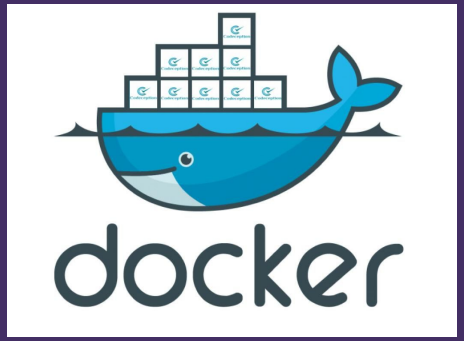
Docker



Hello!

I am Sandeep Anuragi

I am here because I love to do docker Integration.

You can find me at blackmagiclinux@gmail.com

1.

Docker Swarm Orchestration ?

Let’s start with the first set of slides

Docker has been at the leading edge of containerized technologies with its open source Community Edition and is steadily building features around it. Docker Swarm is the docker native clustering solution that turns a pool of Docker hosts into a single virtual server allowing clustering with the built-in Swarm orchestration.

2.

Getting started with Swarm mode

Set up

To run this tutorial, you need the following:

-
- the IP address of the manager machine
- open ports between the hosts

Understanding containers

- Three linux hosts which can communicate over a network, with docker installed
- The IP Address of the manager machine
- Open Ports between the hosts

Install Docker Engine on Linux machines

If you are using Linux based physical computers or cloud-provided computers as hosts, simply follow the Linux install instructions for your platform. Spin up the three machines, and you are ready. You can test both single-node and multi-node swarm scenarios on Linux machines.

Use Docker Desktop for Mac or Docker Desktop for Windows

Alternatively, install the latest Docker Desktop for Mac or Docker Desktop for Windows application on one computer. You can test both single-node and multi-node swarm from this computer, but you need to use Docker Machine to test the multi-node scenarios.

- You can use Docker Desktop for Mac or Windows to test *single-node* features of swarm mode, including initializing a swarm with a single node, creating services, and scaling services.
- Currently, you cannot use Docker Desktop for Mac or Docker Desktop for Windows alone to test a *multi-node* swarm, but many examples are applicable to a single-node Swarm setup.

The IP address of the manager machine

The IP address must be assigned to a network interface available to the host operating system. All nodes in the swarm need to connect to the manager at the IP address.

Because other nodes contact the manager node on its IP address, you should use a fixed IP address.

You can run `ifconfig` on Linux or macOS to see a list of the available network interfaces.

If you are using Docker Machine, you can get the manager IP with either `docker-machine ls` or `docker-machine ip <MACHINE-NAME>` — for example, `docker-machine ip manager1`.

The tutorial uses `manager1 : 192.168.99.100`.

Who is Docker for?

Open protocols and ports between the hosts:

The following ports must be available. On some systems, these ports are open by default.

- **TCP port 2377** for cluster management communications
- **TCP** and **UDP port 7946** for communication among nodes
- **UDP port 4789** for overlay network traffic

If you plan on creating an overlay network with encryption (`--opt encrypted`), you also need to ensure **ip protocol 50 (ESP)** traffic is allowed.

Docker Swarm on Ubuntu

Docker Swarm is a clustering tool that turns a group of Docker hosts into a single virtual server. Docker Swarm ensures availability and high performance for your application by distributing it over the number of Docker hosts inside a cluster. Docker Swarm also allows you to increase the number of container instance for the same application. Clustering is an important feature of container technology for redundancy and high availability. You can manage and control clusters through a swarm manager. The swarm manager allows you to create a primary manager instance and multiple replica instances in case the primary instance fails. Docker Swarm exposes standard Docker API, meaning that any tool that you used to communicate with Docker (Docker CLI, Docker Compose, Krane, and Dokku) can work equally well with Docker Swarm. Features of Swarm Mode:

Thanks For Join Us

blackmagiclinux@gmail.com

Are you Ready to face of challenges

Comment and Survey fo this course