MESOS

Yes, yet another resource negotiator

What is Mesos?

- Came out of Twitter – it's a system that manages resources across your data center(s)

- Not just for big data stuff – it can allocate resources for web servers, small scripts, whatever.

- Meant to solve a more general problem than YARN – it's really a general container management system   Yarn is meant for Hadoop

We're kind of going off the reservation

- Mesos isn't really part of the Hadoop ecosystem per se, but it can play nice with it
  - *Spark and Storm may both run on Mesos instead of YARN*
  - *Hadoop YARN may be integrated with Mesos using Myriad*
    - So you don't necessarily need to partition your data center between your Hadoop cluster and everything else!
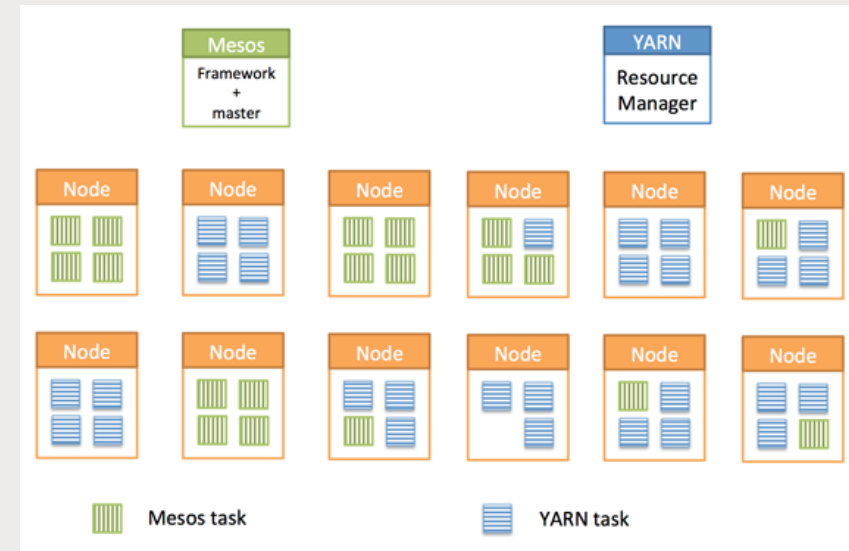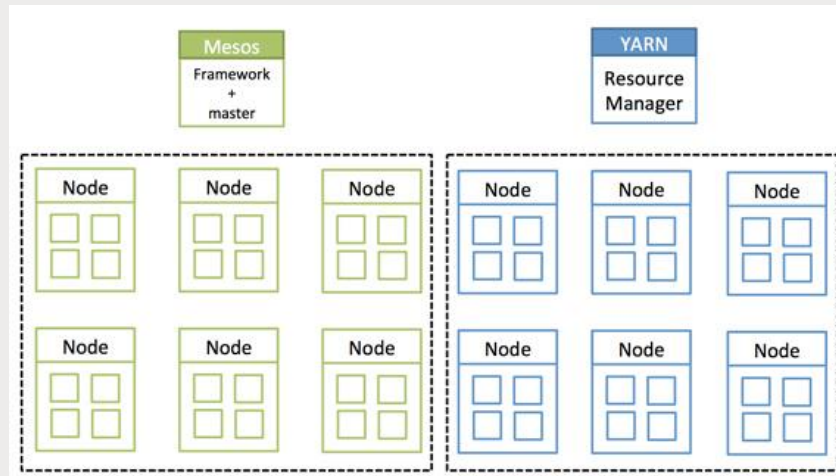
Differences between Mesos and YARN

- YARN is a monolithic scheduler – you give it a job, and YARN figures out where to run

- Mesos is a two-tiered system
  - *Mesos just makes offers of resources to your application ("framework")*
  - *Your framework decides whether to accept or reject them*
  - *You also decide your own scheduling algorithm*

- YARN is optimized for long, analytical jobs like you see in Hadoop

- Mesos is built to handle that, as well as long-lived processes (servers) and short-lived processes as well.

How Mesos fits in

- If you're looking for an architecture you can code all of your organization's cluster applications against – not just Hadoop stuff – Mesos can be really useful
  - *You should also look at Kuberentes / Docker*

- If all you are about is Spark and Storm from the Hadoop-y world, Mesos is an option
  - *But YARN's probably better, especially if your data is on HDFS*
  - *Spark on Mesos is limited to one executor per slave (node)*

Siloed vs resource sharing

Images from Mesosphere

When to use Mesos?

- If your organization as a whole has chosen to use Mesos to manage its computing resources in general
  - *Then you can avoid partitioning off a Hadoop cluster by using Myriad*
  - *There is also a "Hadoop on Mesos" package for Cloudera that bypasses YARN entirely*
- Otherwise – probably not. I just want you know what Mesos is and how it's different from YARN.