The Automation of Infrastructure Orchestration and Application Deployment using Ansible and Docker Swarm

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Title: The Automation of Infrastructure Orchestration and Application Deployment using Ansible and Docker Swarm

Introduction: Application deployment is becoming ever-increasingly complicated. This research paper aims to look at modern tools such as Ansible and Docker Swarm to see how they can aid in deployment.

Objectives: The objective of this research paper is to show how a modern automation tool such as Ansible can be used to provision and orchestrate the application cluster.

Some tasks it will be used to carry out are:

- Deployment of application servers
- Provisioning of the above servers
- Deployment of the application to the servers

Another aim of this research paper is to show how Docker, and more specifically Docker Swarm, can be used to deploy an application to a cluster of servers.

Some tasks it will be used to carry out are:

- Creating a single point of contact with multiple application servers for easy management
- Creating an application that runs inside a container
- Creating a fault-tolerant application
- Easy scaling

The overall architecture of this system can be seen below in Figure 1.

Outcome: The outcome of this research paper will be an application which is fully distributed across multiple servers, is fault-tolerant and can be scaled reliably which has been completely deployed using the automation tool Ansible.

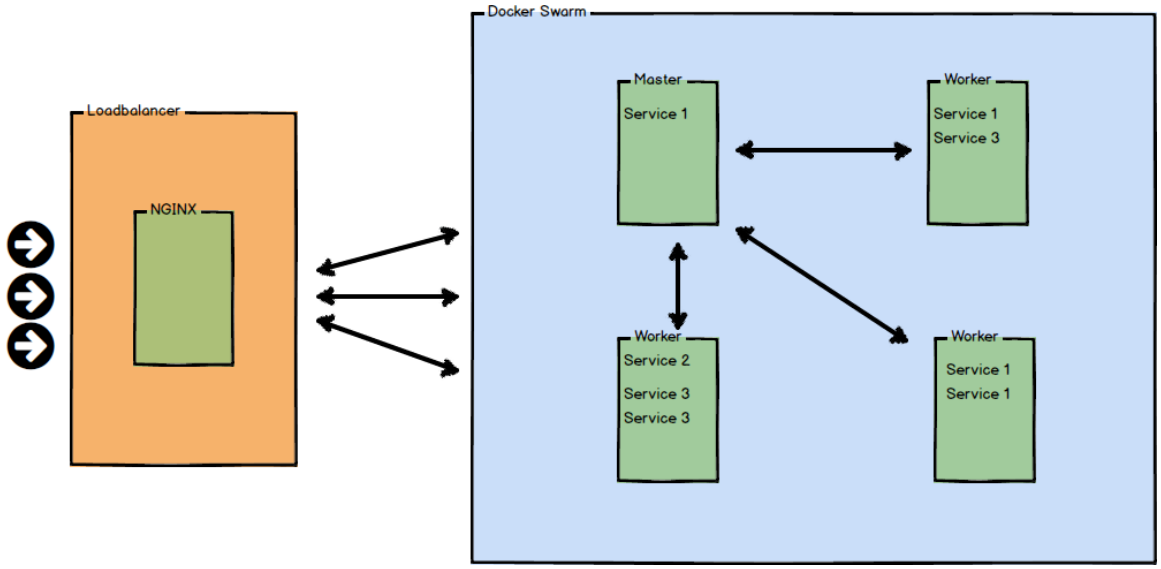

Figure 1: *A Docker Swarm with a Loadbalancer handling requests*