Day 2 Operations with Containers: Myth vs Reality

Sysdig CCWFS
September 26, 2017
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MESOSPHERE

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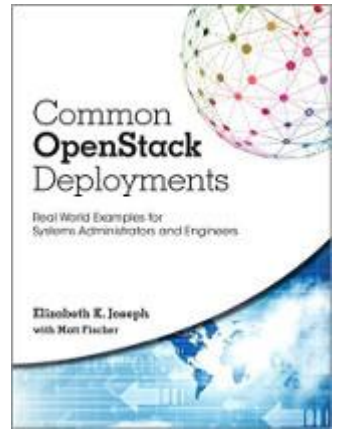
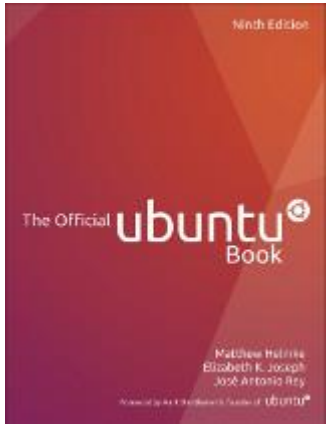
- Developer Advocate at Mesosphere
- 15+ years working in open source communities
- 10+ years in Linux systems administration and engineering roles
- Founder of OpenSourceInfra.org
- Author of The Official Ubuntu Book and Common OpenStack Deployments





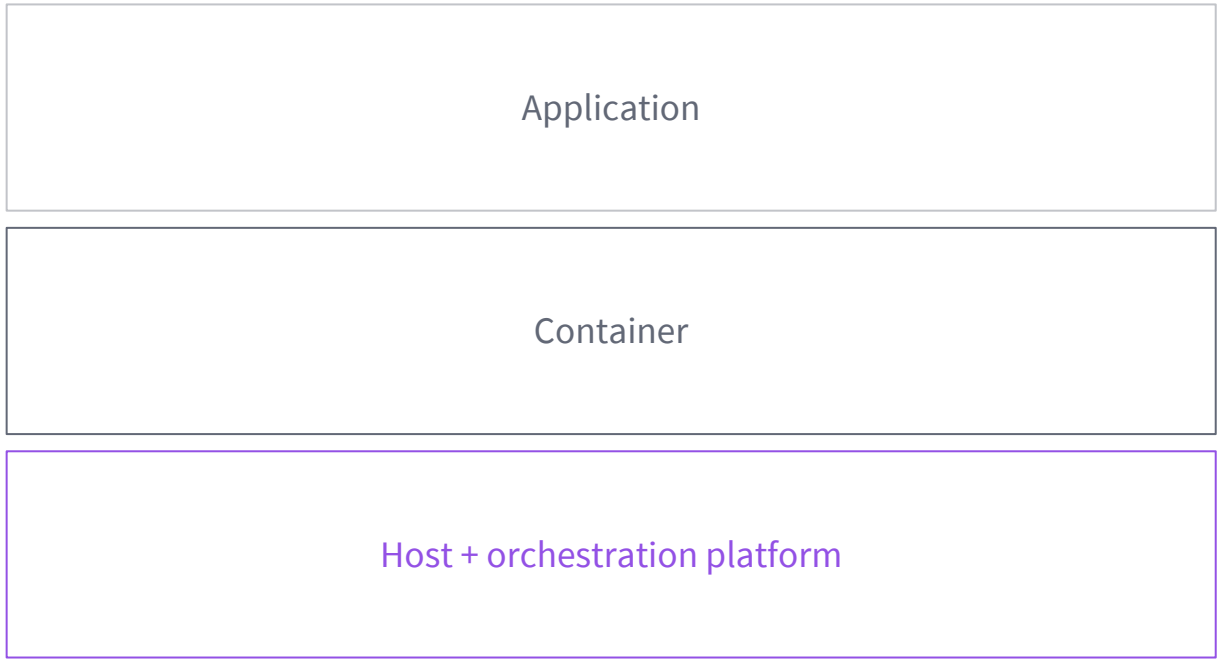
Containerized Systems 101

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

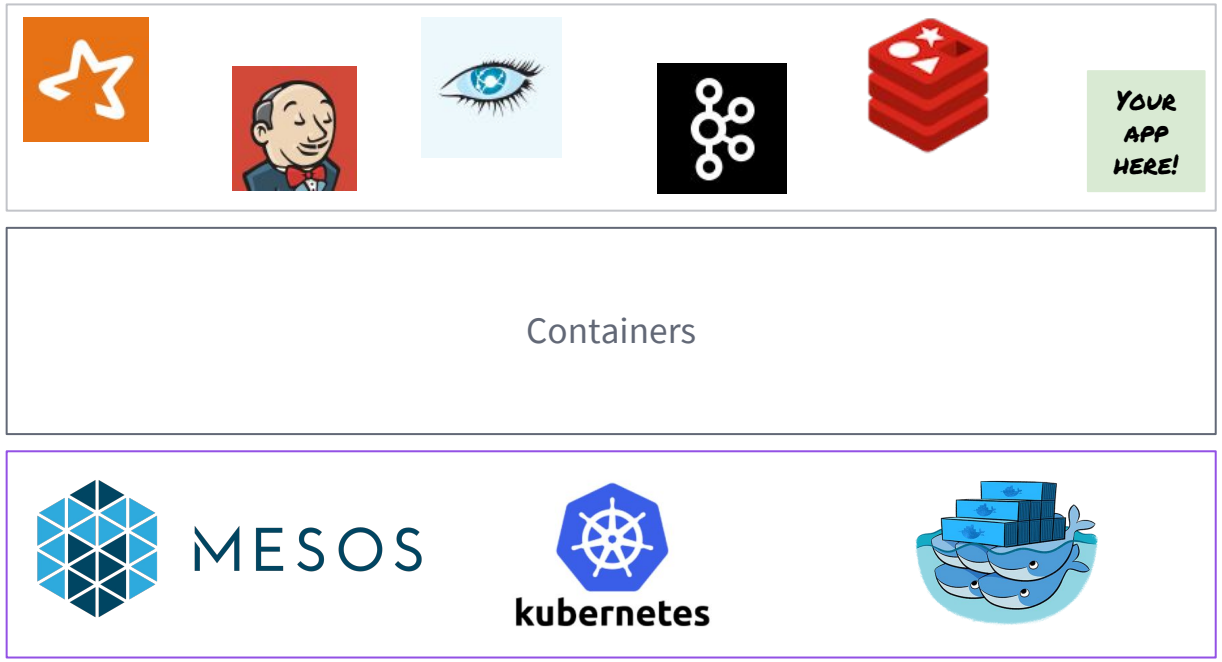
You have a multi-tier system with various layers and owners down the stack:

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

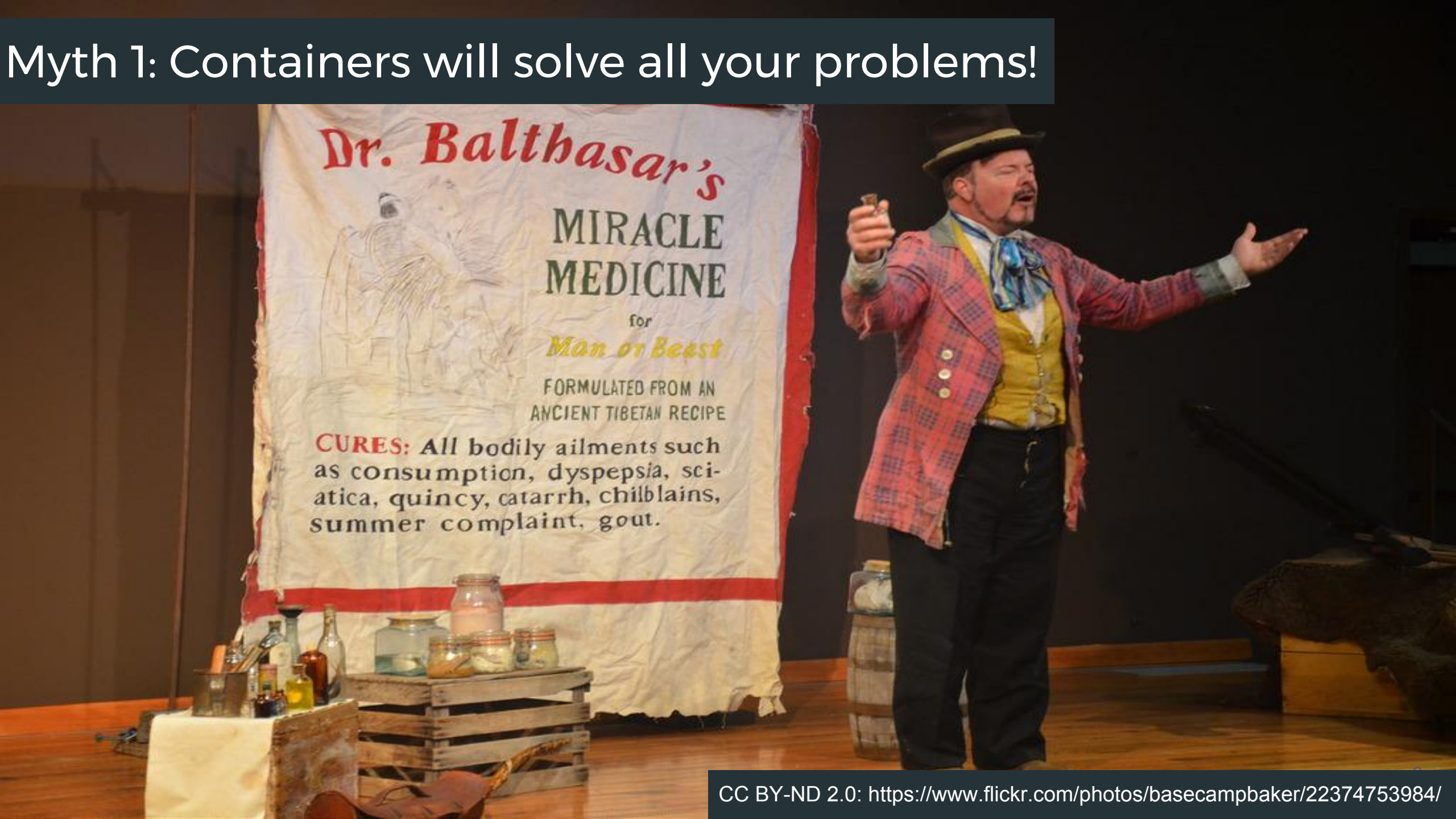
Cloud-native scopes



Cloud-native scopes



Myth 1: Containers will solve all your problems!



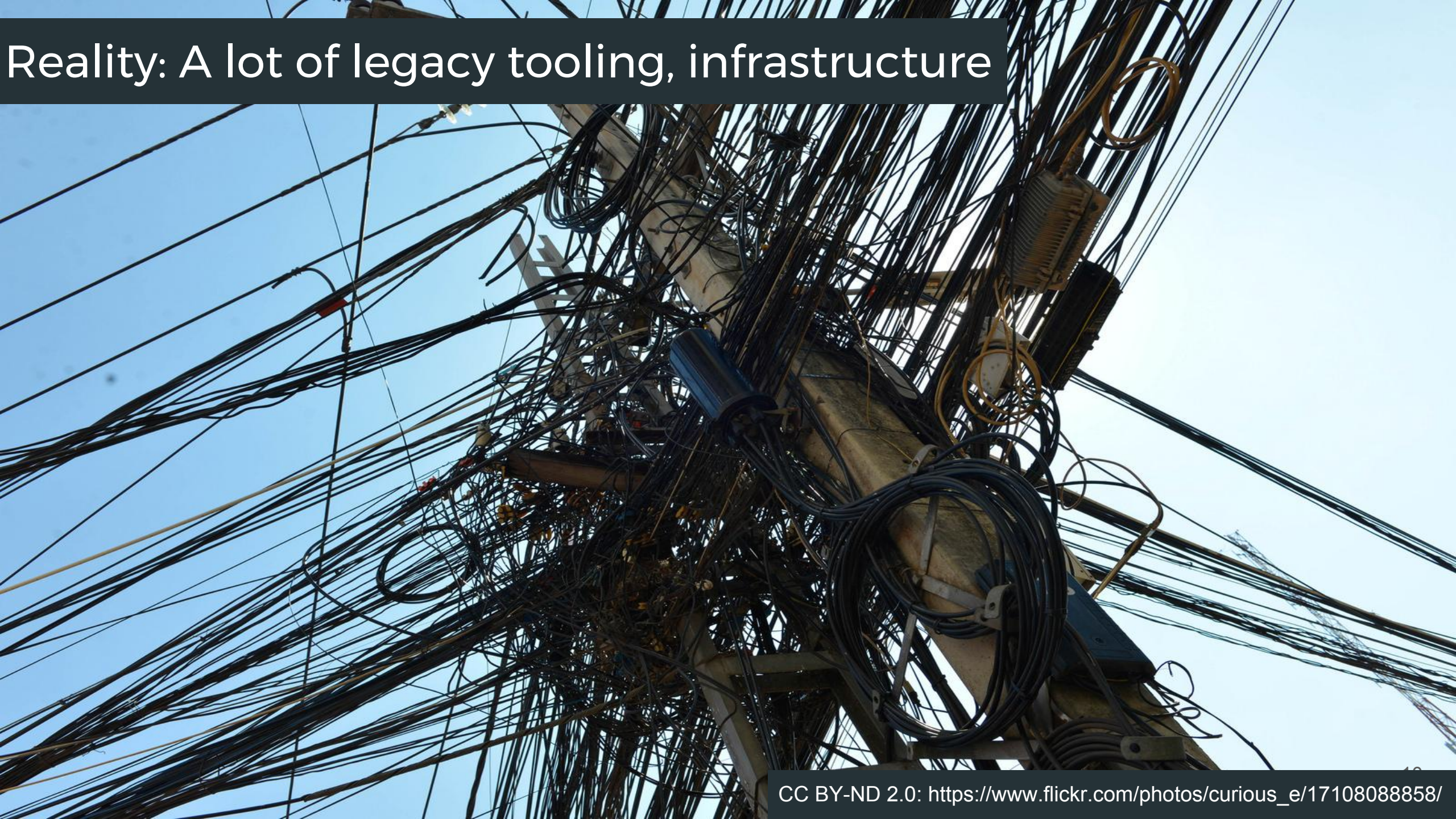
Reality: You still have to maintain it

Maintenance & Troubleshooting

- Cluster Upgrades
- Cluster Resizing
- Capacity Planning
- User & Package Management
- Networking Policies
- Auditing
- Backups & Disaster Recovery
- Debugging
  - Services
  - System
- Tracing
- Chaos engineering

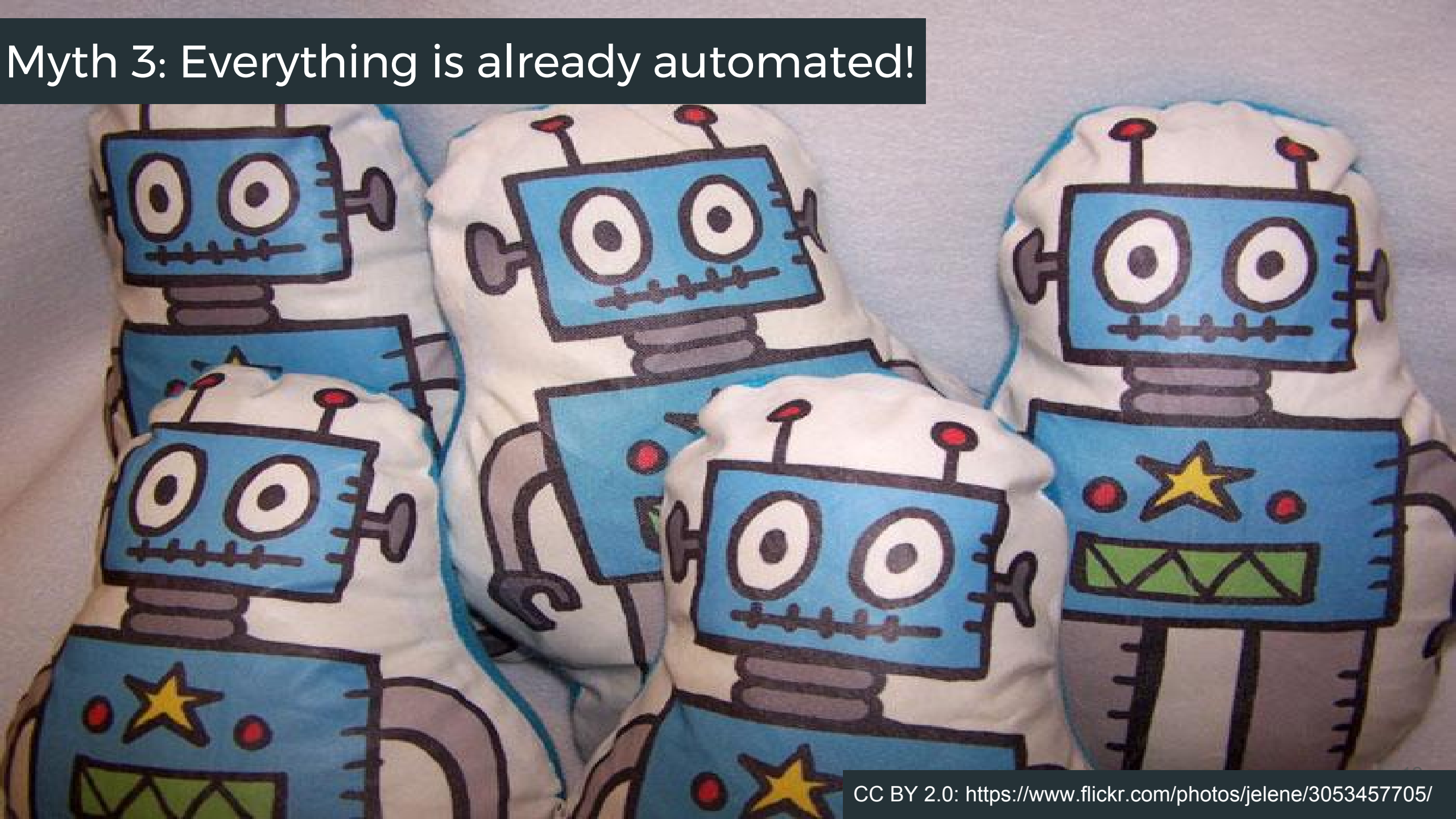
Myth 2: Green fields!

Reality: A lot of legacy tooling, infrastructure



Focus on standards-based implementations

Myth 3: Everything is already automated!



Reality: You still need logging, metrics, monitoring

Logging, Metrics, Monitoring

Logging

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

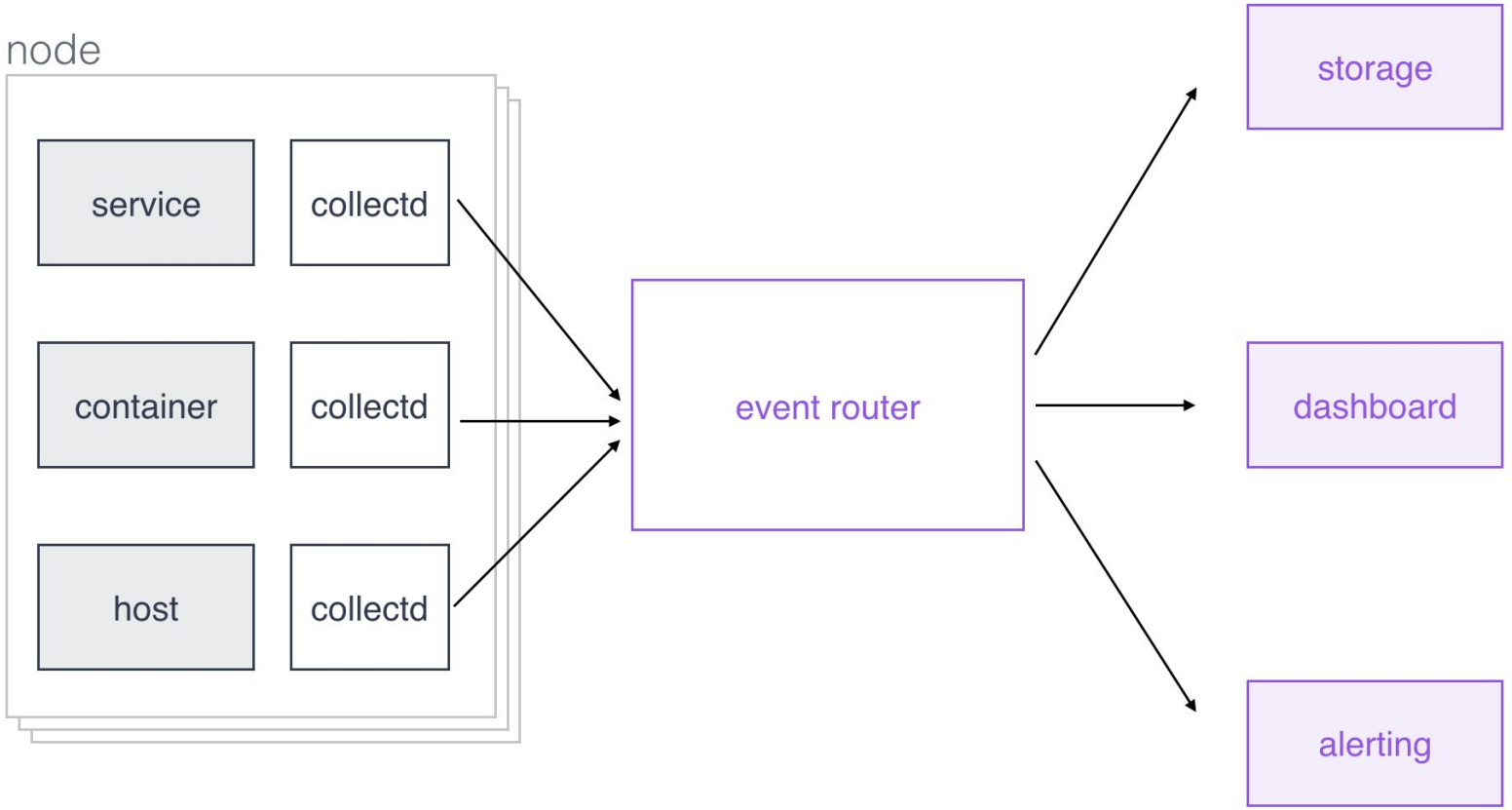
Metrics, Monitoring

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

LOGGING TOOLING EXAMPLES (INTEGRATED)

- Centralized app logging with fluentd
- DC/OS
  a. ELK stack log shipping
  b. Splunk
- Graylog
- Loggly
- Papertrail
- Sumo Logic

METRICS CONCEPTS



INTEGRATED METRICS TOOLCHAIN

Agent Installation

Follow

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

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.

Checklist

Cloud-Native Infrastructure “Must Haves”

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

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Questions?

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