PRIMARY KEY,  
  name VARCHAR(100),  
  email VARCHAR(100),  
  created_at TIMESTAMP DEFAULT CURRENT_TIMESTAMP  
);  
  
INSERT INTO users (name, email) VALUES  
( 'Rigel Arcayan', 'rigel@example.com'),  
( 'Britta Arcayan', 'britta@example.com');
```



4. Commands to Run

```
cd ~/docker/mariadb/  
docker network create dockerlab_net  
docker-compose up -d
```



5. Access Points

Component	URL / Port	Description
phpMyAdmin	http://localhost:8082	Web UI to manage MariaDB
MariaDB client	<code>mysql -h 127.0.0.1 -P 3306 -u labuser -p</code>	CLI access



Notes

- The `init.sql` script only runs once — on the **first creation of the volume**.
- To reapply the init script, remove the volume:

```
docker-compose down -v
docker-compose up -d
```

- You can connect other Docker containers to the shared network (`dockerlab_net`) using:

```
networks:
  - dockerlab_net
```

Would you like me to **add a pgAdmin-style adminer** (lightweight web DB client alternative to phpMyAdmin) or just keep phpMyAdmin?