Elastic Cloud Costing

Boyd Wilson

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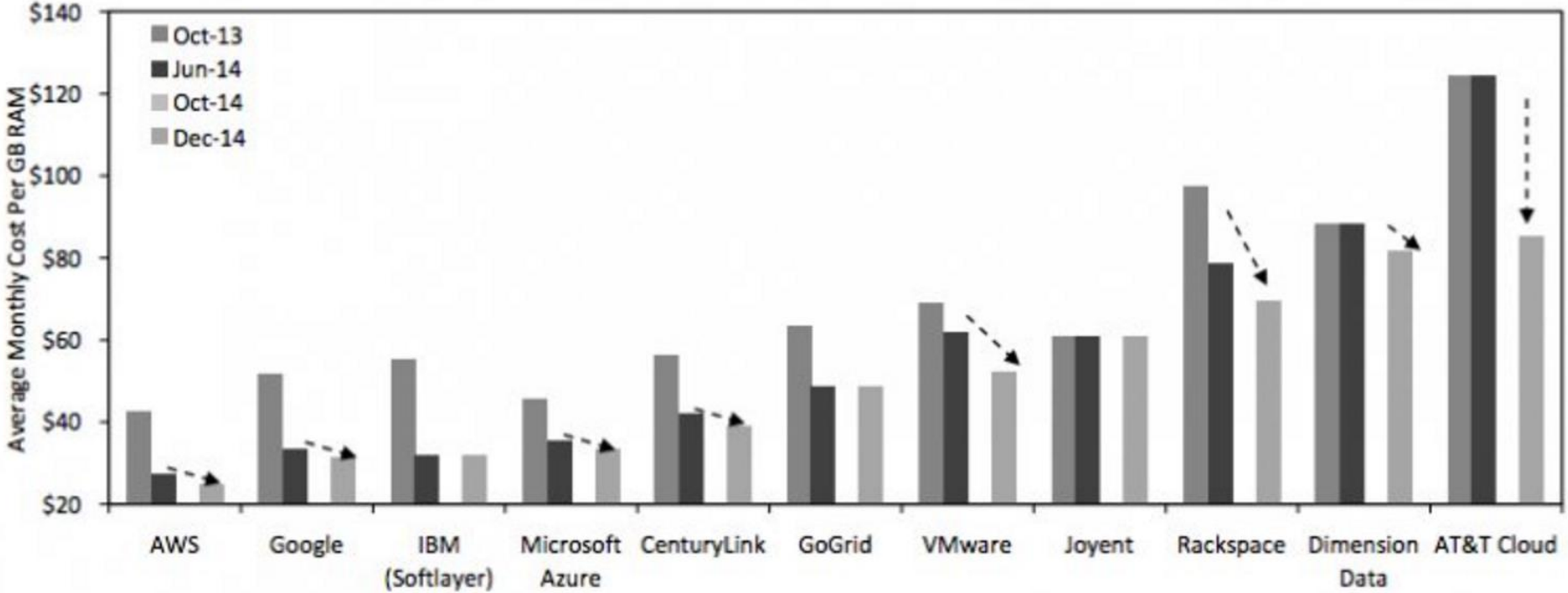
Outline

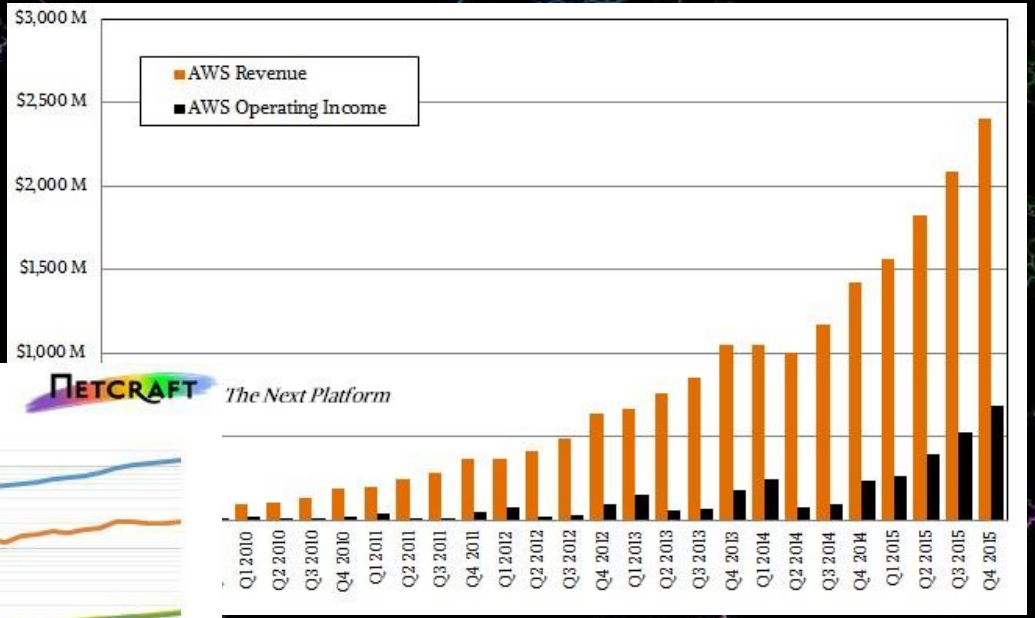
- Costs of Public Clouds
- Trends and Tea Leaves
- Instance Pricing (On Demand, Spot, Reserved)

Costs of Public Clouds (2013-2014)

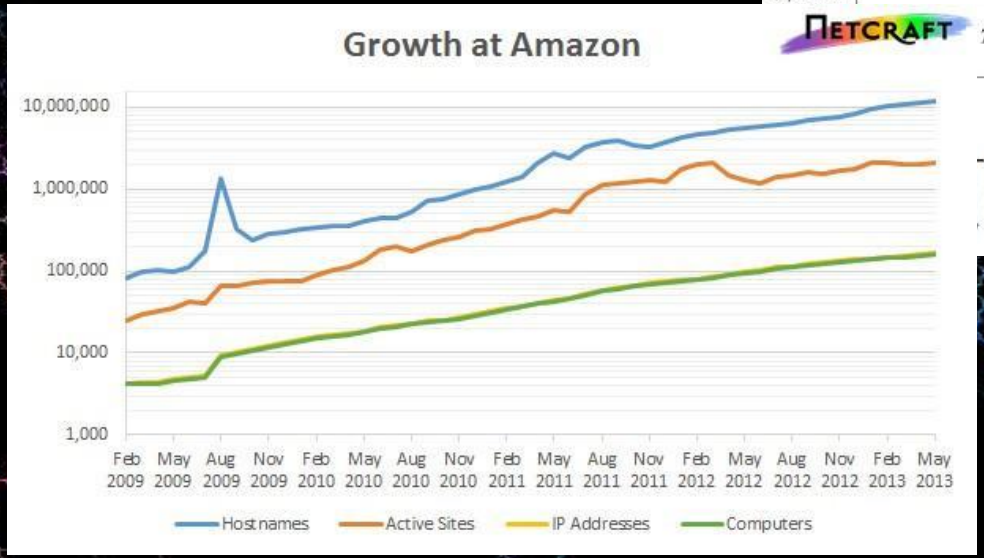
Exhibit 14: Average Monthly Cost / GB RAM across various RBC Use Cases (excluding support costs)



Trends and Tea Leaves



NETCRAFT *The Next Platform*



Computers = public facing

Price War II is coming

- AWS – the Gorilla in the space
  - Gartner May 2015:
    - “10x bigger than its next 14 competitors combined”,
    - “5x the cloud capacity in use than the aggregate total of the other 14 providers”
- Azure – Investing Heavily
  - Just Released ARM (not the processor, 3rd IaaS release)
  - Supports IB
  - “Channel as a Service” will catch others off guard
- Google – Sleeping Giant
  - Silently Releasing more and more AWS like services

Confessions of a Former Data Center Director

- Power and Cooling (kWh)
- Compute Capacity (cost per GB Ram)
- Storage (cost per TB)
- Network (cost per port)
- Costs always calculated at Max Utilization
- Lets not discuss labor, it's a sunk cost…

- Time to Use (depreciation)
  - Per unit costs go down as more use a resource, there is a cost associated with delayed adoption
- Headroom
  - tape library example

Examples of AWS Pricing

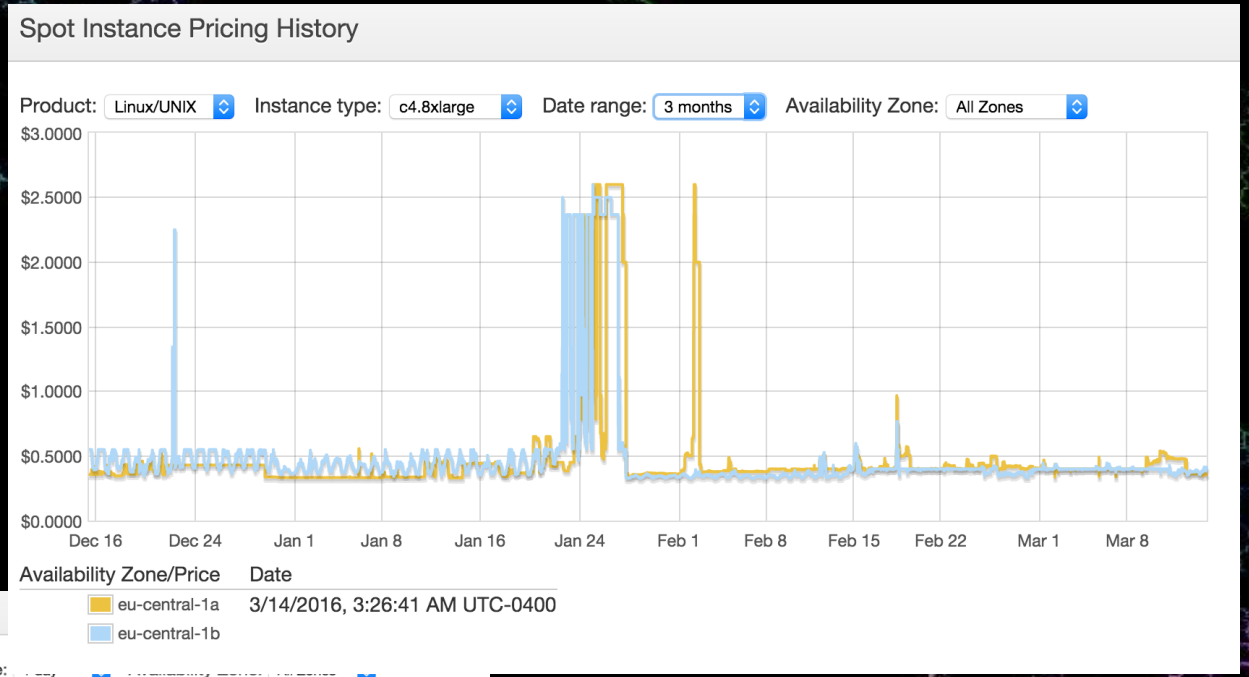
http://ec2pricing.net/

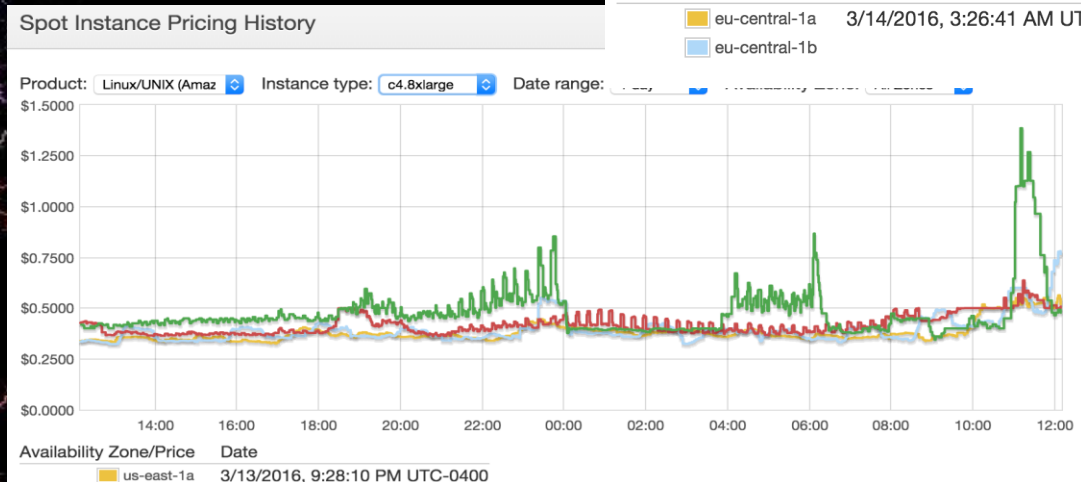
Name	CPUs	RAM	Disk	▲ Network perf.	Reserved	Savings	On demand	Spot
i2.8xlarge	32	244	8 × 800 GB SSD	10 gigabit	$3.392	50%	$6.820	$0.689
d2.8xlarge	36	244	24 × 2000 GB	10 gigabit	$3.216	42%	$5.520	$0.567
hi1.4xlarge	16	60.5	2 × 1024 GB SSD	10 gigabit	$1.698	45%	$3.100	$0.269
hs1.8xlarge	16	117	24 × 2048 GB	10 gigabit	$2.574	44%	$4.600	n/a
cg1.4xlarge	16	22.5	2 × 840 GB	10 gigabit	n/a	n/a	$2.100	$21.000
r3.8xlarge	32	244	2 × 320 GB SSD	10 gigabit	$1.672	37%	$2.660	$0.351
cc2.8xlarge	32	60.5	4 × 840 GB	10 gigabit	$1.090	45%	$2.000	$0.296
c4.8xlarge	36	60	(EBS-only)	10 gigabit	$1.242	26%	$1.675	$0.364
c3.8xlarge	32	60	2 × 320 GB SSD	10 gigabit	$1.168	30%	$1.680	$0.437
g2.8xlarge	32	60	2 × 120 GB SSD	10 gigabit	$1.896	27%	$2.600	$0.809
c4.4xlarge	16	30	(EBS-only)	high	$0.621	26%	$0.838	$0.171

For Example: spot cc2.8xlarge over 4 yrs = ~10k Spot,

This is less than the cost of a server, not to mention Power/Cooling/ Data Center/Labor, but there will be times of preemption and gaps of higher prices

Spot History Spikes



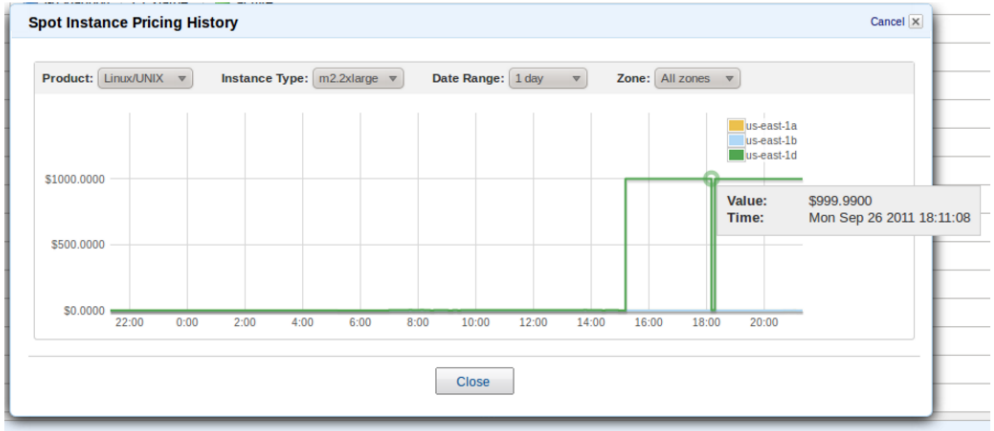


Frankfurt & Virginia Regions

New Spot Limits

Amazon EC2 spot request volatility hits $1000/hour

Date / sep 27, 2011 / **Posted by** / brandon / **Category** / AWS, Cloud Computing, Operations



Now AWS limits your bid to 4x of on demand price

Thank You…

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