



Behind the Cloud – pointers to the future

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Perspective

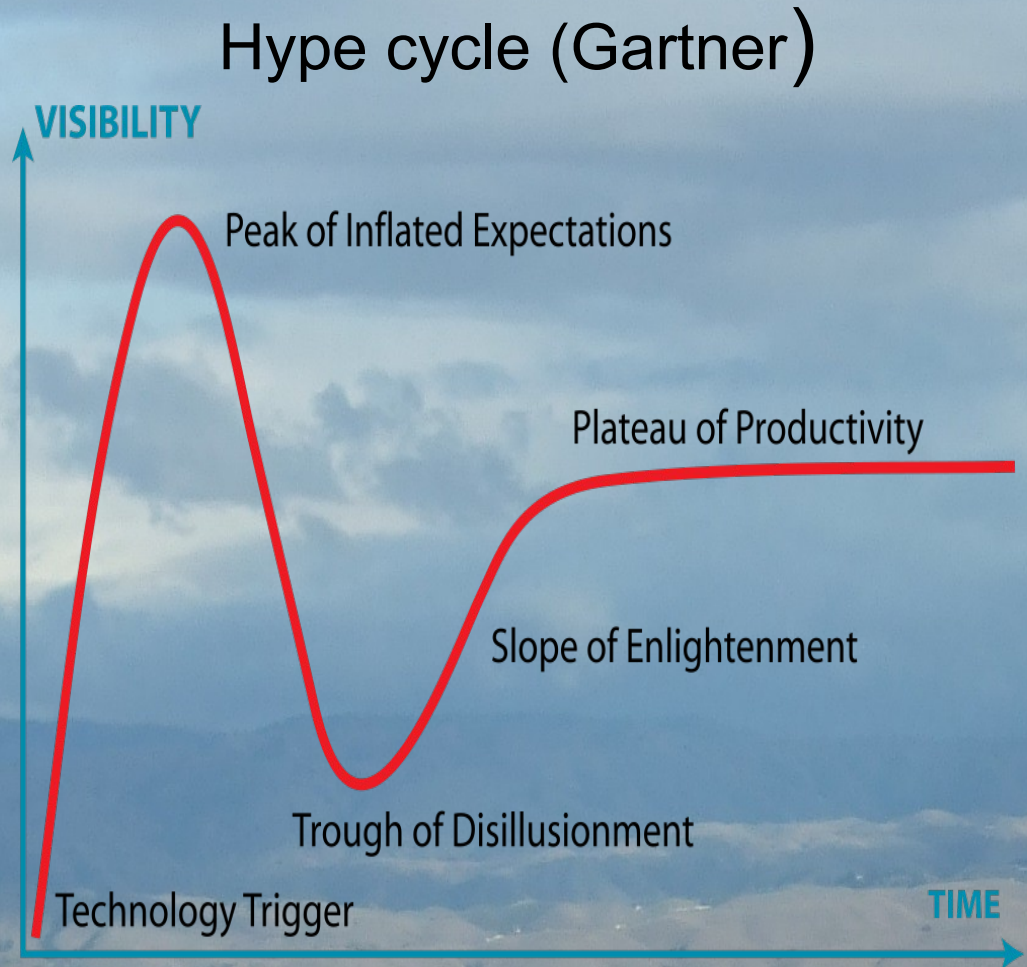
- Mentoring startups – TechStars Cloud, London
- Investing, Advising – Musemantik, Keen.io, cPacket, HybridCluster, Xockets
- Business Development for Arista Networks, XKL, cPacket
- Acquiring companies for Cisco Systems
- Being acquired by Cisco Systems
- Worked for Cisco's UK reseller

The Valley

- Suburban sprawl on what used to be orchards
- S Bay – Sunnyvale Saratoga crossing 85
- San Francisco, San Jose, Oakland, Fremont – in an area about 50 miles on each side, population 10m people – more than Scotland
- Self selecting meritocracy, almost all immigrants
- 3 generations of venture capital investing in technology
- Stanford, SRI, Sequoia Capital

Cloud - enlightenment

- Terminals, Xterm
- Remote hosting
- Remote storage
- AWS
- OpenStack



Cloud Service definition

- Virtualization – increases computing efficiency
- Accessibility – enterprise scale infrastructure available to small and medium businesses
- Scalability and fast provisioning – match requirements to capacity in minutes
- Commoditization – same service from different vendors, different locations

Implications

- More use of handheld devices via apps or mobile web – less capable computers in users hands need more capability somewhere
- More capable processors, cheaper RAM, faster flash drives, bigger cheaper spinning discs – and they can be rented by the minute or the hour. Same for software licenses
- Sharing expertise in datacenter operations and security
- Makes it possible to routinely analyze much bigger, less structured, data sets than before – Big Data, Hadoop, No-SQL

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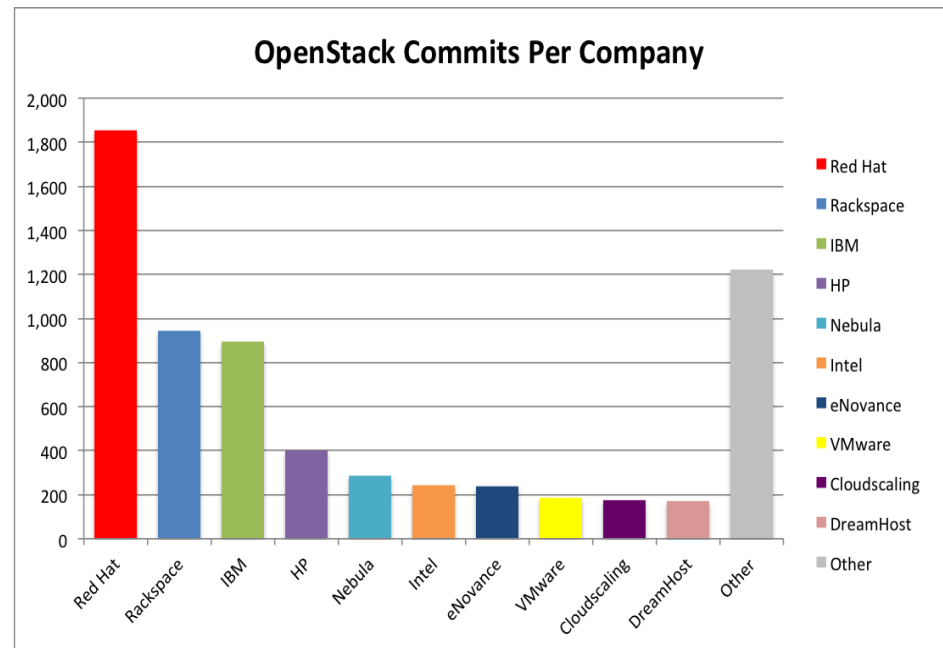
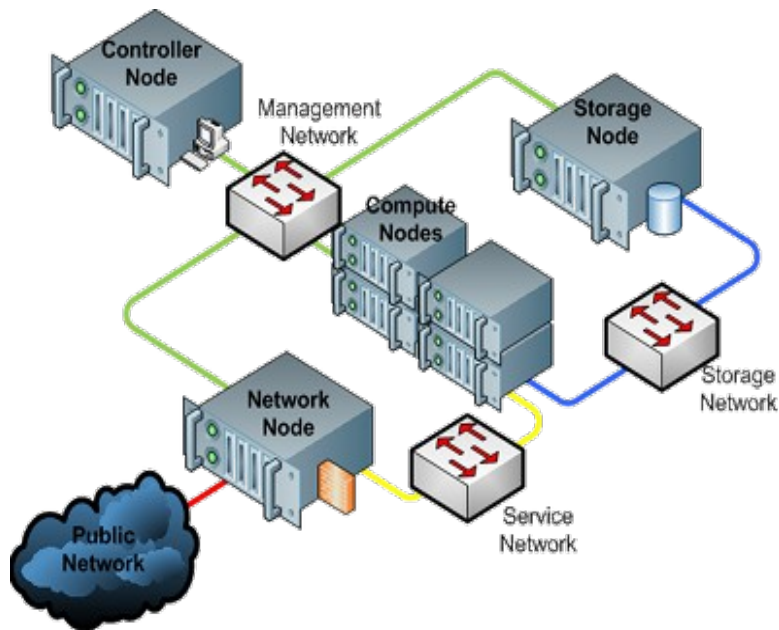


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Directions - Companies

- OpenStack – about where Linux was in 2000
- ZeroVM – new lightweight hypervisor
- Keen.io – big data analytics
- Xockets – big data hardware co-processor
- Hybrid Logic – relocatable files, LAMP stack
- Cloudability – tracking payments for Cloud use
- Cloud Options – services broker

OpenStack



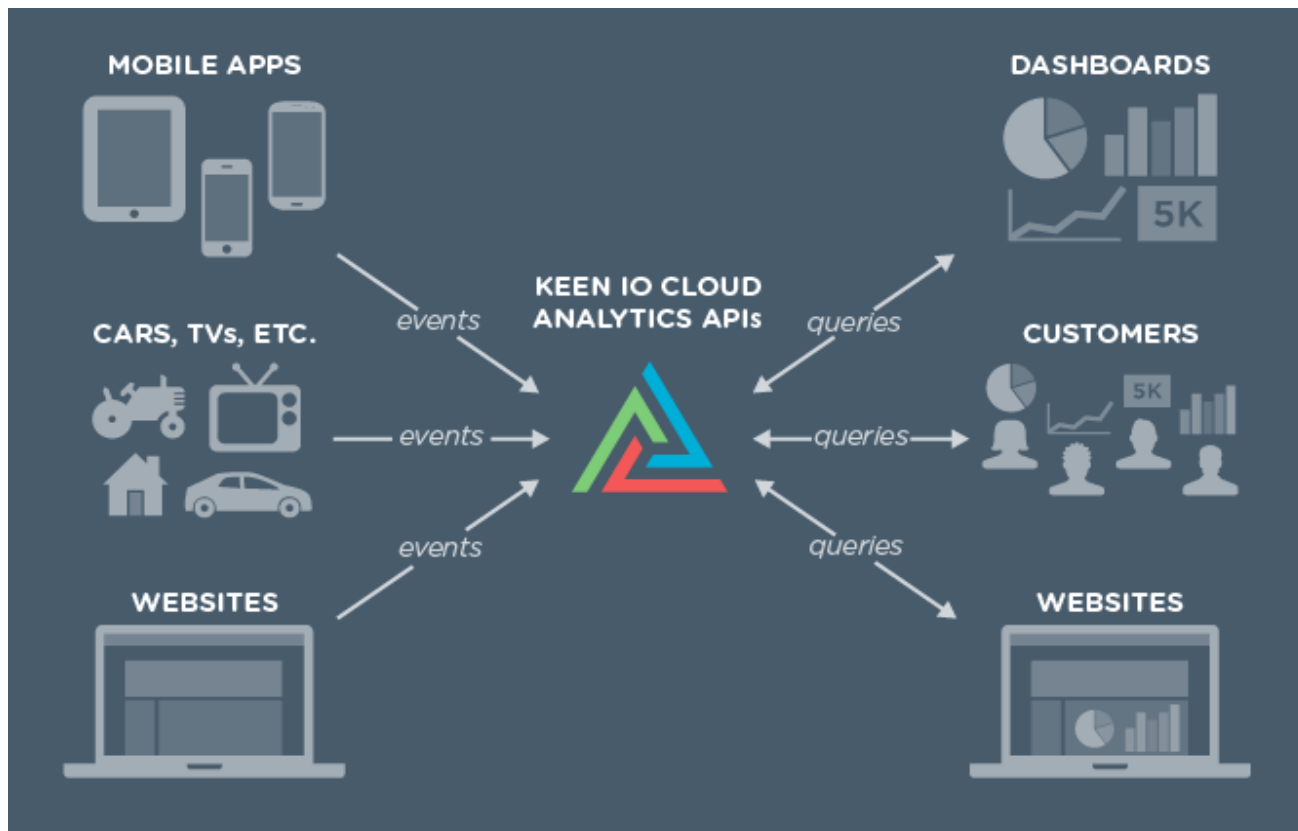
- <http://docs.stackops.org/display/documentation/Install+and+Configure+a+Multinod>
- <http://readwrite.com/2013/04/16/will-red-hats-openstack-contributions-turn-to-gold>

ZeroVM – hypervisor



- New virtual server in $< 5\text{ms}$.
- Each task gets its own container
- Isolates each user of an application
- Unix style processes communicate through pipes
- http://zerovm.org/wiki/The_Cloud_Hypervisor

Keen.io

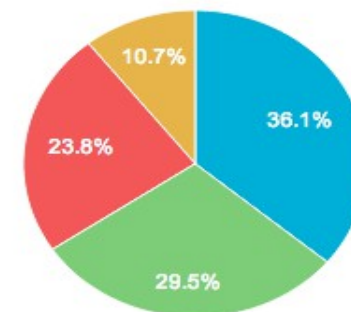


Line Chart Pie Chart Funnel

```
1. var data = new Keen.Metric("purchased", {
2.   analysisType: "count",
3.   timeframe: "previous_7_days",
4.   groupBy: "user.source.type"
5. });
6.
7. data.draw($("#myElementId"), {
8.   title: "Purchases by Source: Last 7 Days"
9. });
```



Purchases by Source: Last 7 Days



- Search Engine
- Google Ad
- Facebook Ad
- Reseller



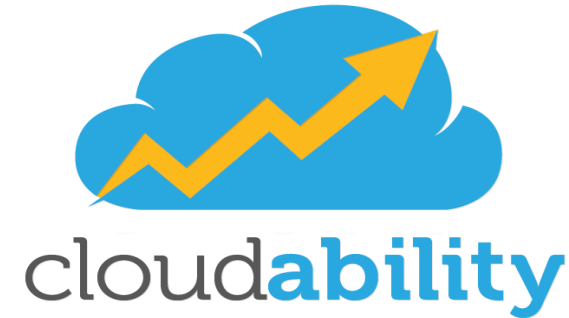
Xockets - co-processors

- Like Intel XEON Phi, or Nvidia GPU
- In DIMM slots, communication over memory channels (not PCI). 6W power constraint
- XIMMs have ARM cores, programmable controller
- Aiming for high volume commodity part market dynamics
- Start with Hadoop acceleration

Hybrid Cluster – managed Cloud

- Public or private platform
- Fail-over across providers and locations
- Live backup, 1 minute auto recovery
- 'Time machine' style reversion to snapshots of web sites, databases, email
- Scale hardware, licenses in use up and down quickly
- <http://www.hybridcluster.com/> HostingCon 17 – 19 June

Cloudability



- Managing cloud costs. Daily, hourly monitoring for use of AWS, Rackspace, etc
- Raised \$1.1m seed, \$8.7m Series A – 1st Techstars Cloud batch
- <https://cloudability.com/>
- Case study – Mentor Graphics using AWS



Strategic Blue

- Cloud services broker.
- Pricing expertise from structured commodities markets applied to cloud computing market. 2nd Techstars Cloud batch
- <http://www.cloudoptions.com/>

Summary

- Cloud on Gartner slope of enlightenment
- Amazon's web services (AWS) and advertising businesses are reported in a segment the company calls "other." Revenue from this area surged 59 percent to \$798 million in Q1 2013
- Many startups and technologies still in very early development

References

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