Apache Mesos + Apache YARN = Myriad

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Mesosphere
Myriad Project Lead
Apache Mesos Committer
Mesos from 10,000 feet

- Open Source Apache project
- Cluster Resource Manager
- Scalable to 10,000s of nodes
- Fault-tolerant, no SPOF
- Multi-tenancy, Resource Isolation
- Improved resource utilization
Mesos is more than

Yet Another Resource Negotiator

- Long-running services; real-time jobs
- Native Docker; cgroups for years; Isolate cpu/mem/disk/net/other
- Distributed systems SDK; ~200 loc for a new app

Core written in C++ for performance, Apps in any language
Mesosphere DCOS

**Apps**
- Native: Spark, MPI, Hadoop, Storm
- App: Docker

**API**
- Native: Mesos SDK
- Long running: Services REST API
- Batch: Batch REST API
- Native: “Marathon” (init)
- Long running: “Chronos” (cron)

**Kernel**
- Mesos

**Hardware**
- Serv
- Serv
- Serv
- Serv

**Cloud Providers**
- AWS, DO, GCE
1. Launch NodeManager
2. Advertise resources
3. Launch Containers

2.0 CPU
2.0 GB
2.5 CPU
2.5 GB
History of Myriad

💡 Mohit Soni from eBay builds prototype, presents at MesosCon

⚡ Santosh Marella from MapR attends Mesosphere HackWeek, builds independent prototype

💬 Adam introduces Mohit and Santosh, both prototypes merged together

👥 Myriad accepted into **Apache Incubator** March 1, 2015
Myriad improves Mesos

- Tighter integration with Hadoop frameworks like HBase, Hive, Pig
- Borrow resources from Hadoop when traffic spikes for tier-1 services
- Backfill unused resource capacity with best-effort Hadoop jobs
- No Mesos code changes necessary
Myriad improves Hadoop

Elastic scaling

Fault-tolerant: Maintain NM capacity

Share resources with other workloads, improve resource utilization

Multiple isolated Hadoop clusters sharing node resources and DFS

No YARN/Hadoop code changes
Learn More!

Apache Myriad Incubator Proposal
Apache Myriad Incubator Status Page
https://github.com/mesos/myriad
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http://mesos.apache.org
https://github.com/apache/mesos
http://mesosphere.com