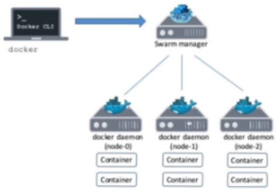
Docker Swarm Work

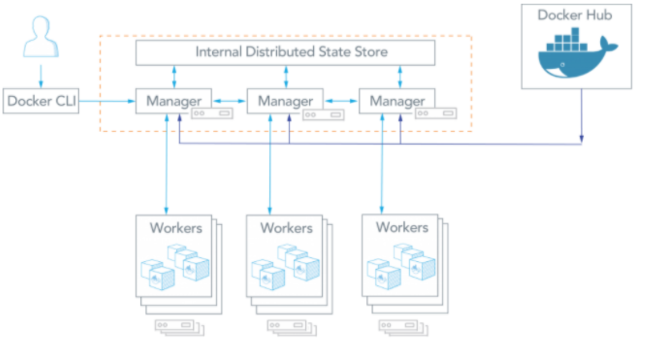
How Docker Swarm Mode works?

- Swarm Mode enables to **deploy containers** across multiple Docker hosts, using **overlay networks** for *service discovery* with a built-in **load balancer** for *scaling* the services.
- Swarm Mode is managed as part of the Docker CLI, making it a seamless experience to the Docker ecosystem.

Docker Swarm



> Docker Engine v1.12.0 and later allow developers to deploy containers in Swarm mode. A Swarm cluster consists of Docker Engine deployed on multiple nodes. Manager nodes perform orchestration and cluster management. Worker nodes receive and execute tasks from the manager nodes.



Manager: a node that dispatches tasks
Worker: a node that executes tasks provided by a Manager
Internal Distributed Store: used to maintain cluster state

Docker CLI: User interacts with the swarm using Docker CLI, for example "docker service"
Docker Hub: contains repositories for downloading and sharing container images

> Docker Swarm architecture consists of managers and workers.

User can declaratively specify the desired state of various services to run in the Swarm cluster using YAML files. Here are some common terms associated with Docker Swarm:

Node: A node is an instance of a Swarm. Nodes can be distributed on-premises or in public clouds. A Node is an instance of the Docker Engine connected to the Swarm. Nodes are either managers or workers. Managers schedules which containers to run where. Workers execute the tasks. By default, Managers are also workers.

Swarm: a cluster of nodes (or Docker Engines). In Swarm mode, you orchestrate services, instead of running container commands.

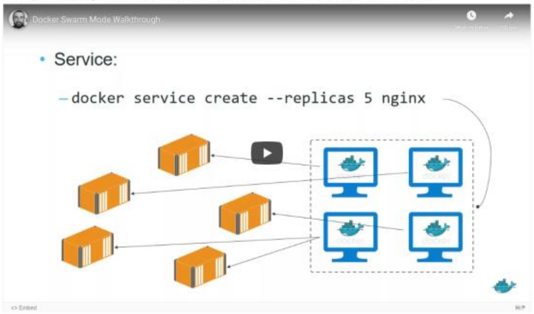
Manager Nodes: These nodes receive service definitions from the user, and dispatch work to worker nodes. Manager nodes can also perform the duties of worker nodes.

Worker Nodes: These nodes collect and run tasks from manager nodes.

Service: A service specifies the container image and the number of replicas. A service is a high-level concept relating to a collection of tasks to be executed by workers. An example of a service is an HTTP Server running as a Docker Container on three nodes.

Load Balancing: Docker includes a load balancer to process requests across all containers in the service.

Complementary Interactive Lesson about How Does Docker Swarm Work



Docker Swarm Mode Walkthrough

- Service:
  - docker service create --replicas 5 nginx