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

Containerized Systems 101
Cloud-native scopes

- Application
- Container
- Host + orchestration platform
Cloud-native scopes
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!

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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

node

service collectd
container collectd
host collectd

event router

storage
dashboard
alerting
• Centralized app logging with fluentd
• DC/OS
  a. ELK stack log shipping
  b. Splunk
• Graylog
• Loggly
• Papertrail
• Sumo Logic
Agent Installation

Installation procedures and instructions for configuring the agent to poll for customized application installations.

Agent Auto-Config
- Sysdig Install: Standard (Linux/Docker/CoreOS)
- Sysdig Install: Kubernetes
- Sysdig Install: Mesos/Marathon/DCOS (CLI method)
- Sysdig Install: Amazon ECS
- Sysdig Install: Google Container Engine (GKE)
- Sysdig Install: OpenShift
- Sysdig Install: Linux (Manual)
- Sysdig Agent: Update & Uninstall
“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.”

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?

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