Developing Frameworks for Apache Mesos
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CEO of Elodina [http://www.elodina.net/](http://www.elodina.net/) a big data as a service platform built on top open source software. The Elodina platform enables customers to analyze data streams and programmatically react to the results in real-time. We solve today’s data analytics needs by providing the tools and support necessary to utilize open source technologies.

As users, contributors and committers, Elodina also provides support for frameworks that run on Mesos including Apache Kafka, Exhibitor (Zookeeper), Apache Storm, Apache Cassandra and a whole lot more!

LinkedIn: [http://linkedin.com/in/charm alloc](http://linkedin.com/in/charm alloc)
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Overview

- What goes on Mesos?
- Framework = (Scheduler + Executor)
- What does it look like without a scheduler?
- We can do better using a scheduler!
- Schedulers working together.
- Framework API & Examples.
What goes on Mesos?
MESOS
ALL THE THINGS
Many, many things
Anything can be run on Mesos with Marathon or Aurora

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

http://aurora.apache.org/
Framework = (Scheduler + Executor)
Scheduler
Executors
mesos/kafka

https://github.com/mesos/kafka
What does it look like without a scheduler?
without a scheduler
without a scheduler
without a scheduler
without a scheduler
without a scheduler
We can do better using a scheduler
with a scheduler
with a scheduler
with a scheduler
with a scheduler

![Diagram with nodes labeled P1, P2, P3, P4, P4, P5, C1, C3, and a scheduler node connected by arrows.]
with a scheduler
Schedulers working together
Framework API & Examples
Mesos Protos

https://github.com/apache/mesos/blob/master/include/mesos/mesos.proto

Everything is good to understand but here is a good place to start

- FrameworkInfo
- TaskInfo
- TaskState
- MasterInfo
- SlaveInfo
Mesos Framework Development Guide


- **Scheduler API**
  - registered, reregistered, disconnected
  - resourceOffers, offerRescinded, statusUpdate, frameworkMessage
  - slaveLost, executorLost, error

- **Executor API**
  - registered, reregistered, disconnected
  - launchTask, killTask, frameworkMessage
Task Reconciliation

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

It is the responsibility of Mesos (scheduler driver / Master) to ensure that the framework is notified when a disconnection, and subsequent (re-)registration occurs. At this point, the scheduler should perform task state reconciliation.
Language Bindings

- **c++ →**
  - [https://github.com/apache/mesos/tree/master/src/examples](https://github.com/apache/mesos/tree/master/src/examples)

- **python →**
  - [https://github.com/apache/mesos/tree/master/src/examples/python](https://github.com/apache/mesos/tree/master/src/examples/python)
  - [https://github.com/wickman/pesos](https://github.com/wickman/pesos)

- **java →**
  - [https://github.com/apache/mesos/tree/master/src/examples/java](https://github.com/apache/mesos/tree/master/src/examples/java)
  - [https://github.com/groupon/jesos](https://github.com/groupon/jesos)

- **go →**
  - [https://github.com/mesos/mesos-go](https://github.com/mesos/mesos-go)

- **clojure →**
  - [https://github.com/dgrnbrg/clj-mesos](https://github.com/dgrnbrg/clj-mesos)
  - [https://github.com/pyr/mesomatic](https://github.com/pyr/mesomatic)

- **scala →**
  - [https://github.com/mesosphere/scala-sbt-mesos-framework.g8](https://github.com/mesosphere/scala-sbt-mesos-framework.g8)
Rendler

A rendering web crawler for Apache Mesos.

https://github.com/mesosphere/RENDLER
Questions?

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