

Docker Essential Concepts

Docker uses containers to deploy and run applications.

A **Dockerfile** contains installation and execution instructions for applications, their OS environment etc. Frequently, a one-to-one correspondence is maintained between a single application and a single Dockerfile.

When a Dockerfile is built, a **Docker Image** results.

When executed (in Docker), the in-memory version of a Docker image becomes a **Docker container**.

A **Docker Service** codifies how a Docker container runs - number of instances etc.(usually for a single application).

A **Docker Stack** typically manages multiple related services.

A **Docker docker-compose.yml** file contains the rules for loading, scaling one or more Docker Services.

A **Docker Swarm** is a group of Docker host machines joined in a cluster of nodes. The docker swarm has **manager** and **worker** nodes. Generally separate hosts are assigned as managers and workers, though the same host can function in both roles.

Manager nodes manage, distribute, balance etc. the services (containers) across the **worker nodes** according to service definitions.