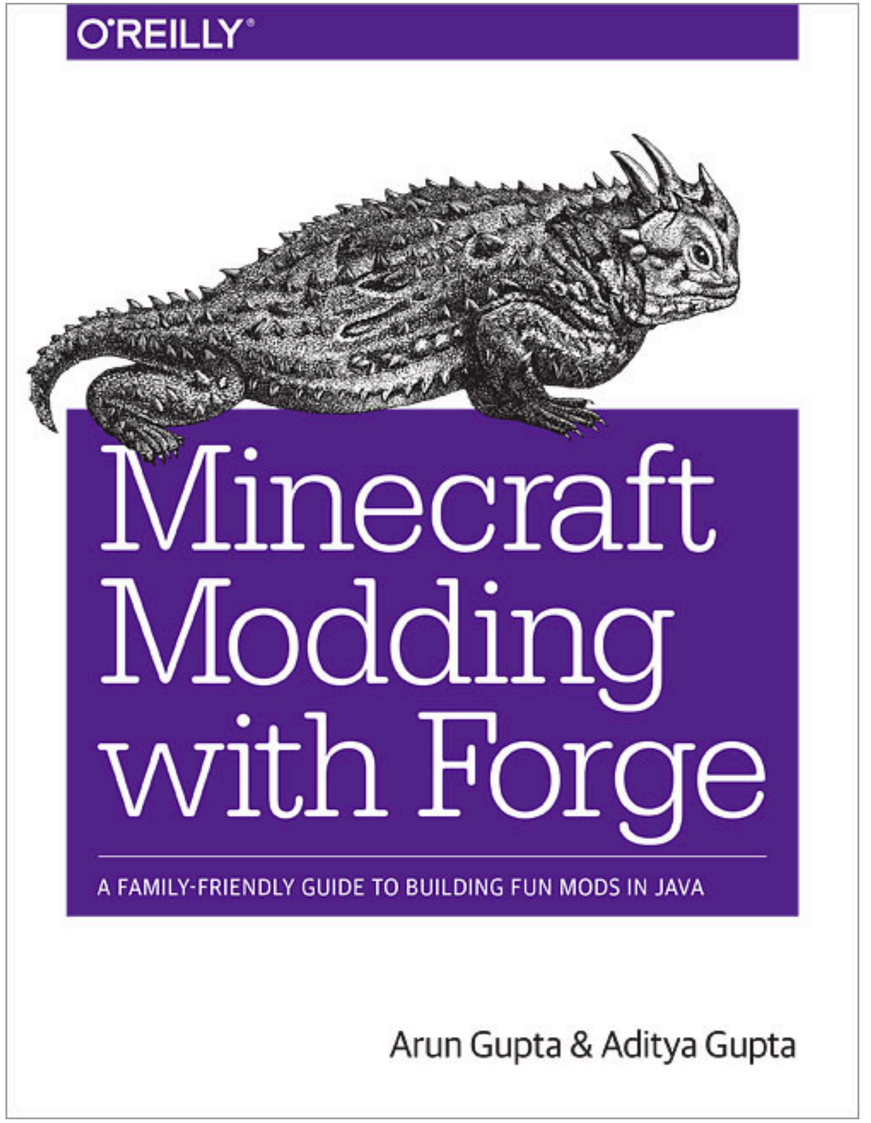
Getting Started with Mesos

Arun Gupta, @arungupta
VP Developer Advocacy, Couchbase

Couchbase

DEVOXX™ 4KIDS USA



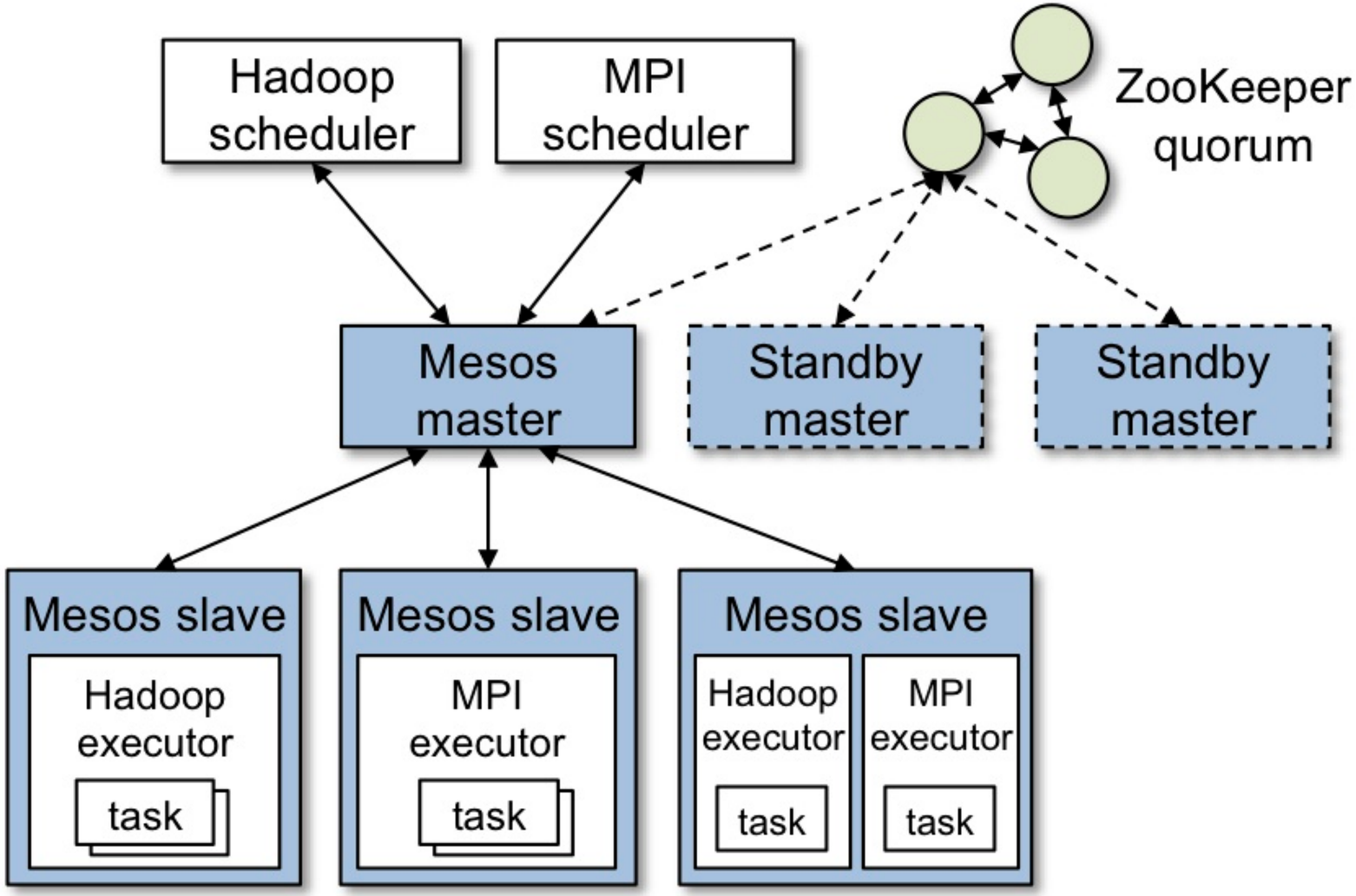
Mesos

- Open source cluster manager
- Developed at UC Berkeley
- Provides resource isolation and sharing across distributed applications
- Run distributed systems on the same pool of nodes
  - Hadoop, Spark, Jenkins, Couchbase, …
- Cluster monitoring
- Tasks isolated via Linux containers

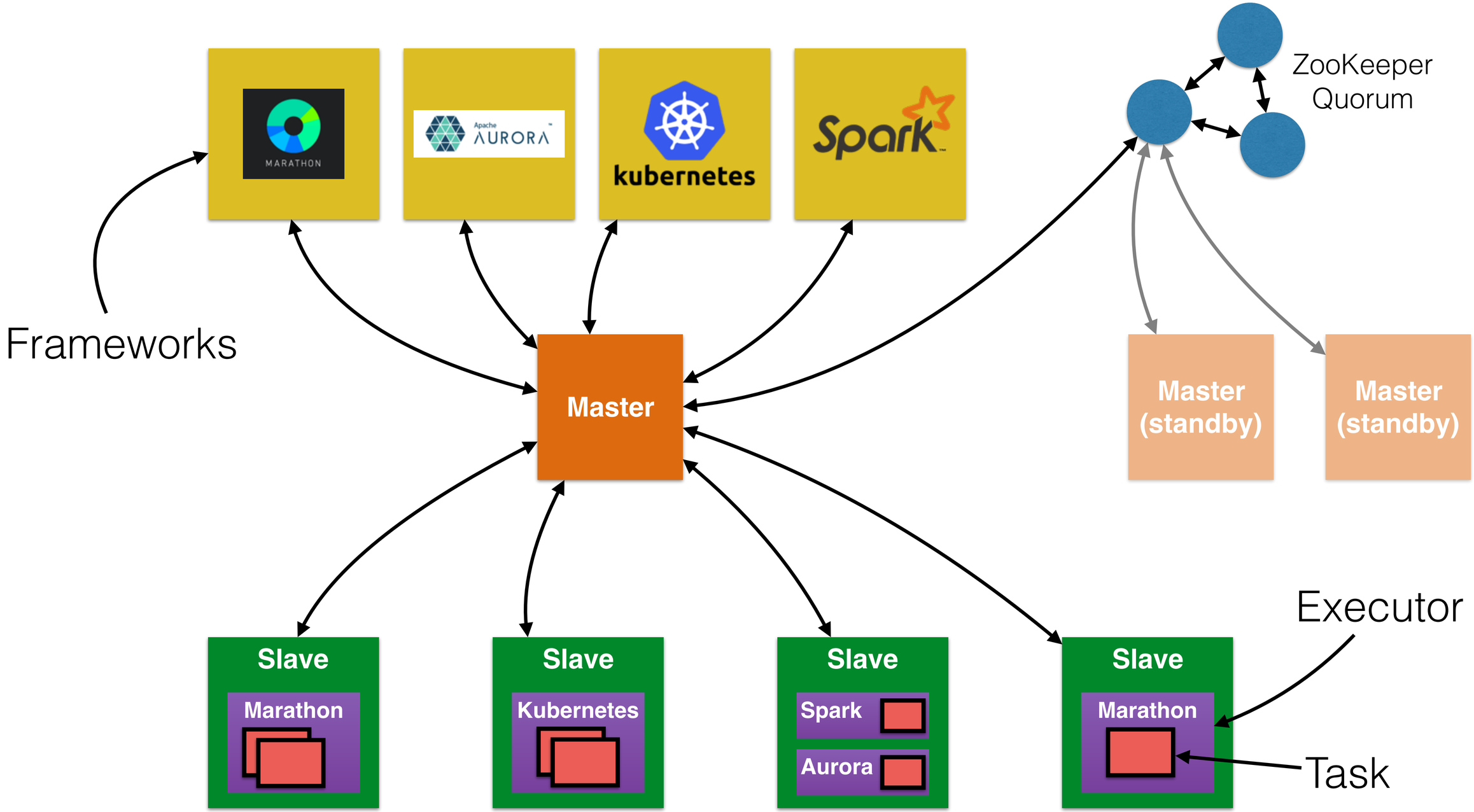
Mesos

- Master Slave architecture
- Fault tolerant
  - Leader election via ZooKeeper
- Multi platform
  - Ubuntu, Mac OS, CentOS

Mesos Architecture



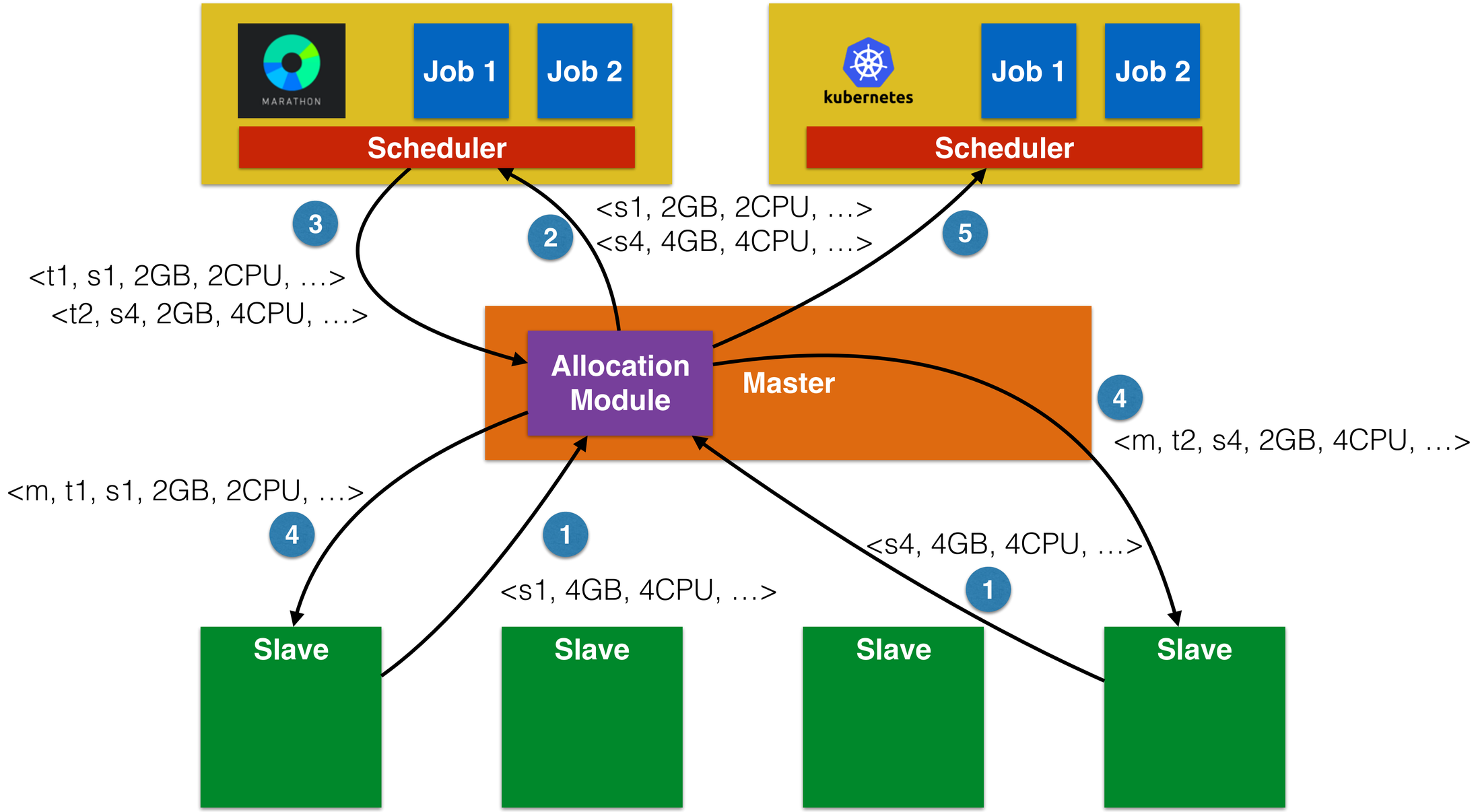
http://mesos.apache.org/documentation/latest/architecture/



http://mesos.apache.org/documentation/latest/architecture/

Frameworks

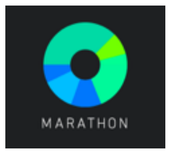
- Frameworks are targeted at a use case and domain-specific
  - Master node “offers” resources to each framework
  - Framework “accepts” the offer and execute applications
- Framework has “scheduler” and “executor”
  - Scheduler registers with the master for “offer”
  - Executor launched on slave nodes to run the task
    - Passes a description of the task to run



http://mesos.apache.org/documentation/latest/architecture/

- Built using the same principles as the Linux kernel, at a different level of abstraction
  - Computer: Data center
  - Kernel: Mesos
  - Application: Distributed application
  - Operating system: Mesos + Framework + Ecosystem

Workloads



Frameworks

Mesos

Kernel

Distributed File System

DFS

Distributed Resources
CPU, RAM, I/O, Filesystem, etc.

Cluster

Master

Node

Node

Node

Node

http://www.slideshare.net/timothysc/apache-coneu

docker

kubernetes

MESOS

References

- github.com/javaee-samples/docker-java
- mesos.apache.org/
- Containers recipe: couchbase.com/containers