Mesos

A cluster management software by Apache Software Foundation

Overview

- At a high level Mesos is a cluster management platform which enables building resource-efficient distributed systems

- Mesos provides efficient dynamic resource isolation and sharing across multiple distributed applications (including, for example, Hadoop, Spark and Memcache)
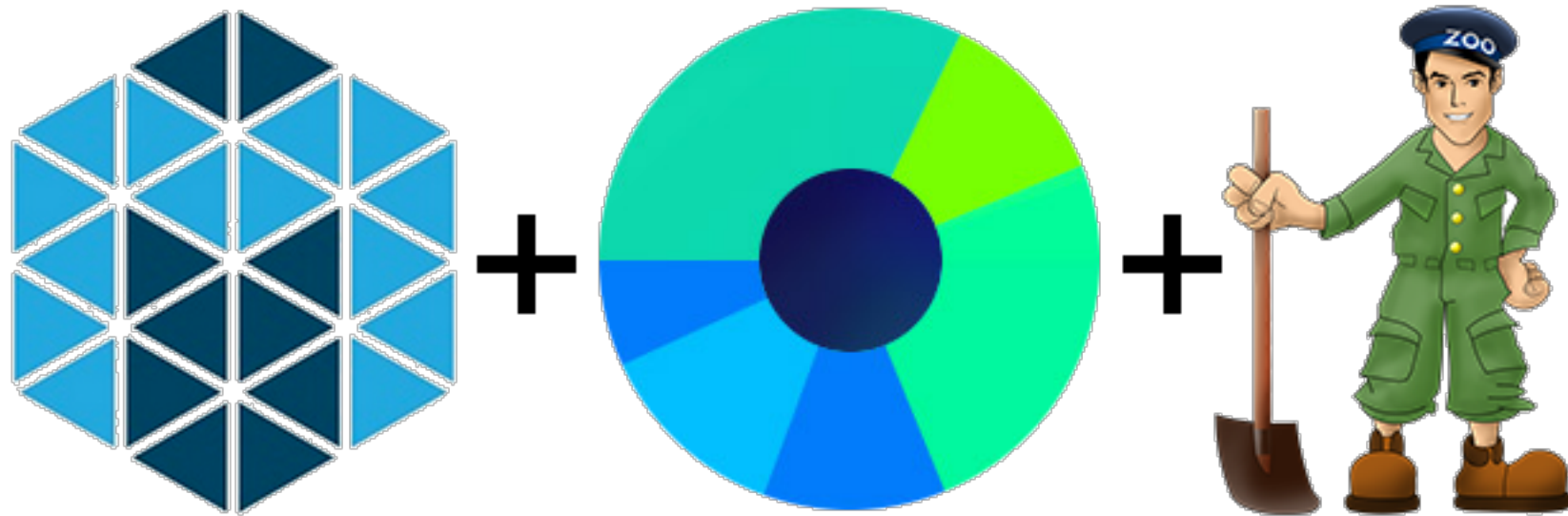
Key benefits of Mesos

- No Vendor Lock-in

- Production Tested Application Scaling to 10,000+ nodes

- Flexible Configuration

- Open Source

Companies who use Mesos

- Twitter, Airbnb and Apple. At least 50 organisations currently use Mesos

- And now we too use it

Mesosphere Marathon framework

Components of Mesosphere

- Apache Mesos

- Apache ZooKeeper
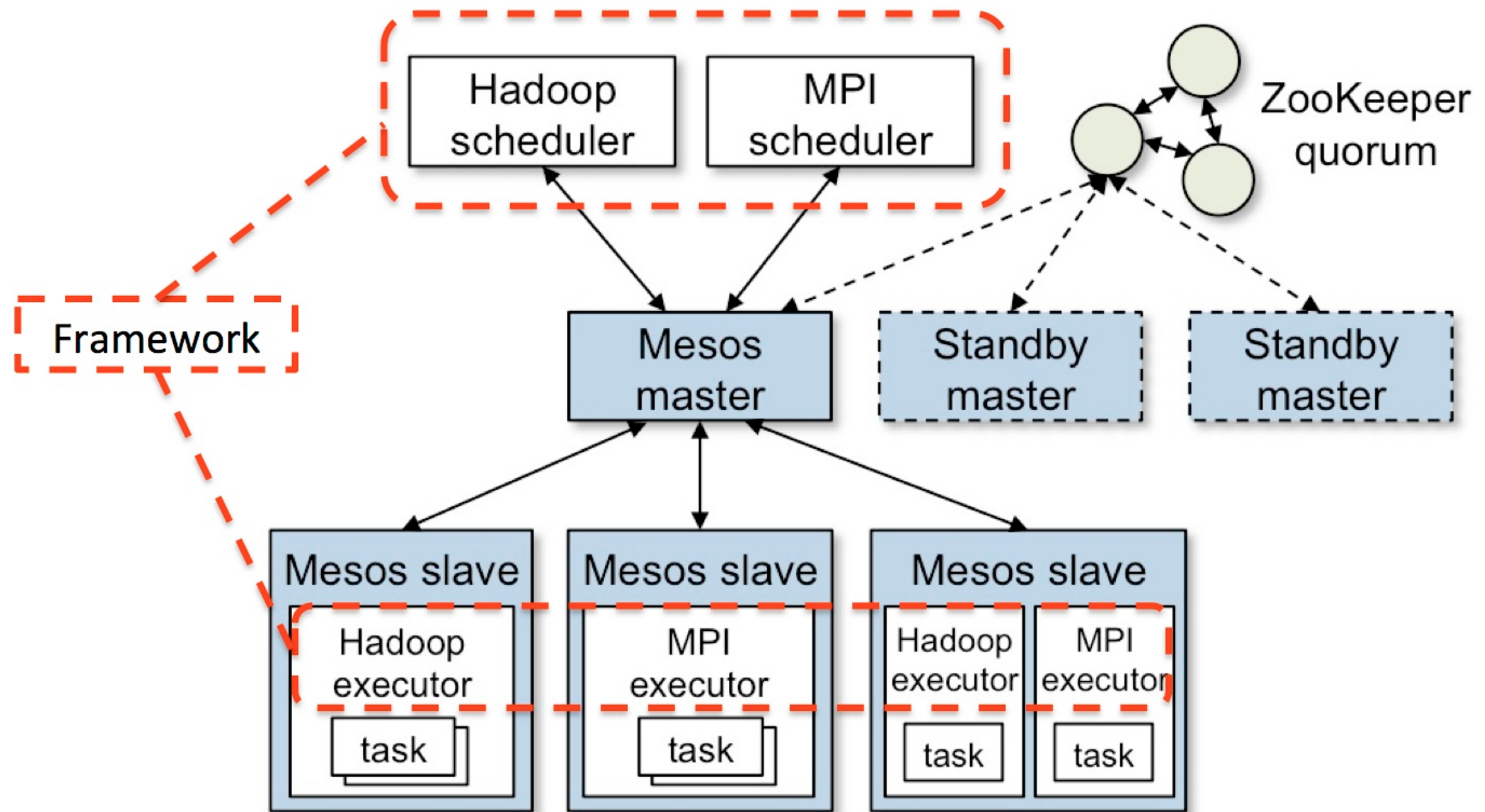
- Mesosphere Marathon

- HAProxy

Key benefits of Mesosphere

- Application scheduling and scaling

- Application fault-tolerance and self-healing

- Under load application prioritisation of applications

- Application service port unification

- Application service discovery

- Application service end-point elasticity

Best Practices

- A Mesos cluster needs at least one Mesos Master and one Mesos Slave. The Mesos Master coordinates and dispatch tasks onto the Mesos Slaves which run the jobs

- In production clusters you typically run Mesos in High Availability (HA) Mode with three or more Mesos Masters, three or more Zookeepers, and many Mesos Slaves

How Mesos works

Demo

- Installing and configuring a Mesos cluster

- Running tasks from Marathon

- Running tasks from Chronos

- Running tasks from command line

Playbook to install Mesos

- Master - https://github.com/adithyakhamithkar/ansible/blob/master/install-mesos-master.yml

- Slave - https://github.com/adithyakhamithkar/ansible/blob/master/install-mesos-slave.yml

Further Reading

- Mesosphere - https://open.mesosphere.com/mesosphere

- Data center OS - https://www.youtube.com/watch?v=0I6qG9RQUnY

- Marathon - https://mesosphere.github.io/marathon/

- Mesos - https://mesos.apache.org/