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**Below are steps to run Spring Boot, MySQL on two different Docker Containers and connect them…**

**Use below command to get list of networks:**

docker network ls

**How to create Network?**

docker network create --driver bridge basic-bridge

**Note:** basic-bridge is name of network we are creating, above. We need to put all docker containers(spring boot rest and mysql) in this network, so that, they can communicate with each other

**How to start running MySQL DB Container?**

docker run --name=mysql1 --network=basic-bridge -p 3306:3306 -e MYSQL\_ROOT\_PASSWORD=abcdef -d mysql/mysql-server

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* **MYSQL\_ROOT\_PASSWORD** - Set Password for the MySQL root user. This variable is mandatory.
* **MYSQL\_USER, MYSQL\_PASSWORD** - Create new MySQL user and Set user password. This is optional.
* **MYSQL\_DATABASE** - Create a New Database on startup. This is optional. If a user is created, the user will be granted superuser access to the database.
* **MYSQL\_ALLOW\_EMPTY\_PASSWORD** - If set to "yes", New container can start with empty root password.
* **MYSQL\_RANDOM\_ROOT\_PASSWORD** - If set to "yes", a random initial password for the root user will be created.

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**NOTE:** mysql1 is the name of this MySQL container, using this name spring boot app can connect to this database. Mysql1 is specified in application.properties file of spring boot app as shown below

spring.datasource.url = jdbc:mysql://mysql1:3306/test3

**How to connect to MySQL Db running on COntainer & make password and other changes:**

docker exec -t -i 7070bf5413a7 /bin/bash //this command start mysql prompt

Note: 7070bf5413a7 is container id of MySQL DB Container

mysql -uroot -pabcdef

**Note:** at this point if you are not aware of mysql pwd, get default initial pwd from mysql logs

Use mysql;

ALTER USER 'root'@'localhost' IDENTIFIED BY 'abcdef'; //to change password of root

update user set host=’%’ where user='root'; //to set root access from any machine

flush privileges;

GRANT ALL PRIVILEGES ON \*.\* TO 'root'@'%' WITH GRANT OPTION;

//create test3 database or whichever required

**How to create & start running spring boot app image?**

**NOTE:** Use below command to create jar, if any error during unit test in connecting to new db host

mvn package -Dmaven.test.skip=true

docker build . -t sundayimage2 //create Image

docker run --name=rest-backend --network=basic-bridge -p 8090:8080 -d sundayimage2

**Start accessing from Browser?**

http://192.168.99.100:8090/user/10

**TROUBLESHOOTING:**

**How to Troubleshoot?**

Observe the logs of spring boot app container & mysql container, using below command

docker logs <container\_id>

From logs observe if exception or any failures & reasons for the same

**POssible reasons for failure:**

* Springboot app might have shutdown as its not accessing db,, check logs for exceptions
* Due to hostname constraints, from where root can log in(steps are provided in above sections to resolve this problem)
* Mismatch in MySQL version and mysql-container version

**Some reference URLS:**

<https://ordina-jworks.github.io/docker/2017/12/15/Docker-basic-networking.html>

<https://support.plesk.com/hc/en-us/articles/213361969-Error-adding-an-external-database-server-Host-is-not-allowed-to-connect-to-this-MySQL-server>

<https://www.howtogeek.com/howto/programming/mysql-give-root-user-logon-permission-from-any-host/>

<https://severalnines.com/blog/mysql-docker-single-host-networking-mysql-containers>

<https://stackoverflow.com/questions/28389458/execute-mysql-command-from-the-host-to-container-running-mysql-server>

<https://hub.docker.com/r/mysql/mysql-server>

How to DOckerize Angular App:

https://github.com/mringer/DockerNgHttpd