**Online Test Management System**

**Step1: Start AWS Resources**

* Start EC2 Instance
* Start RDS Instance
* Start S3 Instance

**Step2: Configure Spring and Angular Projects**

* Added “\*” inside *@CrossOrigins*
* Replaced “*localhost*” inside angular’s service methods with “window.location.hostname” to automatically call the EC2 server instance’s IP address while calling RestFul services. This takes care of the changing dynamic IP of the EC2 instance. This way we don’t have to manually change our URLs inside angular each time we restart our EC2 server
* Test RDS connection using HeidiSQL.
* Update *application.properties* and change the database settings as per your RDS configuration.

**Step3: Upload SpringRestful jar file and Angular’s zip file (Without node modules) to S3 bucket**

* Upload files to S3 bucket and make sure to grant access to everyone so that the files can be downloaded into our EC2 instances.

**Step4: Connect to the EC2 instance using Putty**

**Step5: Configure docker**

1. *sudo su* to get admin/root access
2. *yum docker install* to install docker into your ec2 instance.

**Angular Image Creation:**

1. Now, download the angular zip file from your S3 instance using the command *wget <URL>*
2. Extract the zip file using *unzip <zipname>.zip*
3. *cd <zipname>* to change the current directory to the folder created after unzipping your angular zip file.
4. Now, create a dockerfile using the command *vi Dockerfile* and paste the following code inside it:

#Install nodejs v10.16 in the container/image

***FROM node:10.16***

#make a directory

***RUN mkdir /usr/src/app***

#make the created directly as your working directory for the RUN commands

***WORKDIR /usr/src/app***

#install angular cli in workdir

***RUN npm install –g @angular/cli***

#Copy your files from the current directory into workdir

***COPY . .***

#Install all angular dependencies (node\_modules)

***RUN npm install***

#Command to be executed on calling docker run

***CMD ng serve –host 0.0.0.0***

1. *docker build –t <imagename>* this will now create a docker image of your angular application by the name you specify.
2. *docker run –p angularport:dockerport <imagename>* will now run your docker image into the container. The port command is to link your docker port with your ec2 port and expose it so that it will be accessible.

Similarly for Spring, create a separate folder and change current directory into it and follow the following steps:

1. wget <url> to get your .jar file of your spring project
2. Now create a docker file using *vi Dockerfile* and add the following code:

#Get runtime java environment

***FROM java:8***

#add the jar file into your docker container

***ADD <jarname>.jar <jarname>.jar***

#Command to execute when calling docker run

***CMD java –jar <jarname>.jar***

1. *docker build –t <imagename>* to create docker image of your spring application.
2. *docker run –p springport:dockerport <imagename>* to start your docker image containing the spring application.

And that’s it! Both docker containers are running. You can check that using the command ***docker container ls*** or ***docker ps***