Day 2 Operations with Containers:
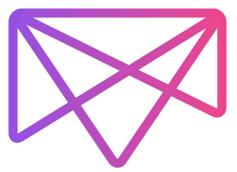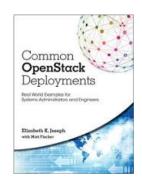
Myth □ vs. Reality □

Linux.conf.au Sysadmin Miniconf
23 January 2018
Elizabeth K. Joseph, @pleia2

MESOSPHERE

Elizabeth K. Joseph, Developer Advocate

- ❏ Developer Advocate at Mesosphere
- ❏ 15+ years working in open source communities
- ❏ 10+ years in Linux systems administration and engineering roles
- ❏ Founder of OpenSourceInfra.org
- ❏ Author of The Official Ubuntu Book and Common OpenStack Deployments

Containerized Systems 101

You no longer have a single server with everything running on it.

You have a multi-tier system with various layers and owners down the stack:

- ❏ Hardware
- ❏ Network
- ❏ Resource abstraction
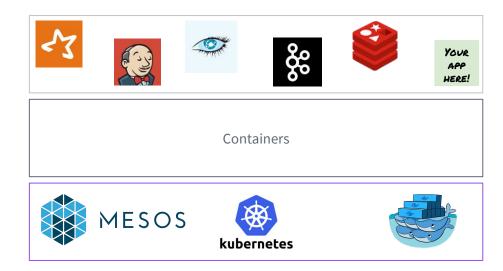- ❏ Scheduler
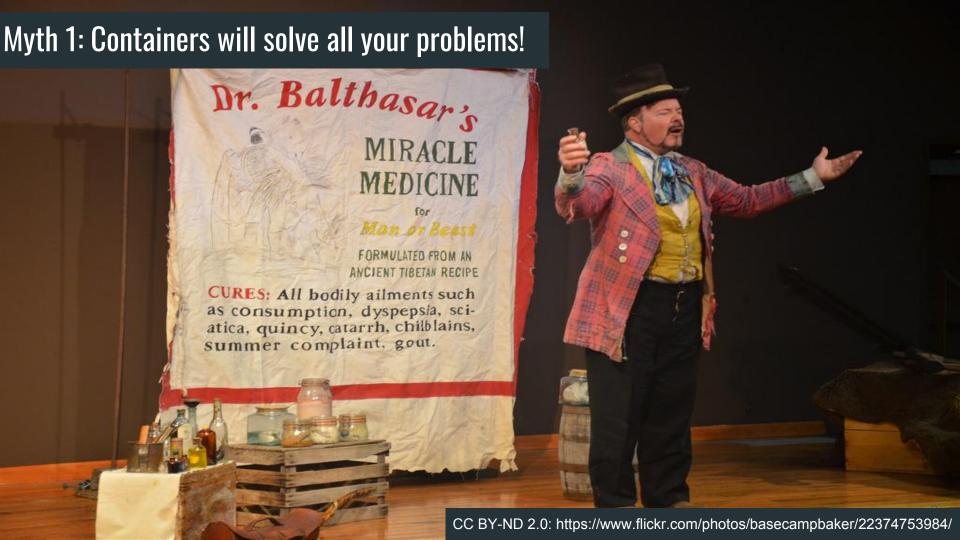- ❏ Container
- ❏ Virtual network
- ❏ Application
- ❏ ...

Cloud-native scopes

Application

Container

Host + orchestration platform

Cloud-native scopes

Containers

Myth 1: Containers will solve all your problems!

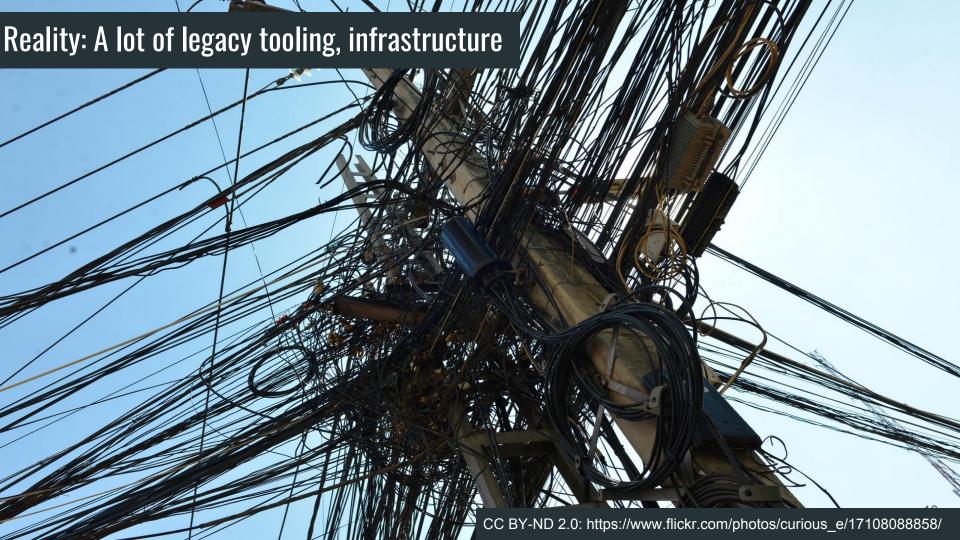Reality: You still have to maintain it

Maintenance & Troubleshooting

- Cluster Upgrades
- Cluster Resizing
- Capacity Planning
- User & Package Management
- Networking Policies
- Auditing
- Backups & Disaster Recovery

- Debugging
    - Services
    - System
- Tracing
- Chaos engineering

Myth 2: Green fields!

Reality: A lot of legacy tooling, infrastructure

Focus on standards-based implementations

Myth 3: Everything is already automated!

Reality: You still need logging, metrics, monitoring
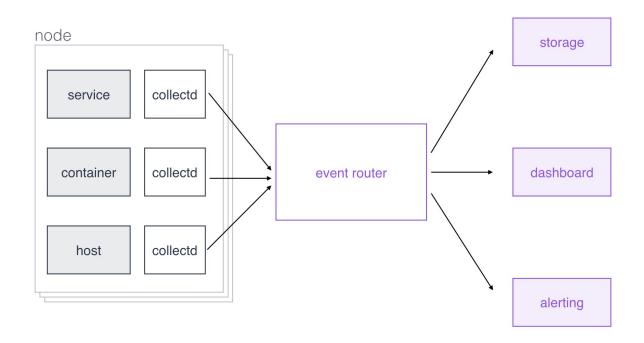
Logging, Metrics, Monitoring

Logging

- Scopes (host, container, app)
- Local vs. centralized

Metrics, Monitoring

- Collecting metrics
- Downstream processing
    - Alerting
    - Dashboards
    - Storage (long-term retention)

METRICS CONCEPTS

LOGGING TOOLING EXAMPLES (INTEGRATED)

- Centralized app logging with fluentd

- DC/OS

    a. ELK stack log shipping

    b. Splunk

- Graylog

- Loggly

- Papertrail

- Sumo Logic

PRODUCT EXAMPLE: SYSDIG INTEGRATED METRICS TOOLCHAIN

Apache Mesos, Marathon & DC/OS + Sysdig example

"Sysdig Monitor comes with built-in, first class support for Mesos, Marathon, and DC/OS. In order to instrument your Mesos environment with Sysdig Monitor, you simply need to install the Sysdig agent container on each underlying host in your Mesos cluster.

Sysdig Monitor will automatically begin **monitoring all of your hosts, apps, containers, and frameworks**, and will also automatically connect to the Mesos and Marathon APIs to pull relevant metadata about your environment."

https://support.sysdig.com/hc/en-us/articles/207886103-Sysdig-Install-Mesos-Marathon-DCOS-CLI-method-

Myth 4: No more planning!

Reality: You still need to plan

Planning

Things will go wrong.

These things can't be an afterthought.

You must build time into your deployment and maintenance plans.

Cloud-Native Infrastructure "Must Haves"

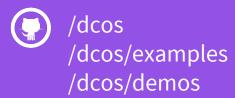❏ A plan which considers:
  ❏ Host
  ❏ Container
  ❏ Application
❏ Upgrade strategy
❏ Backups
❏ Disaster recovery
❏ Metrics collection and monitoring
❏ Centralized logging

Questions?

🐦 @dcos

#️⃣ chat.dcos.io

✉️ users@dcos.io

🐙 /dcos
/dcos/examples
/dcos/demos

Elizabeth K. Joseph
Twitter: @pleia2
Email: lyz@princessleia.com