How to Setup a 3 Node Docker Swarm on Ubuntu 18

# Installing Docker:

1. Run the following on all 3 Nodes as the root user:

Use command to switch to root user: sudo su -

$ apt-get update && apt-get upgrade -y

$ apt-get remove docker docker-engine -y

$ apt-get install apt-transport-https ca-certificates curl gnupg2 software-properties-common python-setuptools -y

$ curl -fsSL https://download.docker.com/linux/ubuntu/gpg | sudo apt-key add -

$ add-apt-repository "deb [arch=amd64] https://download.docker.com/linux/ubuntu $(lsb\_release -cs) stable"

$ apt-get update

$ apt-get install docker-ce -y

$ systemctl enable docker

$ systemctl restart docker

$ easy\_install pip

$ pip install docker-compose

$ usermod -aG docker <your-user>

**Note**: Easy\_install might not work on ubuntu 18.04 use:

apt-get install python-pip

# Testing:

1. Test Docker by running a Test Container

$ docker --version

$ docker-compose --version

$ docker run hello-world

1. Add the host entry data into the /etc/hosts files on each node using:

vi /etc/hosts

$ cat /etc/hosts

172.31.18.90 manager

172.31.20.94 worker-1

172.31.21.50 worker-2

# Initialize the Swarm:

1. Now initialize the swarm on the manager node and as we have more than one network interface, we will specify the --advertise-addr option:

[manager] $ docker swarm init --advertise-addr 172.31.18.90

Swarm initialized: current node (siqyf3yricsvjkzvej00a9b8h) is now a manager.

To add a worker to this swarm, run the following command:

docker swarm join \

--token SWMTKN-1-0eith07xkcg93lzftuhjmxaxwfa6mbkjsmjzb3d3sx9cobc2zp-97s6xzdt27y2gk3kpm0cgo6y2 \

172.31.18.90:2377

To add a manager to this swarm, run 'docker swarm join-token manager' and follow the instructions.

1. If this is a scenario where you would like to add more than one manager, then run the above command to add more managers.

# Join the Worker nodes to the Manager:

1. Now, to join the worker nodes to the swarm, run the docker swarm join command that was received in the swarm initialization step above:

[worker-1] $ docker swarm join --token SWMTKN-1-0eith07xkcg93lzftuhjmxaxwfa6mbkjsmjzb3d3sx9cobc2zp-97s6xzdt27y2gk3kpm0cgo6y2 172.31.18.90:2377

This node joined a swarm as a worker.

1. And to join the second worker to the swarm:

[worker-2] $ docker swarm join --token SWMTKN-1-0eith07xkcg93lzftuhjmxaxwfa6mbkjsmjzb3d3sx9cobc2zp-97s6xzdt27y2gk3kpm0cgo6y2 172.31.18.90:2377

This node joined a swarm as a worker.

1. To see the node status, so that we can determine if the nodes are active/available etc, from the manager node, list all the nodes in the swarm:

[manager] $ docker node ls

ID HOSTNAME STATUS AVAILABILITY MANAGER STATUS

j14mte3v1jhtbm3pb2qrpgwp6 worker-1 Ready Active

siqyf3yricsvjkzvej00a9b8h \* master Ready Active Leader

srl5yzme5hxnzxal2t1efmwje worker-2 Ready Active

1. If at any time, you lost your join token, it can be retrieved by running the following for the manager token:

$ docker swarm join-token manager -q

SWMTKN-1-67chzvi4epx28ii18gizcia8idfar5hokojz660igeavnrltf0-09ijujbnnh4v960b8xel58pmj

1. And the following to retrieve the worker token:

$ docker swarm join-token worker -q

SWMTKN-1-67chzvi4epx28ii18gizcia8idfar5hokojz660igeavnrltf0-acs21nn28v17uwhw0oqg5ibwx

1. At this moment, there are no services running in the swarm:

[manager] $ docker service ls

ID NAME MODE REPLICAS IMAGE

1. Follow the tutorial to deploy PTS containers as services in the swarm

# Reference:

* [**https://sysadmins.co.za/setup-a-3-node-docker-swarm-on-ubuntu-16/**](https://sysadmins.co.za/setup-a-3-node-docker-swarm-on-ubuntu-16/)
* [**https://sysadmins.co.za/docker-swarm-getting-started-with-a-3-node-docker-swarm-cluster-with-a-scalable-app/**](https://sysadmins.co.za/docker-swarm-getting-started-with-a-3-node-docker-swarm-cluster-with-a-scalable-app/)