

Docker Swarm

Raúl Estrada

Octubre 2020

Docker Swarm

As we have seen in previous chapters, Docker is a fantastic tool that follows the most modern architectural principles used for running applications packed as containers. In this case, Docker Swarm runs only Docker containers, ignoring other technologies that, at the moment, are not suitable for production, such as Rkt. Even Docker is quite new to the scene up to a point that some companies hesitate in deploying it in their production systems, as there is not so much expertise in the market as well as many doubts about security or how Docker works in general.

Docker Swarm is the clustered version of Docker, and it solves the problem described in the previous section in a very simple manner: pretty much all the docker commands that you learned in the Docker chapter works in Docker Swarm so that we can federate our hardware without actually taking care of the hardware itself. Just add nodes to the pool of resources and Swarm will take care of them, leveraging the way we build our systems to purely containers.

Docker Swarm is not something that we need to install aside from the Docker engine: it comes embedded into it and it is a mode rather than a server itself.

Docker Swarm is evolving quite quickly and it is dragging Docker itself along as more and more features are being baked into it due to its usage in the Swarm mode. The most interesting part of this is how we can leverage our Docker knowledge into it without any extra as the swarm mode of our Docker engine takes care of the resources.

This is also a problem: we are limited by the Docker API, whereas with Kubernetes (we will come back to it in a second), we are not only limited by the Docker API, but we can also extend the Kubernetes API to add new objects to fulfill our needs.

Docker Swarm can be operated through `docker-compose` (up to a certain extent), which provides a decent approach to infrastructure as code but is not very comprehensive when our application is somehow complex.

In the current IT market, Kubernetes seems to be the clear winner of the orchestration battle, and as such, we are going to focus on it, but if you want to learn more about Docker Swarm, the official documentation can be found at <https://docs.docker.com/engine/swarm/>.