



# What is Ubuntu Cloud?

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- Lead sponsor of the Ubuntu project
- Founded in 2004 by Mark Shuttleworth
- 300+ staff in 28 countries
- Offices in Taiwan, IoM, London, Boston, Montreal
- What we do:
  - Produce world-class Linux distributions
  - Engineering services
  - Support and professional services

# What is cloud computing?

Have you ever seen a cloud presentation  
not starting with this question?

# Cloud = Utility computing



- Evolution toward a service model is unavoidable  
→ Utility Computing
- Possible because of 2 converging factors:
  - Network interconnection of infrastructures
  - Maturation of virtualization technologies

# Cloud computing stack



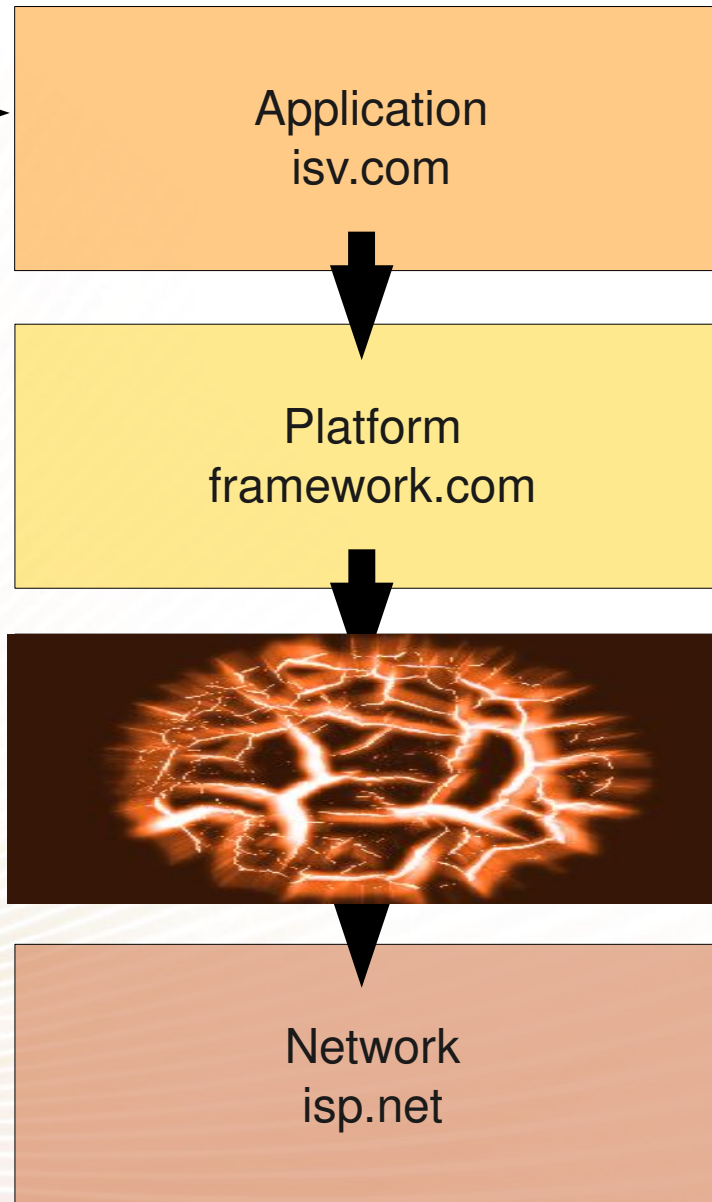
## The risk...



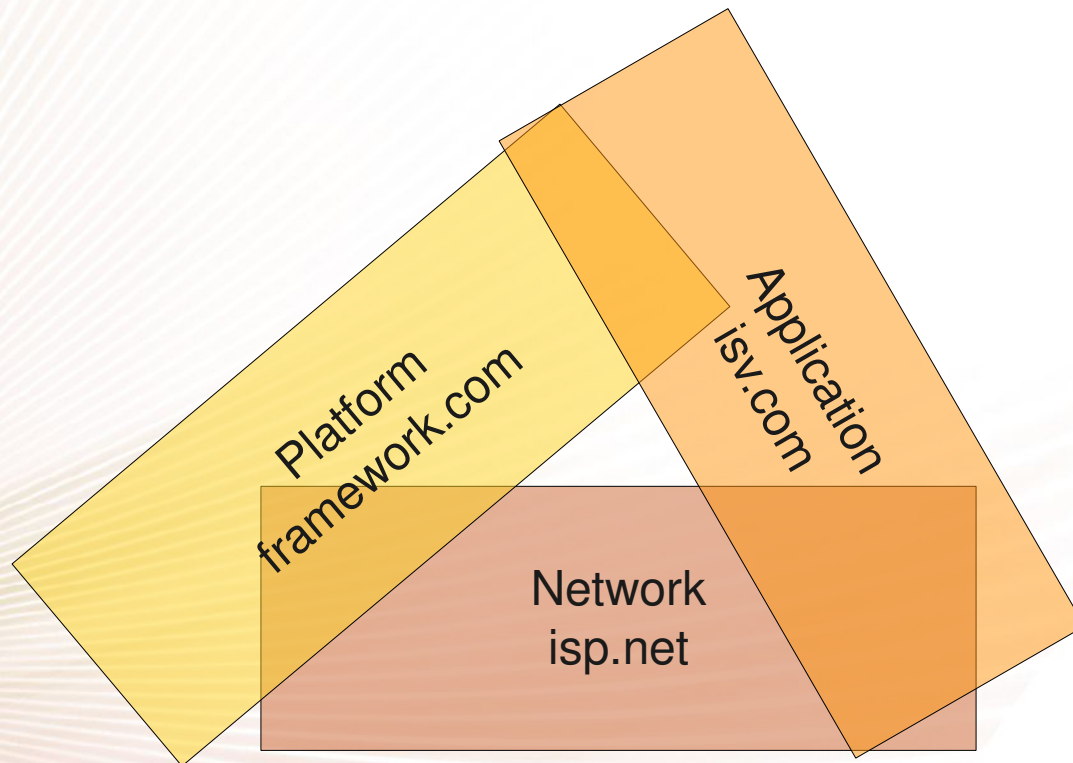
All these technologies are not necessarily:

- Compatible
- Interchangeable
- Transparent

# The risk...



# The risk...



# Standardisation ?



- 13 API, or more
- 13 Committees

**Hope ?**

# Standardisation: Open Source ubuntu<sup>®</sup>

Only an Open Source reference implementation allows to warrant the respect of a standard...

# Standardisation: Open Source ubuntu<sup>®</sup>

Two interesting projects in this area:

- **Ubuntu Enterprise Cloud**

« To lean against a de-facto standard (Amazon EC2) to offer an open source implementation (Eucalyptus) as a foundation on which we will offer an integration of best of breed Open Source tools. »

- **RedHat DeltaCloud**

« To enable an ecosystem of developers, tools, scripts, and applications which can interoperate across the public and private clouds. » - Brian Stevens

# Why EC2 Architecture and API's?



- Momentum leader in cloud brand awareness
- Disruptive economics – utility computing
  - Best captures **shift from product to service economy**
- EC2 already has multiple implementations
  - Eucalyptus, Globus Nimbus, Open Nebula.
  - Emerging de facto standard for cloud API
- Designing for EC2 guarantees **on-demand deployment** and **scalability**, two key benefits of cloud computing
  - BUT requires new appliance architecture

# Ubuntu is a perfect match for EC2



## Technology

- Lean, modular architecture for appliances
- Dedicated EC2 team, kernel and foundation
- Adoption within Canonical

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## Economics

- Economics match utility computing perfectly: **separate services from bits**

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## Ecosystem

- Largest portfolio of bits
- Largest community of innovators
- #1 choice of early adopters

# Ubuntu on EC2



- Lean JEOS AMI plays to Ubuntu strength
- Free, efficient and massively popular
- Provide support and consultancy
- Choice of management:
  - Rightscale
  - CohesiveFT
  - and Landscape
- EC2-optimised handling of updates
- **Top 2 listed most popular AMIs are Ubuntu.**

# Public clouds don't meet every need



- Data security (**including data portability**)
- Data privacy, regulatory compliance, geographical movement of data and governance
- Second-sourcing options
- SLA's and guarantees
- Redundancy and disaster recovery
- Trust in the infrastructure provider

# Universal framework for utility computing



**Public cloud**

Ubuntu AMI's  
**EC2**

**Private cloud**

Ubuntu EMI's  
**UEC**



Portability and burst scalability

# Ubuntu Enterprise Cloud (UEC)

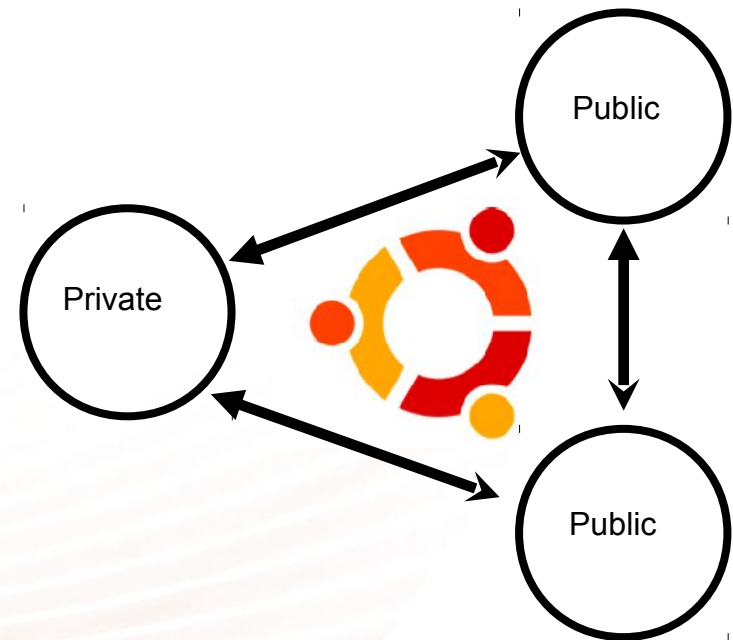


- EC2-compatible cloud built on Ubuntu Server
- First OS platform with complete built-in cloud solution
- Appliances for UEC can span to EC2
- ...and vice versa
- Addresses **need for privacy** together with ability to **scale to public provider** and **avoidance of lock-in**

# UEC delivers...



- “EC2 inside the firewall”
- Fast and simple implementation
- Platform for internal appliance development
- **Common management** tools for public and private cloud
  - Landscape
  - Rightscale
  - CohesiveFT
  - ElasticFox
  - ...
- **Portability** from private to public
- Power management
- Image Store





Install Ubuntu Server

Install Ubuntu Enterprise Cloud

Check disc for defects

Test memory

Boot from first hard disk

Rescue a broken system

F1 Help F2 Language F3 Keymap F4 Modes F5 Accessibility F6 Other Options

!!! Select cloud installation mode

No Eucalyptus cluster controller was found on your network, so this installation will default to installing a new cluster. Select "Node" instead if this is a mistake and you already have a cluster controller in place.

Cloud installation mode:

**Cluster**

Node



Please, fill out the form:

**Mandatory fields:**

Username:

Password:

Password, again:

Full Name:

Email address:

**Optional fields:**

Telephone Number:

Project Leader:

Affiliation:

Project Description:

OR

## User account information

Login: **admin**

Name:

Email: 

Feel free to change the account information (except the login) and the password whenever you want. The cryptographic credentials for the Web services associated with this account, shown below, will not be affected by these changes.

[Edit Account Information](#)[Change Password](#)

## Credentials ZIP-file

Click the button to download a ZIP file with your Eucalyptus credentials. Use the public/private key pair included therein with tools that require X.509 certificates, such as Amazon's EC2 command-line tools.

[Download Credentials](#)

## Query interface credentials

## Search

Search

## All Images

The Store is now open, and the following images are already available for you to enjoy in your UEC installation. Please check back soon for more images.



by

**Canonical**

### Ubuntu 9.10 RC - Karmic Koala (amd64)

**Image version:** 20091022

Ubuntu 9.10 Release Candidate image for amd64.

[read more...](#)

Installed

[How to run?](#)



by

### Ubuntu 9.10 RC - Karmic Koala (i386)

**Image version:** 20091022

Ubuntu 9.10 Release Candidate image for i386.

Install

- [Dashboard](#)
- [Send Feedback](#)
- [Knowledge Base](#)
- [Onward, Inc.](#)
- [Administrators](#)
- [Alerts \(4\)](#)
- [Stored Scripts](#)
- [Cloud](#)**
- [Custom Graphs](#)
- [Support Cases](#)
- [Access](#)
- [Activities](#)
- [Pending Computers](#)
- [Computers](#)
- [Tags](#)
  - [empty \(0\)](#)
  - [laptop \(2\)](#)
  - [server \(3\)](#)
  - [webfarm \(2\)](#)

## Cloud created.

### Details



## Private cloud

[Edit](#) [Remove](#)**Endpoint:** <http://mycloud:8083/>

### Key pairs

Create a new key pair:

#### Key pair name

 [example-key-name](#)

### Instances

[Create new instances](#)

### Security groups

Create a new security group: Name:  Description:

Your cloud has the following security groups registered:

Name	Description
<input type="checkbox"/> <a href="#">web</a>	Web access requests



Ubuntu Start Page Elasticfox

Regions: clc1 Credentials: clc1-admin Account IDs Tools About

Instances Images KeyPairs Security Groups Elastic IPs Volumes and Snapshots Bundle Tasks Availability Zones Reserved Instances Virtual Private Clouds VPN Connections

### Your Instances

Don't show Terminated Instances

Reservati...	Owner	Insta... ▼	AMI	AKI	ARI	State	Key												
r-3B18077B	local	i-485707F9	ami-cebc105d	aki-fadc15f2	ari-df291564	running	mykey	...	...	0	...	...	...	...	...	...	...	...	...

## Want more?



- <http://www.ubuntu.com/cloud>
- <http://cloud.ubuntu.com> ← blog aggregator
- <http://help.ubuntu.com/community/UEC> ← tuto & doc
- on identi.ca and twitter:
  - @ubuntuccloud
  - @swardley
  - @botchagalupe
  - @nijaba ← me



Thank you