

What is Docker?

Docker is an open platform for developing, shipping and running applications.

Docker enables you to separate your applications from your infra so you can deliver software quickly.

With docker, you can manage your infra in the same way as you manage your applications.

By taking advantage of Docker's methodologies for shipping, testing and deploying code quickly, you can significantly reduce the delay between writing code and running it in production.

Docker Platform

- Docker provides the ability to package and run an application in a loosely isolated environment called a container.
- The isolation and security allows you to run many containers simultaneously on a given host.
- Containers are lightweight and contain everything needed to run the application, so you don't need to rely on what is currently installed on the host.
- You can easily share containers while you work, and be sure that everyone you share with gets the same container that works in the same way.

Docker provides tooling and a platform to manage the lifecycle of your containers.

- Develop your application and its supporting components using containers.
- The container becomes the unit for distributing and testing your application.
- When you're ready, deploy your application into your production environment, as a container or an orchestrated service.
- This works the same whether your production environment is local data center, a cloud provider or hybrid of two.

Docker Swarm

- Docker Swarm is a container orchestration tool, meaning that it allows the user to manage multiple containers deployed across multiple host machines.
- One of the key benefits associated with the operation of a docker swarm is the high level of availability offered for applications.
- Docker Swarm is an open-source container orchestration platform built and maintained by Docker. Under the hood, Docker Swarm converts multiple Docker instance into a single virtual host. A Docker Swarm cluster generally contains three items.
 - Nodes
 - Services and Tasks
 - Load Balancers

Nodes are individual instances of the Docker Engine that control your cluster and manage the containers used to run your services and tasks.

Docker Swarm cluster also includes load balancing route requests across nodes.