**Docker**

Docker is a platform for developers to develop, deploy and run applications with a container. The use of Linux containers to deploy applications is called containerization. Containers are Flexible, Lightweight, Interchangeable, Portable, Scalable and Stackable.

**Installation**

Go to the URL: <https://docs.docker.com/install/> and select the platform of your choice then follow installation process.

**Test Docker Installation**

Open a command prompt

docker run hello-world

Unable to find image 'hello-world:latest' locally

latest: Pulling from library/hello-world

ca4f61b1923c: Pull complete

Digest: sha256:ca0eeb6fb05351dfc8759c20733c91def84cb8007aa89a5bf606bc8b315b9fc7

Status: Downloaded newer image for hello-world:latest

Hello from Docker!

This message shows that your installation appears to be working correctly.

...

**N.B. To avoid permission error, use ‘sudo’**

**List Docker image**

docker image ls

List of all images should show in your console

**List Docker container**

docker container ls

This will list all available containers

**Containerizing Message Manager**

1. Clone message manager from git:

URL: <http://rrsbitbucket.rrs.co.za:7990/projects/GPET/repos/webmm/browse?at=refs%2Fheads%2FDocker>

1. Navigate to “BackEnd Directory”

webmm/Source/BackEnd/

1. Build MMS Docker Image

docker build - -tag=image\_name .

* Image name can be any name, eg. mms1, mms2, teekay etc.
* Do not forget the dot (.) at the end of line

1. List docker image to check if your image is successfully created.

docker image ls

1. Run built image

You must have SICD directory and recordedMessages.json file

recordedMessages.json file content

{}

docker run --volume SICD/absolute/path:/app/SICD --volume jsonFile/absolute/path:/app/Structure/recordedMessages.json -p 4000:80 image\_name

docker run --volume /home/rrs/Desktop/Test/SICD:/app/SICD --volume /home/rrs/Desktop/Test/recordedMessages.json:/app/Structure/recordedMessages.json -p 4000:80 image\_name

Example

Host directory Absolute SICD path:   
/home/rrs/Desktop/MessageManager/webmm/SICD

Host Absolute jsonFile path :  
/home/rrs/Desktop/Test/recordedMessages.json

docker run --volume /home/rrs/Desktop/Test/SICD:/app/SICD --volume /home/rrs/Desktop/Test/recordedMessages.json:/app/Structure/recordedMessages.json -p 4000:80 image\_name

for more info: <https://github.com/moby/moby/issues/30647#issuecomment-276882545>

If a Daemon Error occurs, restart Damon and Docker:

* sudo systemctl daemon-reload
* sudo systemctl restart docker

**Deploying the App**

**Save the App**

docker save -o <TAR\_FILE> <IMAGE>

e.g.: docker save -o mms.tar mms

**Loading and running the App**

1. Loading image from tar file:

docker image load -i mms.tar

1. Run container:

docker run --volume /home/rrs/Desktop/Test/SICD:/app/SICD --volume /home/rrs/Desktop/Test/recordedMessages.json:/app/Structure/recordedMessages.json -p 4000:80 image\_name