The Open Sourcing of Infrastructure

SLC DevOpsDays 2017
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Elizabeth K. Joseph, Developer Advocate at Mesosphere

- 10+ years in Linux systems administration and engineering roles
- 15+ years working in open source communities
- Founder of OpenSourceInfra.org
- Author of *The Official Ubuntu Book* and *Common OpenStack Deployments*
The [recent] history of infrastructure

(from a highly opinionated, open source view)
Once upon a time
Linux was an upstart

Lots of FUD around open source
I liked it anyway.
So I got a junior Linux systems administrator job!
Some of the topics during a seminar I spoke at in 2009

- What is Free/Open Source Software (FOSS)?
- How & Why Linux and FOSS can Deliver Business Results
- Managing FOSS: Thousands of Alternatives - How To Choose?
- Using Open Source Web Applications to Produce Business Results
- Managing FOSS for Business Results
Why do I want the source?

- To customize and develop the software
- To fix bugs
- To control security
Flood of changes, including

Downtime becoming [considerably more] unacceptable
Greater concern over security, ability to fix bugs
Reluctance to be locked in by a vendor
Increase in reliance upon scaling and automation
Transition from server “pets” to “cattle”
Larger focus on data (retention, speed)
Turning point: LAMP stack
Open source is now ubiquitous
Developers are using, developing on, contributing to, and sharing open source software!

Operations is using and developing on open source software.
When I left my ops job, I left my tools behind

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Time to open source ops stuff!
Configuration management led the way:
Puppet Modules, Chef Cookbooks, Ansible Playbooks

Open application definitions:
DC/OS Universe catalog, Juju Charms

Full disk images:
Dockerhub and other container registries
Welcome to the present!
Open Sourcing Infrastructure:

PHASE 2

What were some of the reasons for going open source in the first place?

- Security
- Ability to diagnose and fix bugs without vendor intervention
- Increased control over our data and services
- Avoiding vendor lock-in
The Cloud.

Including IaaS, PaaS, SaaS...
“Most people just consume the cloud without thinking ... many users are sinking cost into infrastructure that is not theirs, and they are giving up data and information about themselves without thinking.”

Edward Snowden, OpenStack Summit, May 9, 2017
Let’s think.
Is the service I’m using adhering to open standards, or am I locked in?
What is my recourse if the service vendor goes out of business, or is bought by a competitor?
Does the vendor have a history of communicating clearly and honestly with their customers about downtime, security, etc?
Does the vendor respond to bugs and feature requests?
Will the vendor use our data in a way that I’m not comfortable with? *(or worse, isn’t allowed by your own customer agreements)*
Initial costs may be low, but how will you handle long term, growing costs?
You *could* consider all these things and acknowledge them as acceptable risks.

(Many organizations do!)

(((Just make sure you are actually, seriously considering them)))
Various infrastructure technologies are available:

- OpenStack
- Kubernetes* and Docker Swarm*
- DC/OS*
- ...more in the future!

* Can be used in the cloud or on premises
Even further into the future

(or how we’re going to colonize Mars!)
Open Source the Whole Stack

Infrastructure, configurations, tools, images

OpenStack    OSUOSL    KDE & Gnome    Debian & Ubuntu

And more at opensourceinfra.org
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<th>What do these projects get?</th>
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<tr>
<td>Contributions from anyone, anywhere</td>
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<tr>
<td>Vendor independence</td>
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<tr>
<td>No lock-in</td>
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<tr>
<td>Community ownership</td>
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Also coming up in SLC...

Tobi Knaup, CTO and Co-Founder of Mesosphere @ DevOpsUT

Thursday, July 20, 2017
6:00 PM

https://www.meetup.com/DevOpsUT/events/240003317/

Questions?
Feedback?

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