**SourceCode**

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*Docker installation on Ubuntu OS \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

* sudo apt-get update
* sudo apt-get install ca-certificates curl gnupg lsb-release
* curl -fsSL https://download.docker.com/linux/ubuntu/gpg | sudo gpg --dearmor -o /usr/share/keyrings/docker-archive-keyring.gpg
* echo "deb [arch=$(dpkg --print-architecture) signed-by=/usr/share/keyrings/docker-archive-keyring.gpg] https://download.docker.com/linux/ubuntu $(lsb\_release -cs) stable" | sudo tee /etc/apt/sources.list.d/docker.list > /dev/null

\*\*\*\*\* Install Docker Engine \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

* sudo apt-get update
* sudo apt-get install docker-ce docker-ce-cli containerd.io

\*\*\*\*\*\*\*\*\* let's check docker installed or not \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

* sudo docker -v or sudo docker --version
* sudo docker info

\*\*\*\*\*Initializing docker swarm\*\*\*\*\*\*\*\*\*\*\*\*\*

* docker swarm init

(it will make my node as manager node and give one command, if you execute that command on another instance --> that instance will connect to your manager node as worker.)

once swarm initialized check the running node

* docker node ls

Let's run the service on docker swarm

* docker service create -p 80:80 --name webserver myimage
* docker service ls (check running service)
* curl localhost:80

\*\*\*\*\*\* Scale the container with Docker swarm \*\*\*\*\*\*\*\*\*\*\*

* docker service scale webserver=3

(this will scale your service with 3 services running)

to check service running

* docker service ls

to check howmany same services running

* docker service ps webserver

(you will be able to see 3 running services)

\*\*\*\*\*\*\*\*\*\*\*\*\*\*Jenkin Installation\*\*\*\*\*\*\*\*\*\*

* curl -fsSL https://pkg.jenkins.io/debian-stable/jenkins.io.key | sudo tee /usr/share/keyrings/jenkins-keyring.asc > /dev/null

* echo deb [signed-by=/usr/share/keyrings/jenkins-keyring.asc] https://pkg.jenkins.io/debian-stable binary/ | sudo tee /etc/apt/sources.list.d/jenkins.list > /dev/null

* sudo apt-get update

* sudo apt-get install jenkins

\*\*\*\*\*Start jenkins service\*\*\*\*\*

* sudo service jenkins start

\*\*\*\*\*To check jenkins service\*\*\*\*\*

* sudo service jenkins status