

WORKFLOW FOR

Building Distributed Systems using Clojure and Mesos

Prasanna Gautam
Staples-SparX

About Me

- Mostly Harmless
- Been some sort of system admin for 12 years
- Developed systems for about same time
- Used Mesos since 2013



What is Mesos

- ✧ Mesos is a cluster manager
 - ✧ Handles scaling up resources
 - ✧ Allows Dynamic Allocation
 - ✧ Resource Isolation
 - ✧ Works using resourceOffers to Frameworks



Who is using Mesos

- ✧ Airbnb
- ✧ Twitter
- ✧ Apple
- ✧ Uber
- ✧ CERN (Because Physics!)
- ✧ you?

Mesos Essential Vocabulary

Term	Definition
Mesos Master	Coordinator, Offers Resources to Frameworks
Mesos Slaves	Where your tasks are run
Framework	Your Application on Mesos
Task	What Actually Runs
Scheduler	Handles Offers from mesos
Executor	Handles the launching of tasks
Zookeeper	Mesos uses for Coordination

So.. what is Mesos?

- ✦ Mesos as Deployment System

- ✦ Traditional tools like Chef, Ansible, Puppet aren't adequate for dynamically changing configurations, depending on external factors.
- ✦ You would still need a traditional configuration manager to bootstrap a Mesos cluster

- ✦ Mesos as an Execution Platform

- ✦ Rather than paying for 3rd party PaaS solutions like Heroku, you can have single Mesos cluster.

- ✦ Frameworks

- ✦ Frameworks can act as applications, like Hadoop or Storm.
- ✦ Frameworks can act as deployment systems, like Ansible, Chef.
- ✦ Mesos coordinates and collaborates with Frameworks to allocate slices of machines in the Mesos cluster towards various roles.

But.. I'm a small...



My Clojure/Mesos Story

- ✧ 2014 MesosCon
 - ✧ Built a Riak Framework
 - ✧ In 4 hours with terrible Wifi
 - ✧ With 3 other people I'd never worked with
 - ✧ It was amazing!



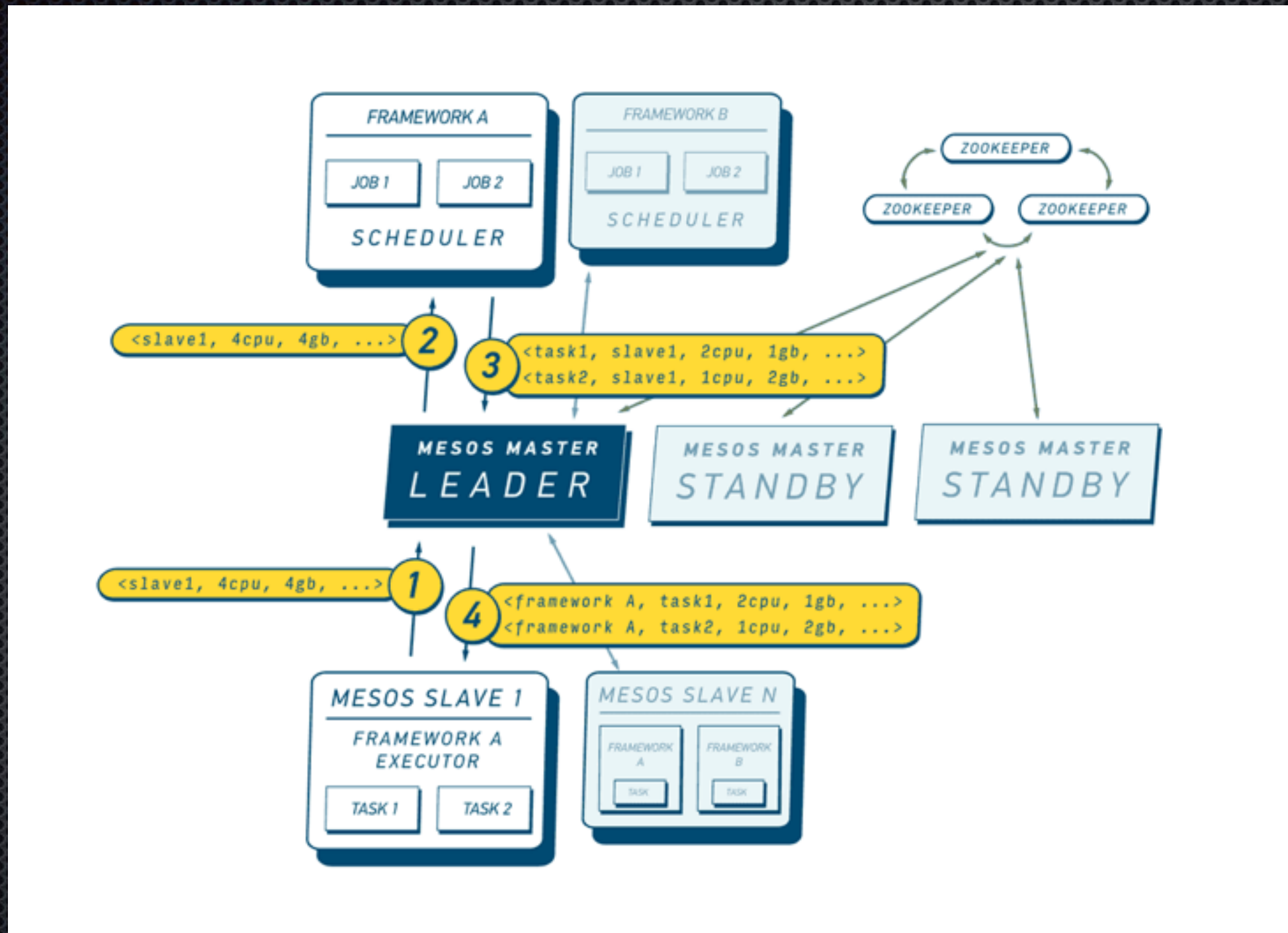
My Clojure/Mesos Story

- ✦ 2015 StrangeLoop
 - ✦ Hey, I should present something on Clj-mesos
 - ✦ Talk is hard, lets do a Workshop!
 - ✦ Uh, oh
 - ✦ Realized, it's actually even harder.

What I'm presenting

- ✦ A set of tools for building Frameworks atop mesos
 - ✦ A Clojure Template
- ✦ A workflow that has worked for me and Ed so far
- ✦ Some examples

How do Frameworks work?



Why Clojure?

- This is a Clojure meetup, isn't it?

Why Clojure?

- ✦ Clojure is a great example of “Making Easy Things Easy & Hard Things Possible”
- ✦ Distributed Systems is hard because of state management
 - ✦ You have to be very explicit
 - ✦ Clojure already forces you into this mindset
- ✦ Cleaner Code
- ✦ A REPL - Needs a little more work, but doable

Tools

- ✧ Vagrant
 - ✧ I use VirtualBox exclusively
- ✧ Editor
 - ✧ Emacs (Still on Evil training wheels)

“Show Me Don’t Tell Me”

–*Rush, Presto (1989)*

Demo: (go) Hello Mesos

- ✦ <https://github.com/clj-mesos-workshop/hello-mesos>

mesos-template

- ✧ <https://github.com/clj-mesos-workshop/mesos-template>
- ✧ Demo
- ✧ Some introduction

Demo: (go-ha) — How High?

Demo: 5K

- ✦ <https://github.com/prasincs/five-k>
- ✦ Attempt at a Marathon Clone
- ✦ A sample project to show some capabilities
 - ✦ By writing a very basic clone of Marathon

Questions?

Pssst...

SparX is hiring..!