



OpenStack in Production

The Good, the Bad, and the Ugly

Presentation by
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About Canonical



Where London, Boston, Taipei, Shanghai

When Established in 2004

Who 500+ people

Why To bring Ubuntu to the world



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>



The Big Question in 2011...



Can We Practice What We Preach?

- Transition our IT infrastructure to a cloud-centric workflow across the entire company



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- 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 entire 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

The Answer in 2013...



Yes We Can!



The Answer in 2013...



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

- Organizational Expectations
- Heterogeneous Hardware
- Software Decisions

Organizational Expectations



Management

- How much more efficient will we be?

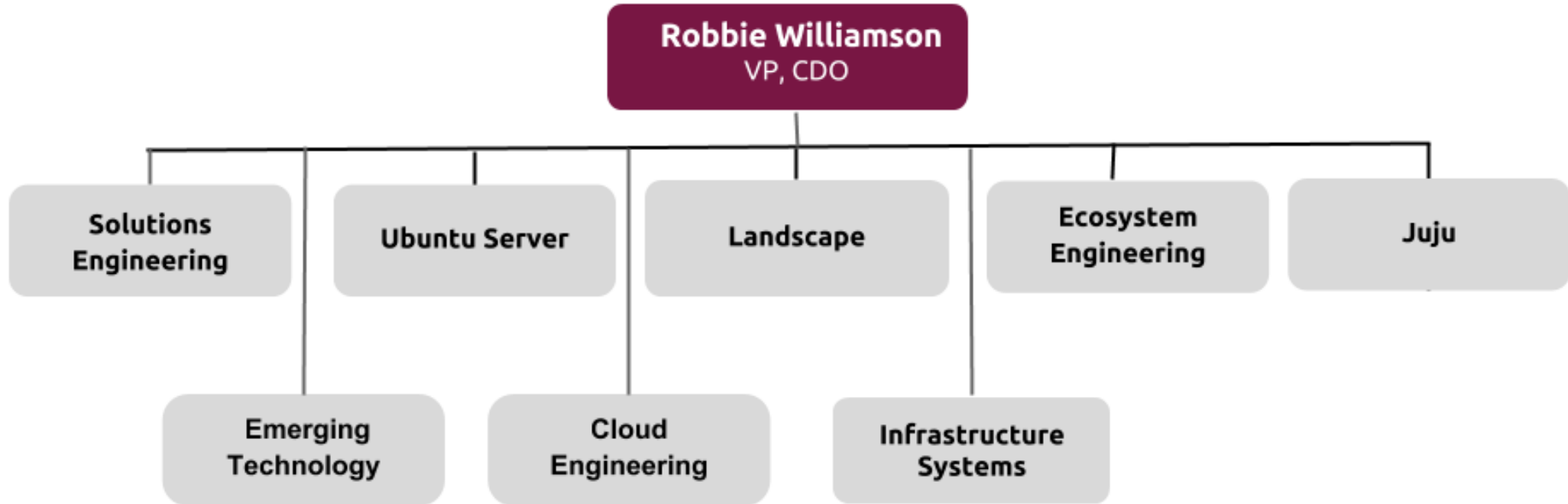
Developers

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

Operations

- How can we do our jobs!?

Organizational Expectations



Heterogeneous Hardware



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
- Storage
- Networking

Different Locations

- Boston
- Taipei
- Isle of Man
- London
- Shanghai

Heterogeneous Hardware



LANDSCAPE  CANONICAL IS COMPUTERS Robbie Williamson Logout

522 computers registered

Remaining registrations: 1478

You can register new computers by [following these instructions](#).

Canonical IS

[View licenses](#)

Name:	standalone
Registered computers:	486
Remaining registrations:	514
Registered virtual machines:	36
Remaining virtual machine registrations:	964
Registration key:	Show password
Created at:	Thu 29 Nov 2012, 22:00

LDS releases

The following LDS releases are available:

- 12.09
- 11.07

Alerts

[Configure alerts](#)

There are 5 outstanding alerts:

Description
408 computers have security upgrades available
6 computers haven't contacted Landscape within the last 5 minutes
4 computers are having issues reporting packages
103 computers need to be rebooted
510 computers have package upgrades available

Activities waiting for approval

An activity needs approval when a change that wasn't originally requested is required to complete the task. An unapproved activity is paused until it's approved or cancelled.

There are no activities waiting for approval.

Activities in progress

An activity is in progress while it awaits delivery to a computer, or while it's delivered but no response about its outcome has been received.

There are 15 activities in progress.

Description	Creator	Created at
Resynchronize computer caph.buildd.		Today 10:05
Resynchronize computer caph.buildd.		Today 10:04
Resynchronize computer caph.buildd.		Today 9:59
Resynchronize computer caph.buildd.		Today 9:57
Resynchronize computer caph.buildd.		Today 9:55
Resynchronize computer caph.buildd.		Today 9:53
Resynchronize computer caph.buildd.		Today 9:52
Resynchronize computer caph.buildd.		Today 9:50
Resynchronize computer caph.buildd.		Today 9:47
Resynchronize computer caph.buildd.		Today 9:45
Resynchronize computer caph.buildd.		Today 9:43
Resynchronize computer caph.buildd.		Today 9:42
Resynchronize computer caph.buildd.		Today 9:40
Resynchronize computer caph.buildd.		Today 9:38
Resynchronize computer caph.buildd.		Today 9:34



Which cloud platform do we use?

- Eucalyptus...Cloudstack...OpenStack?



Which ~~cloud platform~~ Openstack release do we use?

- Essex...Folsom...Grizzly?



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- Assign...Install...Upgrade?



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- Assign...Install...Upgrade?

How do we manage the cloud?

- Access...Zones...Resources?

How do we manage the services?

- Deploy....Manage....Scale?

One Small Clarification...



Configuration Management



Service Orchestration



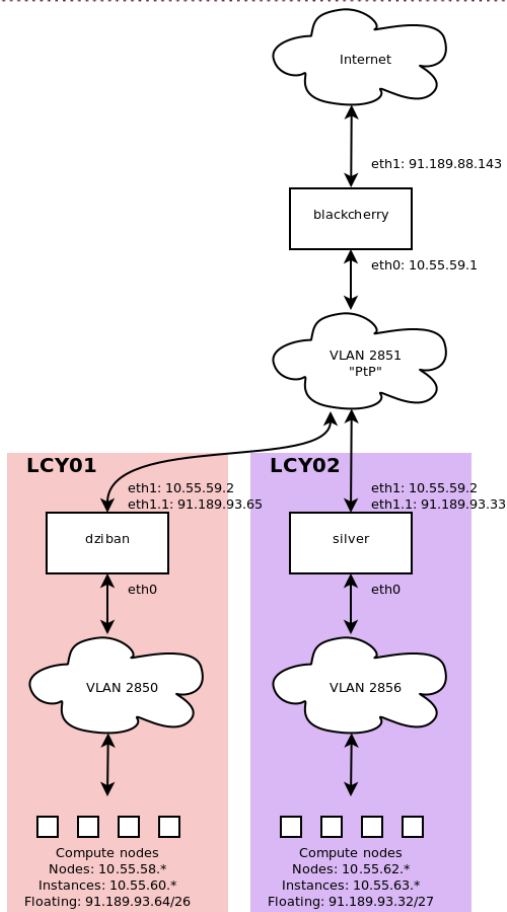


ubuntu



JUJU





CanoniStack

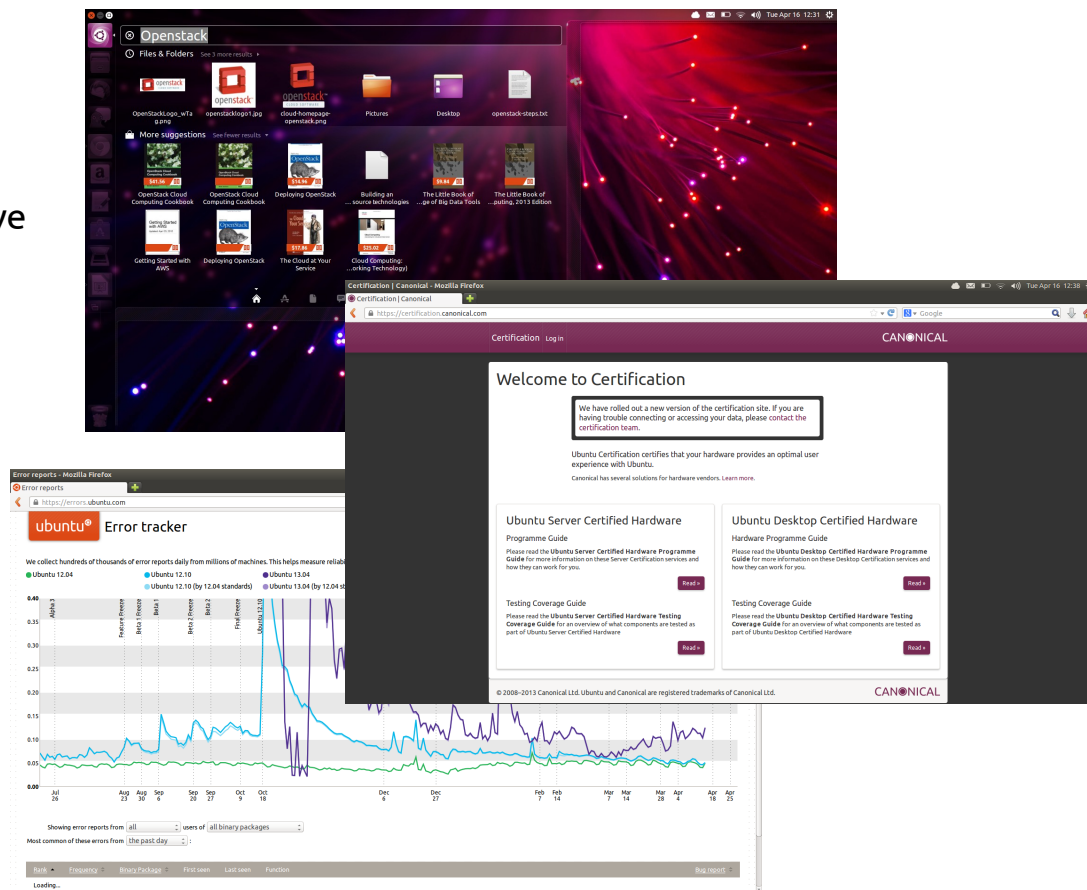
- Ubuntu 12.04 LTS
- Openstack from Ubuntu Cloud Archive
- 2 regions, 1 Datacenter
 - Folsom (including -proposed)
 - Grizzly (including -proposed)
- 9 compute nodes in total
 - 168 cores, 432Gb RAM
 - Separate iSCSI based nova volume/cinder available in each region
- 4 swift nodes
 - Shared by both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

ProdStack



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



Looking Forward...



- 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”
-



Questions please
Thank you

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www.canonical.com