Performance overhead of CO frameworks for multi-tenant database deployments

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Summer term 2020

1 Introduction

The paper promises to look into the production assessment of Docker engine in the current accentuation and industry acquisition of Container Orchestration(CO) framework. Like Docker Swarm and Kubernetes for the motive of spontaneous placement of cloud based features. Specifically when to manage a CPU bound CPU-bound Cassandra workload in Open Stack.

2 Comparison between Docker Engine and Virtual IP networking

In Contrast to to open stack deployment Docker Engine deployment in host mode reveals minor performance overhead.

3 Architecture for running multi node Cassandra Cluster with Swarm Cluster and Kubernetes

Docker multi-host networking allows the containers to easily span multiple machines and parallelly makes it able to access containers by name over the same isolated network. Docker swarm is a container orchestration tool which allows user to manage multiple containers those are deployed across multiple host machines. Figure 1.

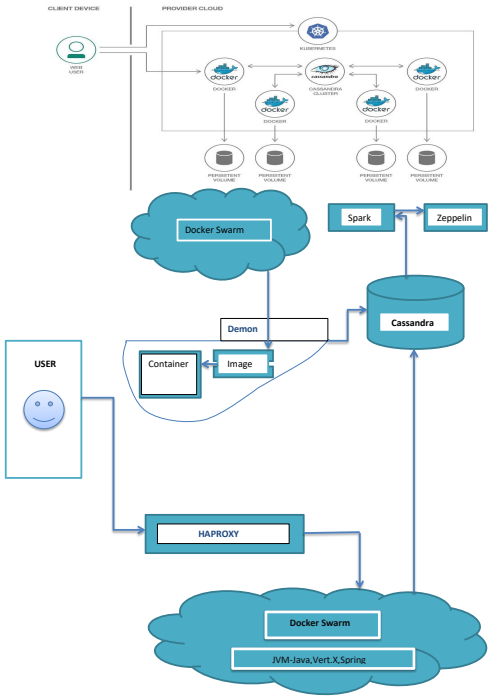


Figure 1: Scheme of transactions in Cassandra

- Docker Manager
- Docker Worker

Apache Cassandra is the scalable NoSQL or non-relational database that powers global businesses like Spotify, Netflix, and Apple.

3.1 Configuring Cassandra

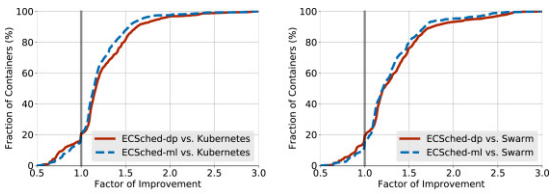
- CASSANDRA BROADCAST ADDRESS
- CASSANDRA SEEDS

3.2 Kubernetes

Kubernetes or k8s (kubernetes) is an open-source container orchestration system for automating deployment, scaling, and managing of applications. It was formerly developed by Google and now it is maintained by the Cloud Native Computing Foundation.

4 Comparison of performace of CO Framework

Juxtaposing the production overhead with a native VM deployment and a Docker+VM deployment of Cassandra.



(a) Comparing with Kubernetes (b) Comparing with Swarm

Figure 2: Scheme of transactions in Cassandra

5 Discussion

5.1 Identify the best proposed model

6 Conclusion

Co framework should further advance the isolation of container networking approaches that depends on host mode networking and should refine the performance of volume plugins for local persistent storage.

7 References