OpenStack in Production

The Good, the Bad, and the Ugly

Presentation by Robbie Williamson robbie@canonical.com www.canonical.com April 2013



Where	London, Boston, Taipei, Shanghai
When	Established in 2004
Who	500+ people
Why	To bring Ubuntu to the world
Cars 2 (2011)	



CANONICAL

We've Done "Cloud" Since 2008



"Ubuntu 9.04 Server Edition will preview Ubuntu Enterprise Cloud (UEC). Ubuntu is the first commercially-supported distribution to enable businesses to build cloud environments inside their firewalls. With Ubuntu 9.04 Server Edition, organisations can explore the benefits of cloud computing without the data or security issues associated with moving data to an external cloud provider. Following a successful beta programme last year, Ubuntu Server Edition 9.04 will also be fully available on Amazon Elastic Compute Cloud (EC2)."

http://www.ubuntu.com/news/ubuntu-9.04-server





Can We Practice What We Preach?

• Transition our IT infrastructure to a cloud-centric workflow across the <u>entire</u> company



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- Transition our IT infrastructure to a cloud-centric workflow across the <u>entire</u> company
- Support the Ubuntu Project, as well as Canonical's internal systems and developers





Can We Practice What We Preach?

- Transition our IT infrastructure to a cloud-centric workflow across the <u>entire</u> company
- Support the Ubuntu Project, as well as Canonical's internal systems and developers
- Move from a traditional "IS over here and development over there" to real DevOps



Yes We Can!





.....

Yes We Can!....but it was **damn** hard

- Organizational Expectations
- Heterogeneous Hardware
- Software Decisions



Management

• How much more efficient will we be?

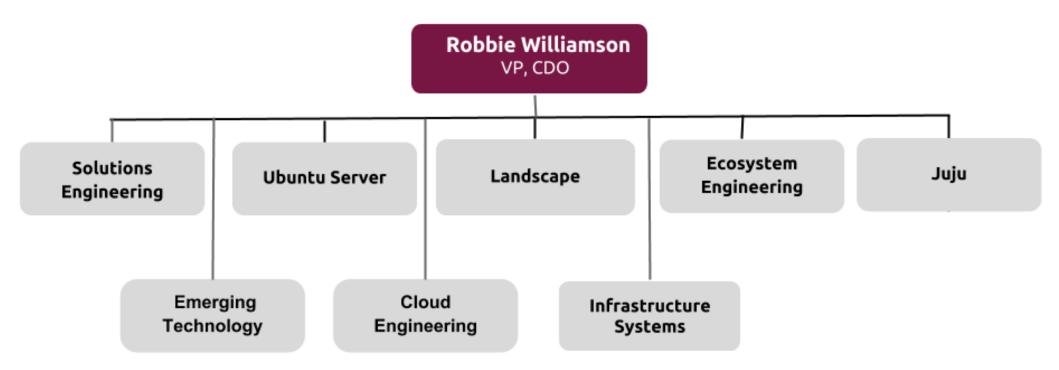
Developers

• How much faster can we develop, test, and deploy?

Operations

• How can we do our jobs!?







Different Vendors/Architectures

- IBM Dell
- HP Supermicro
- ARM Intel/AMD



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Different Capacities

- Processors
- Storage
- Networking



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Different Capacities

- Processors
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- Networking

Different Locations

- Boston Taipei Isle of Man
- London Shanghai



Heterogeneous Hardware

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			packages	Resynchronize computer caph.buildd.	



Which cloud platform do we use?

• Eucalyptus...Cloudstack...OpenStack?



. . .

Which cloud platform Openstack release do we use?

• Essex...Folsom...Grizzly?



Which cloud platform Openstack release do we use?

• Essex...Folsom...Grizzly?

How do we manage the hardware pool?

• Assign...Install...Upgrade?



Which cloud platform Openstack release do we use?

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How do we manage the cloud?

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Which cloud platform Openstack release do we use?

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How do we manage the hardware pool?

• Assign...Install...Upgrade?

How do we manage the cloud?

• Access...Zones...Resources?

How do we manage the services?

• Deploy....Manage....Scale?



Configuration Management



Service Orchestration











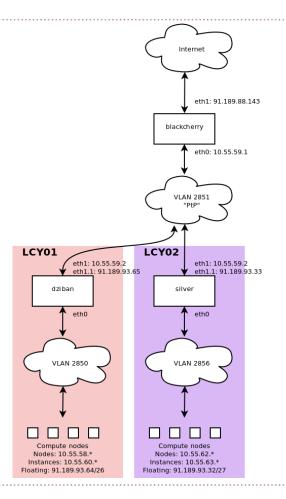








CanoniStack



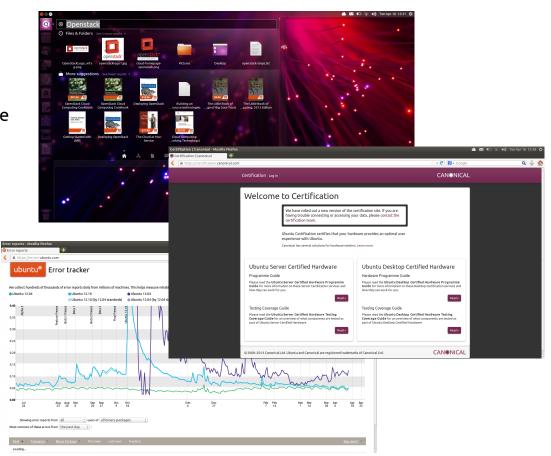
CanoniStack

- Ubuntu 12.04 LTS
- Openstack from Ubuntu Cloud Archive
- 2 regions, 1 Datacenter
- Folsom (including -proposed)
- Grizzly (including -proposed)
- 9 compute nodes in total
- 168 cores, 432Gb RAM
- Separate iSCSI based nova volume/cinder available in each region
- 4 swift nodes
- Shared by both regions
- All deployed and managed with MAAS & Juju

CANONICAL

ProdStack

- Ubuntu 12.04 LTS
- Folsom OpenStack from the Ubuntu Cloud Archive
- Single region and Datacenter
- 10 compute nodes
- 240 cores, 960Gb RAM
- 10 swift nodes
- 6 ceph nodes
- All deployed and managed with MAAS and Juju





- More Services, e.g.
 - Music Search
 - Video Search
 - Full ubuntu.com website
 - Launchpad PPA Builders
- Cross Environment Deployment
- High Availability + 1
- Live Host Machine Upgrades
- "Chaos Monkey"
- "Mayhem Badger"



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Questions please Thank you

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