Docker Volume Mounting to deploy war into container

Abstract

This documents provides step by step procedure to create tomcat image with required configuration files using Dockerfile.

Using the image created we write a docker-compose file to create and run tomcat and mysql containers with proper volume mounting to deploy our application inside the tomcat container and store application data inside the mysql container instead of localhost.

Contents

Prerequisites

- Install Docker on your VM. (For step by step procedure to install docker refer “LoadBalancing” doc).
- Allow required ports such as 8081/8082/3306 etc…
- Allow the same ports on the server side of your Azure/Amazon VM so that these ports can be accessed from outside.

Dockerfile to create tomcat image

Before creating this image copy two required configuration files “context.xml” and “tomcat-users.xml” into the folder where dockerfile is to be created.

Configure these files according to your requirements (Username and Password for manager app etc…).

You can find these files in these locations

- $CATALINA_HOME/conf/tomcat-users.xml
- $CATALINA_HOME /webapps/manager/META-INF/context.xml

Once you are done with this open up your favorite editor and paste the following code

```
FROM tomcat

MAINTAINER <usern-ame>

RUN apt-get update && apt-get -y upgrade

WORKDIR /usr/local/tomcat


COPY tomcat-users.xml /usr/local/tomcat/conf/tomcat-users.xml

COPY context.xml /usr/local/tomcat/webapps/manager/META-INF/context.xml


EXPOSE 8080
```

Save the file under the name **Dockerfile**

Build the docker file to create a custom tomcat image by running the following command.

$docker build .

This will create a tomcat custom image you can modify the file to give the image a name/tag of your choice. The above file will create an image without a name or tag.

Note down the image id of the image created to be used later.

Docker-compose file to create containers

Once the tomcat image is created we can use this to create containers. We are going to write a docker-compose file in YAML format to create tomcat container with volume mounting and mysql container with root password to be used for deploying our application.

Open up your favorite editor an type the following code

```
db:
  image: mysql
  container_name: <MqSQL container name>
  environment:
   MYSQL_ROOT_PASSWORD: <Your password>

web:
  image: <tomcat image id>
  container_name: <tomcat container name>
  ports:
        - "8081:8080"
  volumes:
        - /opt/tomcat/webapps:/usr/local/tomcat/webapps
  links:
        - db
```

Make sure you change the volume mount source path according to your desired folder where you want to keep your war files.

If you notice I have used 8081 host port to access the container's 8080 port on which the tomcat server runs. You can use any port available.

Save the file under the name **docker-compose.yml**

Run the docker compose file by running the command

docker-compose up

In your projects configuration files make sure you change the mysql url from localhost to containers ip address. To get the IP address of the mysql container run the **docker inspect** command on the container.

Also change the root password to the one specified by you in the docker-compose file.