**Docker Engine - windows**

* Windows Optinalfeatures >>enable windows subsystem for linux >> download docker for windows & install
* For linux google it we will get the steps 1 by 1 we need to follow it to install docker engine on linux  
    
   **Dockerfile**
* Open linux docker host >> mkdir folder >> navigate to that folder >> vi Dockerfile   
  **FROM ubuntu: 18.04  
  LABEL maintainer="ravi.uriti5**[**@gmail.com**](mailto:thecloudspoc@gmail.com)**"  
  RUN apt-get update && apt-get -y install apache2  
  EXPOSE 80  
  ENTRYPOINT ["/usr/sbin/apachectl"]  
  CMD ["-D", "FOREGROUND"]**
* Docker build -t username/somename . : which takes the docker file from the current directory and builds the docker image with it.
* Docker run -dt –name somename -p 8081:80 imagename : which is used to create a container with the existing image set by docker file  
   **FROM ubuntu: 18.04  
  LABEL maintainer="ravi.urti5**[**@gmail.com**](mailto:thecloudspoc@gmail.com)**"  
  RUN apt-get update && apt-get -y install apache2  
  EXPOSE 80  
  ENTRYPOINT ["/usr/sbin/apachectl"]  
  CMD ["-D", "FOREGROUND"]  
  COPY index.html /var/www/html/index.html  
  VOLUME /var/www/html**
* Docker build -t username/somename . : which takes the docker file from the current directory and builds the docker image with it.
* Docker run -dt –name somename -p 8082:80 imagename : which is used to create a container with the existing image set by docker file

Multi container app using

* git clone<https://github.com/narayanacharan/mer>  
  **docker** network create library-mern-api   
  **docker** volume create mongodb-data   
  **docker** run -dit -p 27017:27017 -e MONGO\_INITDB\_ROOT\_USERNAME=admin -e MONGO\_INITDB\_ROOT\_PASSWORD=password -e PWD=/ -v mongodb-data:/data/db --name mern\_library\_nginx\_mongodb\_1 --net library-mern-api mongo   
  **docker** run -dit -p 8081:8081 -e ME\_CONFIG\_MONGODB\_ADMINUSERNAME=admin -e ME\_CONFIG\_MONGODB\_ADMINPASSWORD=password --net library-mern-api --name mern\_library\_nginx\_mongo-express\_1 -e ME\_CONFIG\_MONGODB\_SERVER=mern\_library\_nginx\_mongodb\_1 -e ME\_CONFIG\_BASICAUTH\_USERNAME=admin -e ME\_CONFIG\_BASICAUTH\_PASSWORD=admin123456 mongo-express   
    
  **docker** run -dit -p 5000:5000 -e MONGO\_URI=mongodb://admin:password@mern\_library\_nginx\_mongodb\_1 -e NODE\_ENV=development -e PWD=/app -v "$(pwd)":/app -v "$(pwd)"/node\_modules:/app/node\_modules --net library-mern-api --name library\_mern\_nginx mern\_library\_nginx\_library-api  
  **docker** run -d -v "$(pwd)":/app -v "$(pwd)"/node\_modules:/app/node\_modules --net library-mern-api --name library\_mern\_frontend mern\_library\_nginx\_client   
  **docker** run -d -p 8080:80 --name mern\_library\_nginx\_nginx\_1 --net librarymern-api mern\_library\_nginx\_nginx  
    
   **Docker Swarm**
* Docker swarm init –advertise-addr ipaddress we need to run it on manager node one of the join command will be generated after the initialization it   
  We need to run that join command on the worker node
* Docker service create –name Helloworld alpine ping docker.com : to create the individual docker service node  
  Docker service ls : to check the services with in the docker.
* Docker stack deploy -c docker-compose.yml mern\_stack : its to deploy the stack  
   GUI docker swarm installation command   
  docker run -it --rm \
* --name swarmpit-installer \
* --volume /var/run/docker.sock:/var/run/docker.sock \
* swarmpit/install:1.9