Cloud Platform OpenStack

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What's inside

- Cloud Platform
  - Service Models
  - Deployment Models

- OpenStack as an IaaS Platform

- Where to go from here?

Cloud Platform?

Cloud is…

…a distinct IT environment that is designed for the purpose of remotely provisioning scalable and measured IT resources

Resources include – Physical and Virtual Servers, Software Programs, Storage Networks, Services…
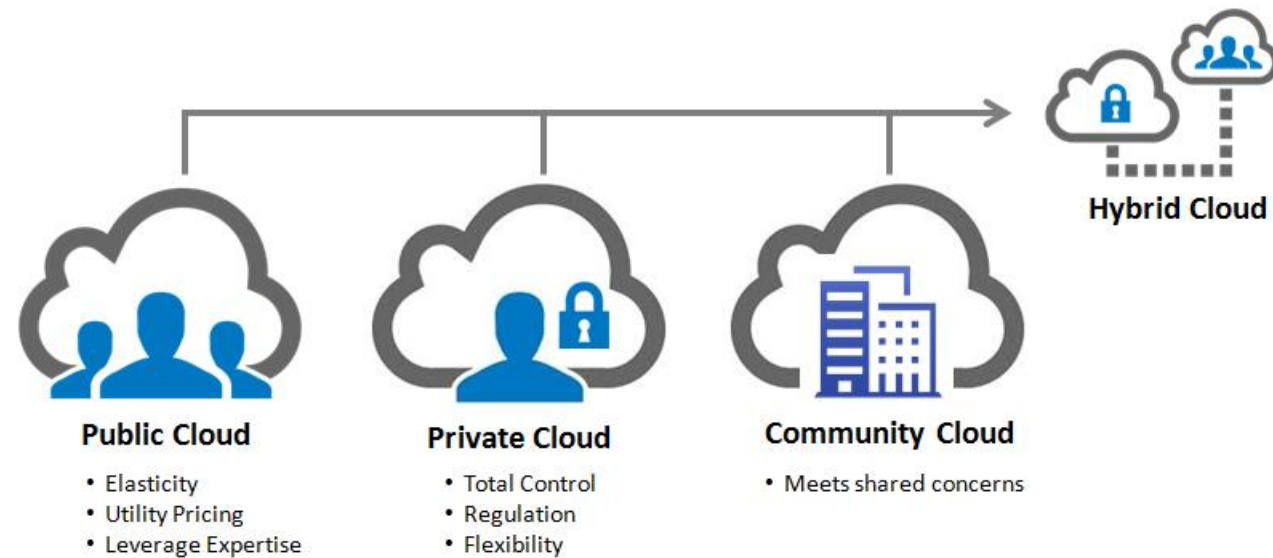
Cloud Service Models

- SaaS – dropbox, gmail, office365

- PaaS – google app engine, Azure

- **IaaS – OpenStack**, AWS, CloudStack

Source: https://community.emc.com/blogs/FabianLee-EMC
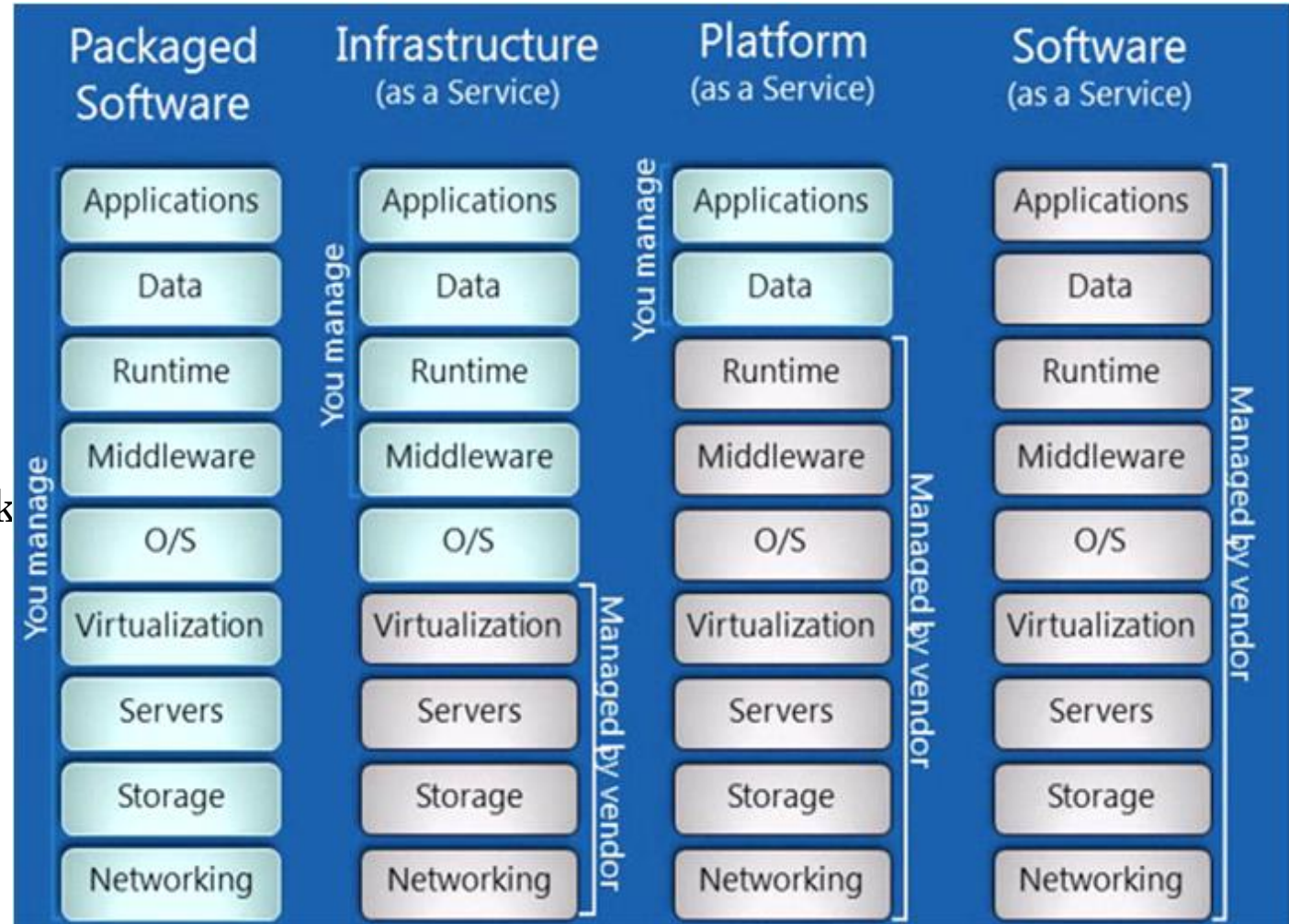
Cloud Deployment Models

- **Public Cloud**

- **Private Cloud**

- Hybrid Cloud

- Community Cloud

Hybrid Cloud

Public Cloud
- Elasticity
- Utility Pricing
- Leverage Expertise

Private Cloud
- Total Control
- Regulation
- Flexibility

Community Cloud
- Meets shared concerns

Source: http://transformcustomers.com/cloud-computing-benefits-and-challenges/

OpenStack: As an IaaS Platform

- OpenStack is an open source **cloud operating system** that controls large pools of **compute, storage, and networking** resources throughout a datacenter, all managed through a dashboard that gives administrators control while empowering their users to provision resources through a web interface.
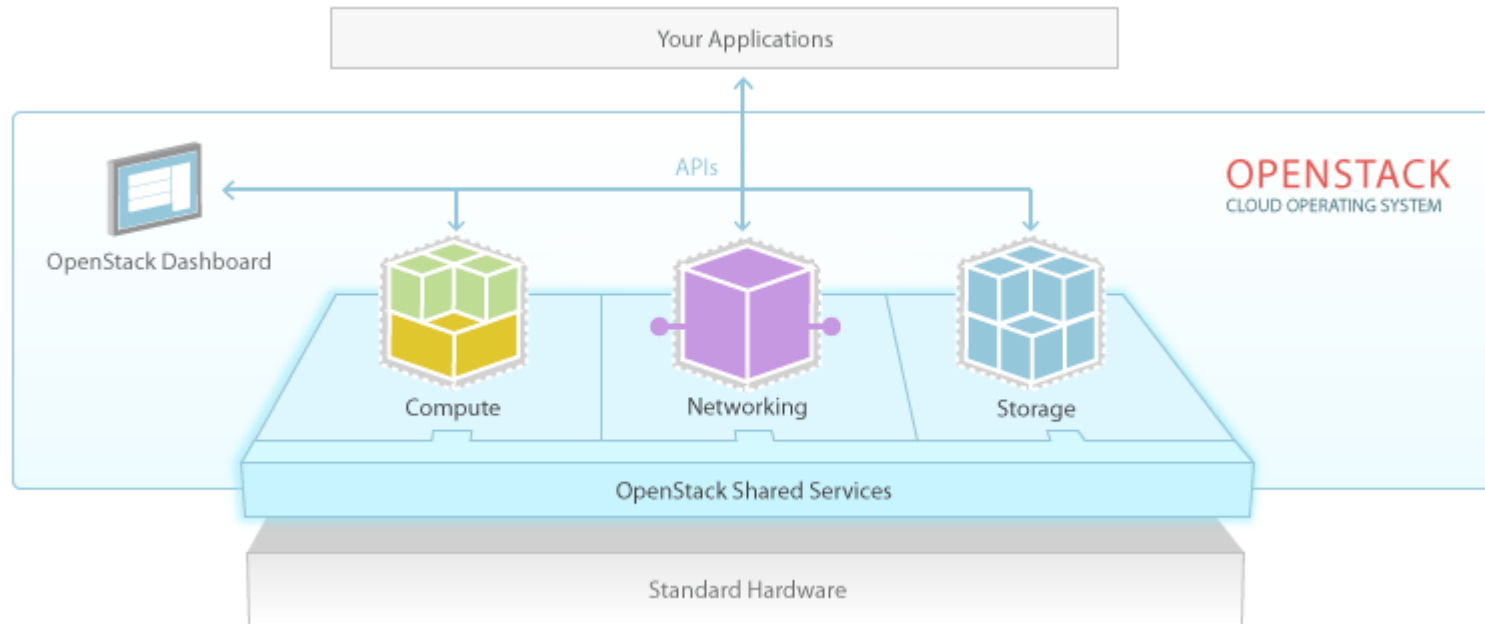
- The OpenStack foundation's goal is to produce … Open Source cloud computing platform that will [be] **simple to implement and massively scalable.**

Under the Hood of OpenStack - 1

OpenStack is made up of many different moving parts
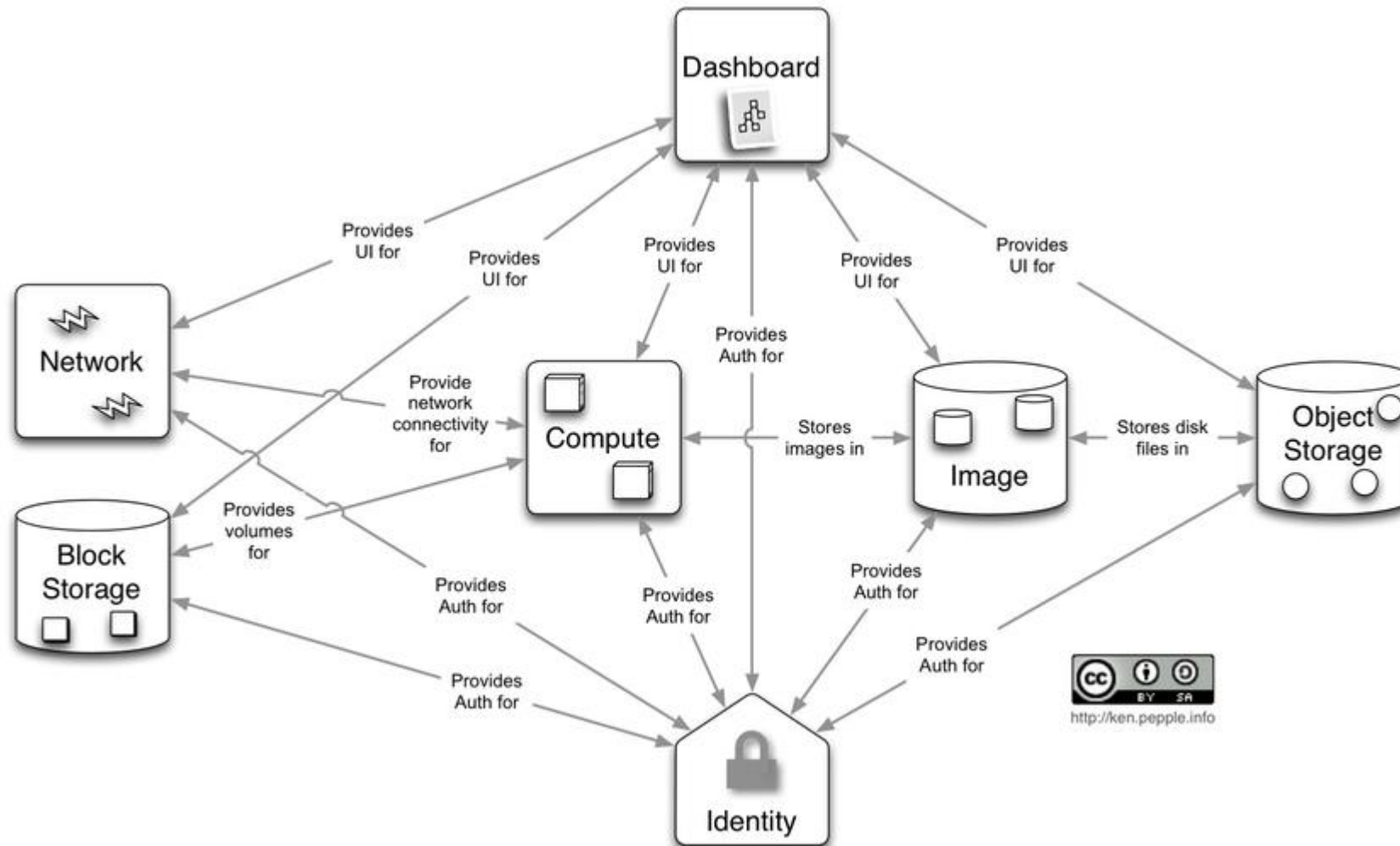
Under the Hood of OpenStack - 2

The Services which form the heart of OpenStack

- Compute (Nova)

- Object Storage (Swift)

- Block Storage (Cinder)

- Network (Neutron)

- Identity/Authentication (Keystone)

- Image Service (Glance)

- Telemetry/Billing Service (Ceilometer)

- Cloud Template Service (Heat)

- Dashboard (Horizon)

- Others – Elastic MapReduce, Shared File System, Security API, DNSaaS etc

OpenStack: View from the Driver's Seat
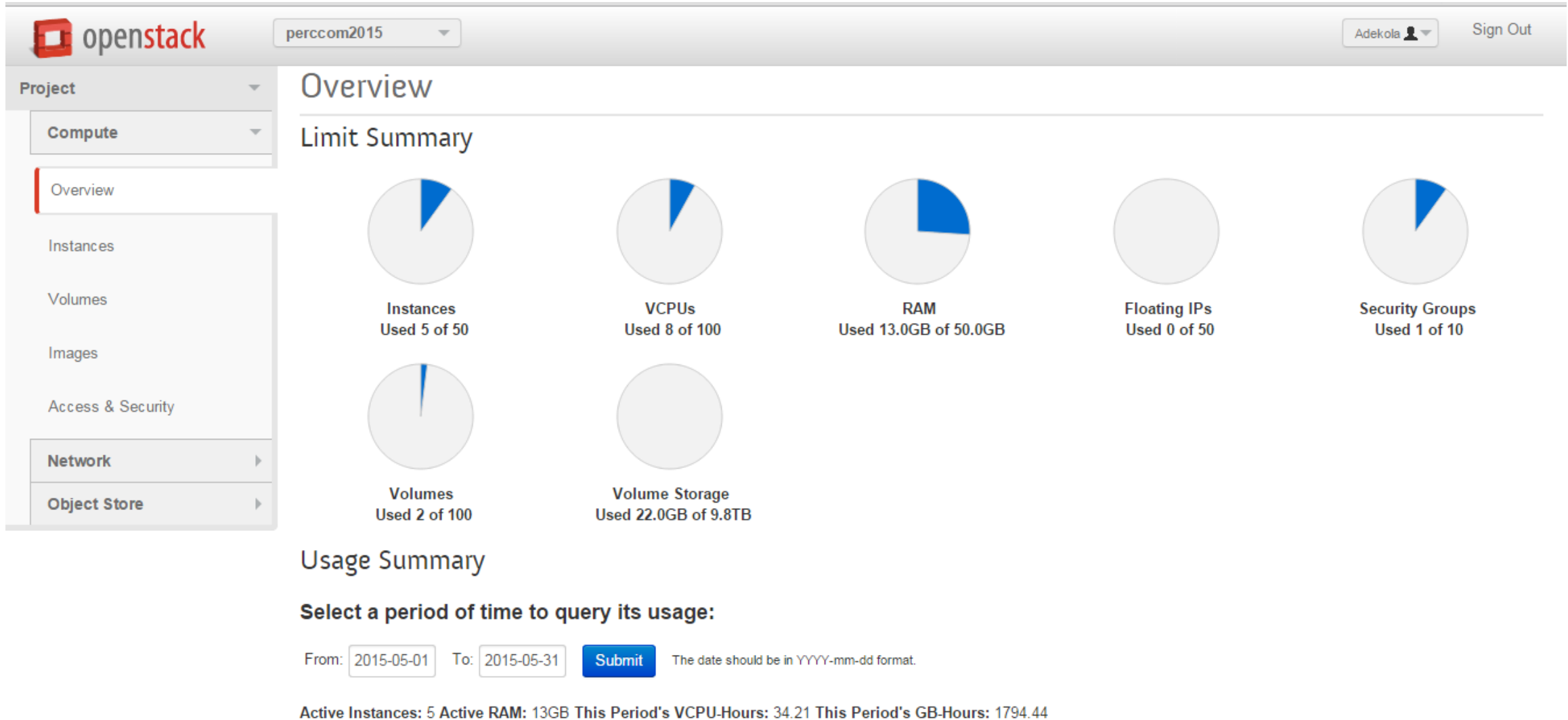
OpenStack: Then till now

- OpenStack began in 2010 as a joint project
  of Rackspace Hosting and NASA

- OpenStack was first made public at the Austin Design
  Summit, attended by 42 partners and
  95 developers between July 13 and July 14, 2010.

- NASA was responsible for the Compute Component

- RackSpace for Object storage component

Source: http://bit.ly/1GiWUzb

OpenStack: Releases, Community and Ecosystem

- Written in Python

- Been through 11 releases starting from Austin (containing only Compute & Storage services) on 21st October, 2010

- Latest version named Kilo (contains 16 services) released April 30th, 2015

- Developed over 6-month release cycles.

- Open Source - https://github.com/openstack

- Managed by the OpenStack Foundation, more than 200 companies have joined the OpenStack project such as HP, Huawei, Ericsson, NetApp, Cisco, SUSELinux, RedHat among others.

- OpenStack Commercial Cloud Offerings: rackSpace, vexxhost, numergy, cloudsuite, city cloud etc.

Who's using OpenStack?

Source: http://bit.ly/1KKm4rb

Source: http://bit.ly/1MegawD
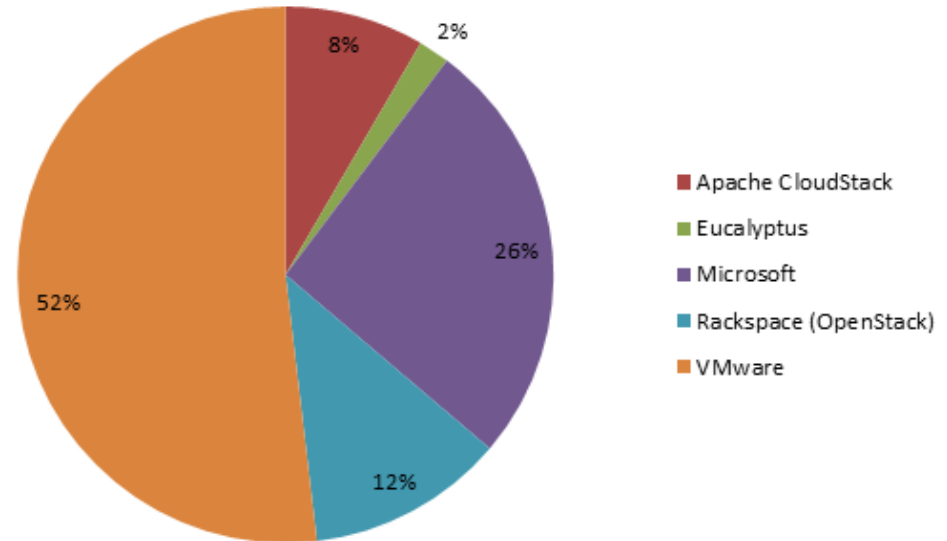
OpenStack's Strong points

- Control & Flexibility: you're not locked to a proprietary vendor

- Industry Standard: > 200 companies are contributing to OpenStack

- Proven Software: used to power some of the largest public & private clouds

- Compatible & Connected: easy to migrate data and applications to public clouds

Where to go from here?

- Starter Pack - http://opensource.com/business/14/2/openstack-beginners-guide

- Join the OpenStack Community - https://www.openstack.org/join

- Try OpenStack for free - http://trystack.org/

- Contribute to OpenStack (and the world ☺) - http://opensource.com/business/14/2/how-contribute-openstack