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容器时代的云计算

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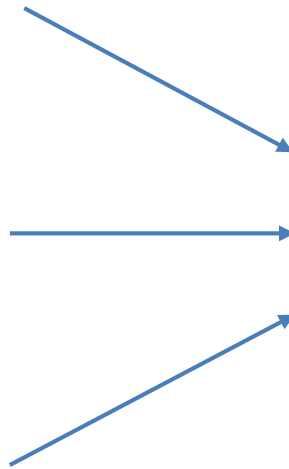
Growth of Devices
and Apps



Growth of Big Data
and Analytics



Growth of
Internet of
Things



Growth of Datacenters

Data center industry in transition

Company	Last report date	Quarterly revenue	YoY growth
HP	Oct 31 2015	\$25.71B	-9.5%
NetApp	Nov 18 2015	\$1.45B	-6.4%
Cisco	Nov 12 2015	\$12.7	+4%
EMC	Oct 21 2015	\$6.08B	+1%
IBM	Sep 20 2015	\$19.29B	-14%

Gartner IaaS Magic Quadrant



2014

AWS **5x** capacity
of the nearest 14
competitors
combined

2015

AWS **10x** capacity
of the nearest 14
competitors
combined

Cloud IaaS is not a commodity.

Lydia Leong, Gartner

What about private cloud?



Bits or pieces

A node between the physical and digital.
The rants and raves of Simon Wardley.
Industry and technology mapper, business strategist.
"I like ducks, they're fowl but not through ch...

[Home](#) → [Data Center](#) → [Data Center Blog](#)

Doubt Creeps Into OpenStack

Doubts about OpenStack put the focus on the open source cloud platform's weaknesses.

By [Arthur Coy](#) | Posted Nov 13, 2015



Page 1 of 1 | 1000+ Views

The OpenStack community recently wrapped up what can only be described as a successful summit in Tokyo,...

[Technology](#) [IT Business](#) [Careers](#) [Tu](#)

Tuesday, July 16, 2012

The trouble with OpenStack

Depending upon which analyst or flat earther you listen to, then OpenStack rules. I don't buy this for a second and instead take the view it's most likely to be a dead duck. Why?

Well, from its very beginning, when I put OpenStack on stage at OSCON Cloud Summit in 2010, I warned several of the executives behind the project on the dangers of Amazon's ecosystem. Being an Amazon clone and co-opting was priority number one in my view. Alas, they wanted to talk

[Home](#) > [Features](#) > [Cloud Computing](#) > [The Guardian goes all-in on AWS public cloud after OpenStack 'disaster'](#)

The Guardian goes all-in on AWS public cloud after OpenStack 'disaster'

The Guardian is moving its entire IT estate to Amazon Web Services



Matthew Finnegan
November 17, 2015

While The Guardian has ditched the open source cloud platform, British Gas Connected Homes is setting up OpenStack cloud to hold sensitive data on-premise

The Guardian has revealed that it is moving all its infrastructure to Amazon Web Services' public cloud, after a project to deploy the open source platform OpenStack in its own data centres was aborted.

Why has OpenStack not succeeded?

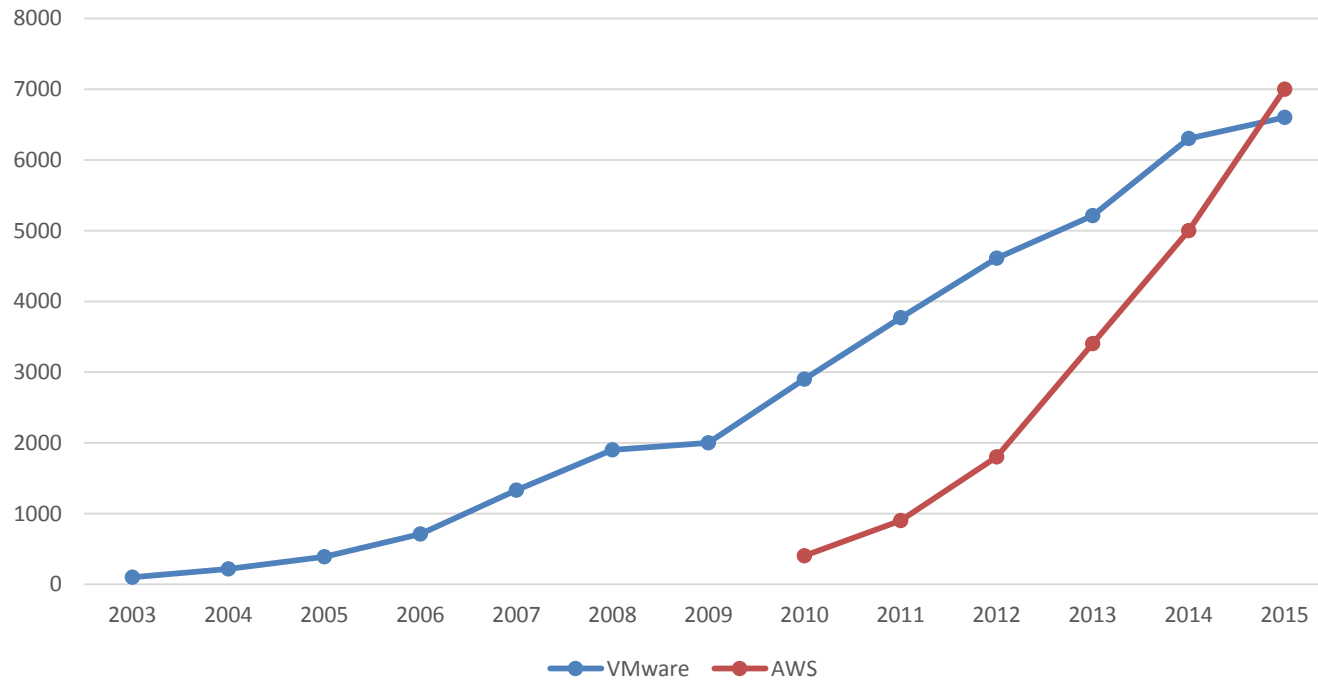
The real problem: built it, but nobody came



Private Cloud == vSphere

Where do we go from here?

VMware and AWS Revenue (in \$1000,000s)



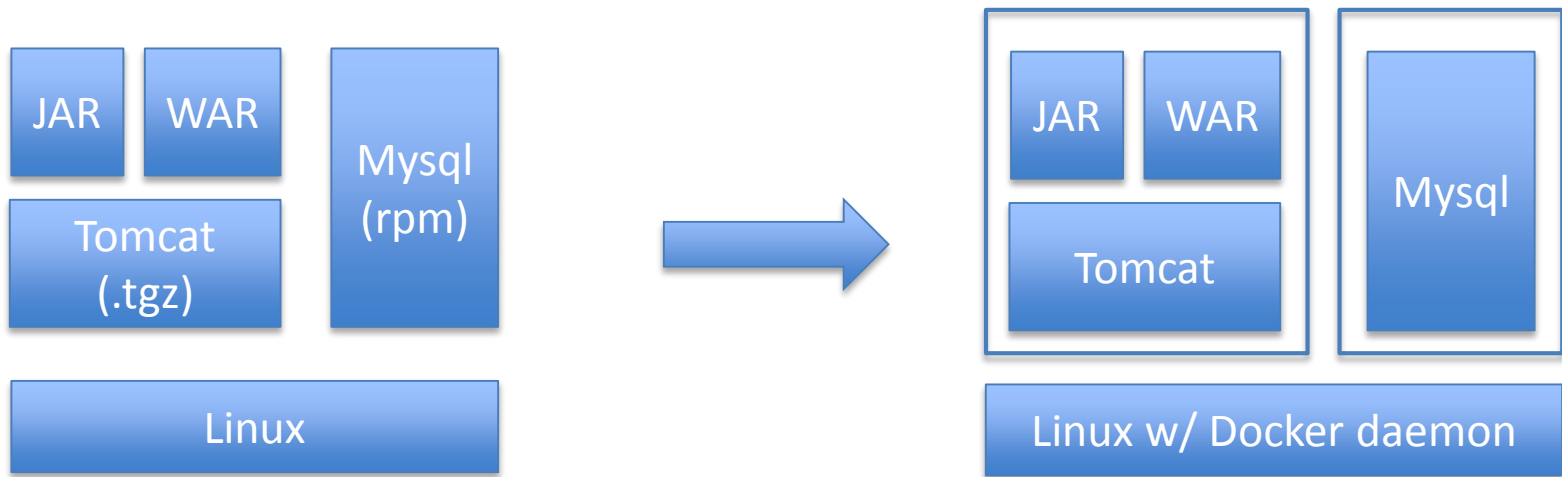
Docker bursts onto the scene

	Dec 2013	Jun 2014	Dec 2014	Jun 2015	6 month growth
GitHub Projects	-	6,500	23k	100k	335%
DH Repos	3,500	14,500	70k	152k	117%
Downloads	240k	2750k	100M	535M	435%

source: Docker projects on GitHub.com

What is Docker?

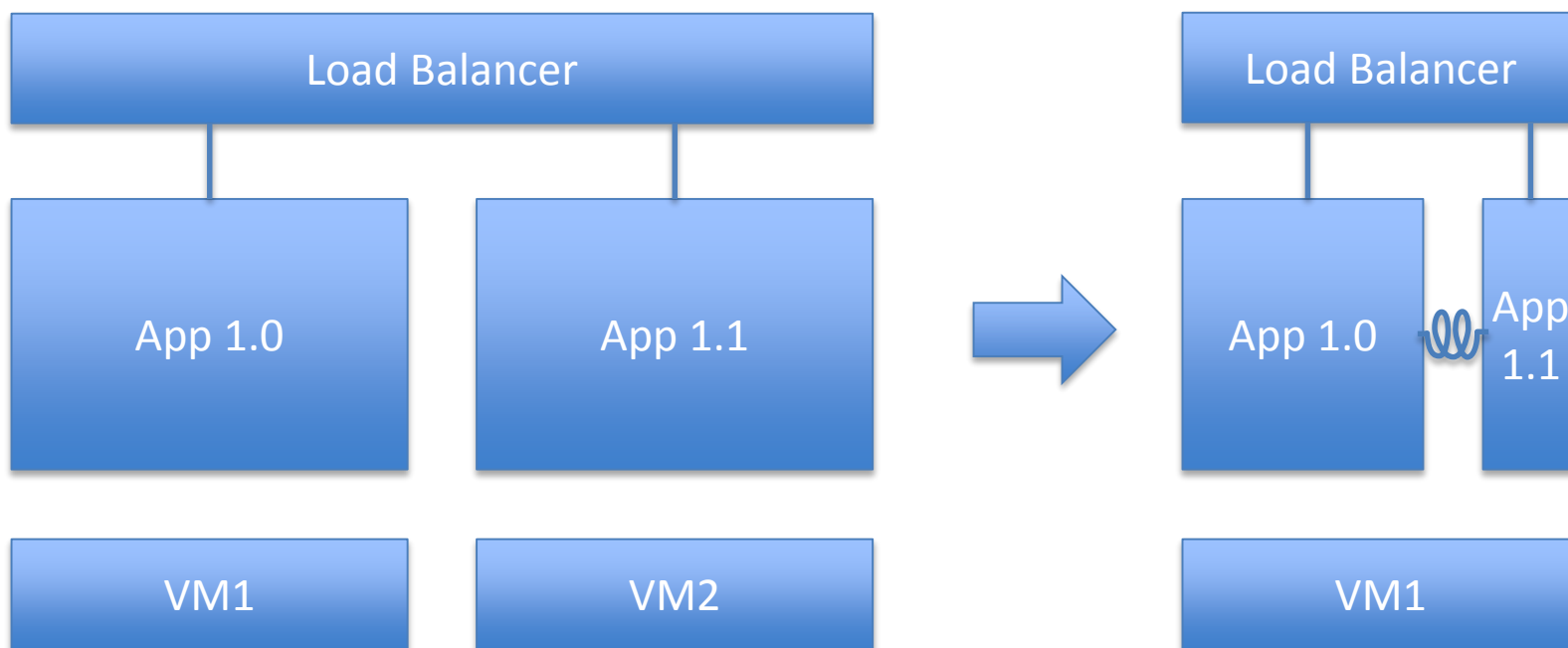
- Not a replacement for VM
- As an application packaging format, it is similar to JAR, rpm, etc.



You do not have to use microservices to run Docker

Why do people use Docker?

One benefit: higher resource utilization



But more importantly: consistent developer experience

Fact: vast majority of Docker users run on AWS



Developer

Operations

The new private cloud: private container service

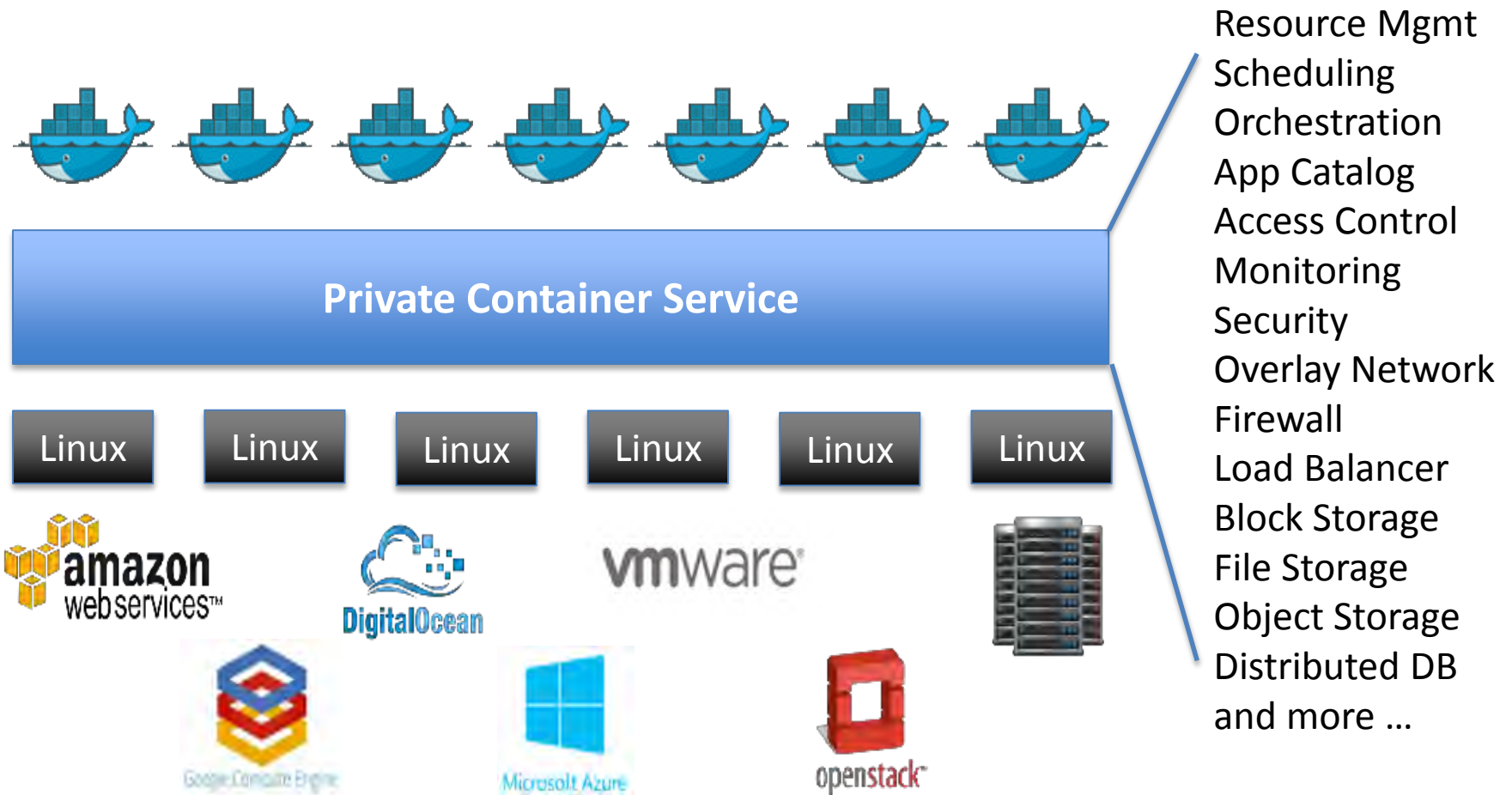


Private Container Service

Linux Linux Linux Linux Linux Linux



What is in a private container service



What is in a private container service

Private
Container
Service



Resource Mgmt	Docker Machine
Scheduling	Swarm, Kubernetes, Mesos
Orchestration	Compose, Kubernetes, Marathon, TOSCA
App Catalog	Helm, Rancher
Access Control	LDAP, AD, GitHub
Monitoring	Stats, Healthchecks, Sysdig, Datadog, etc.
Security	Notary, Kubernetes, Vault
Overlay network	VXLAN, IPSEC, etc.
Firewall	iptables
Load Balancer	HAProxy, nginx, iptables
Block Storage	Ceph, EBS, SAN, etc.
File Storage	Gluster, EFS, NAS, etc.
Object Storage	Swift, S3, etc.
Distributed DB	etcd, consul, mongo, DynamoDB, etc.

Implications of private container services

- Computing resources are a commodity
- Consistent DevOps environment from laptop to cloud



Private Container Service



Development



Test

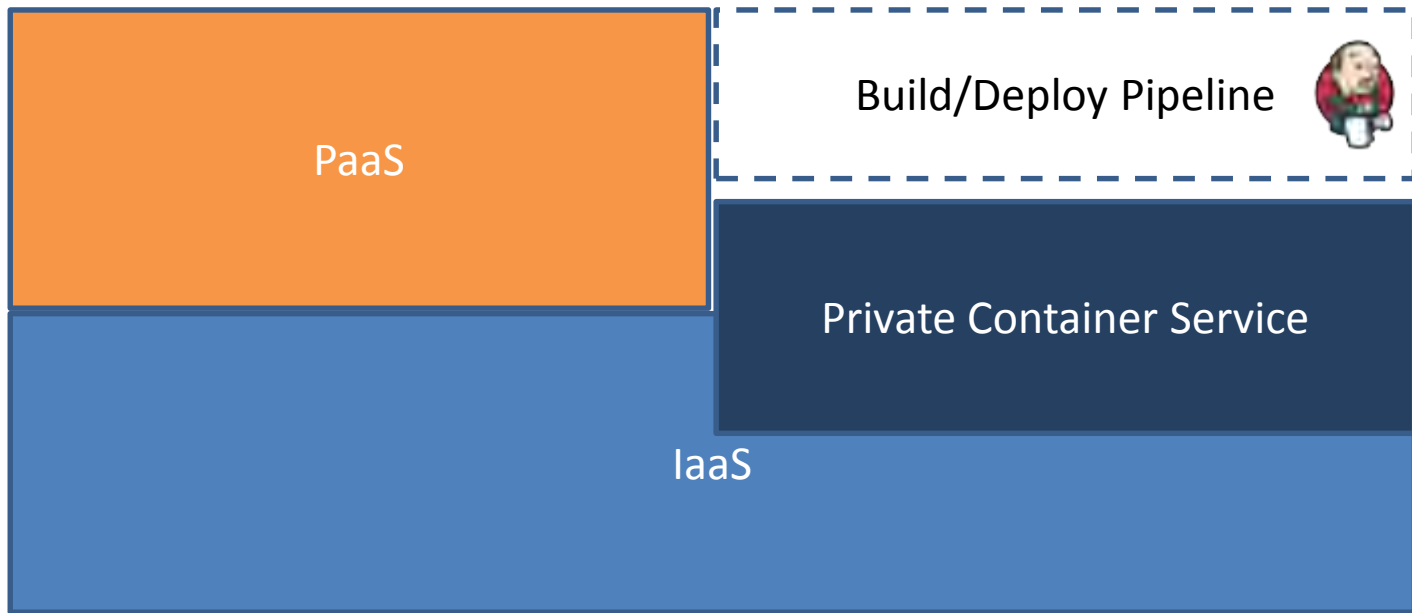


Production

An analogy

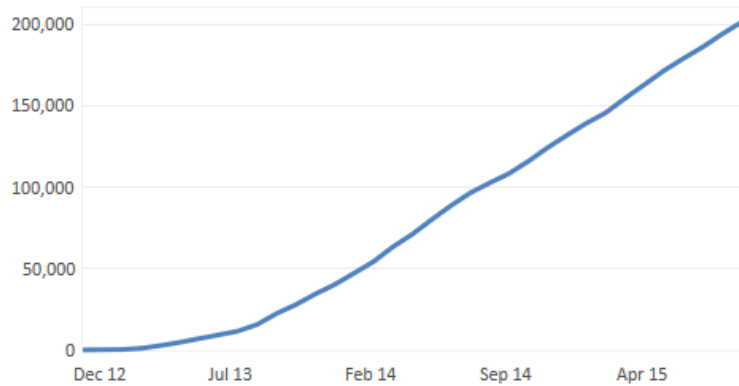


What about PaaS?

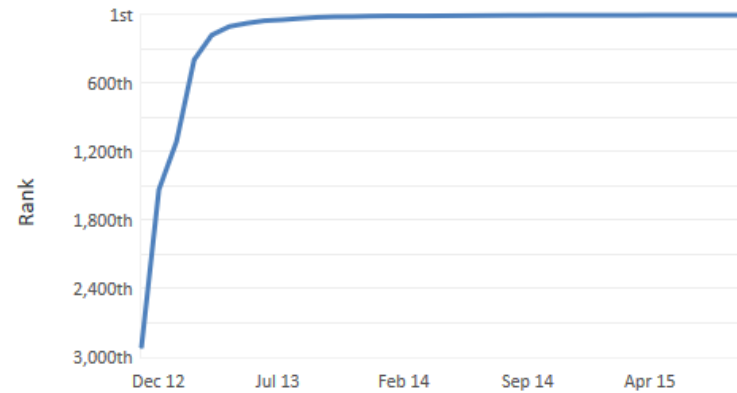


Miraculous growth of DigitalOcean

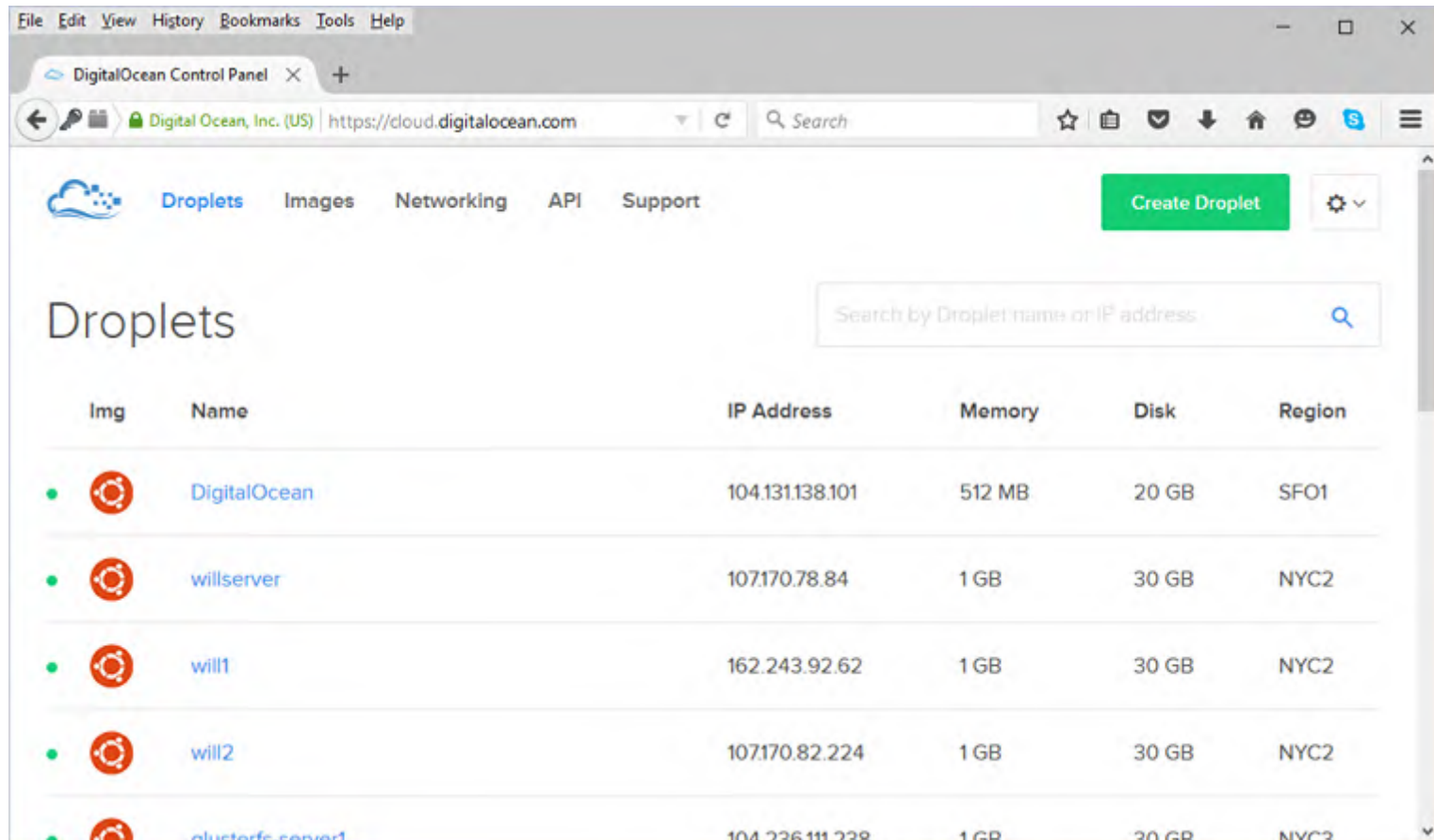
DigitalOcean's Worldwide Growth








DigitalOcean's Worldwide Rank



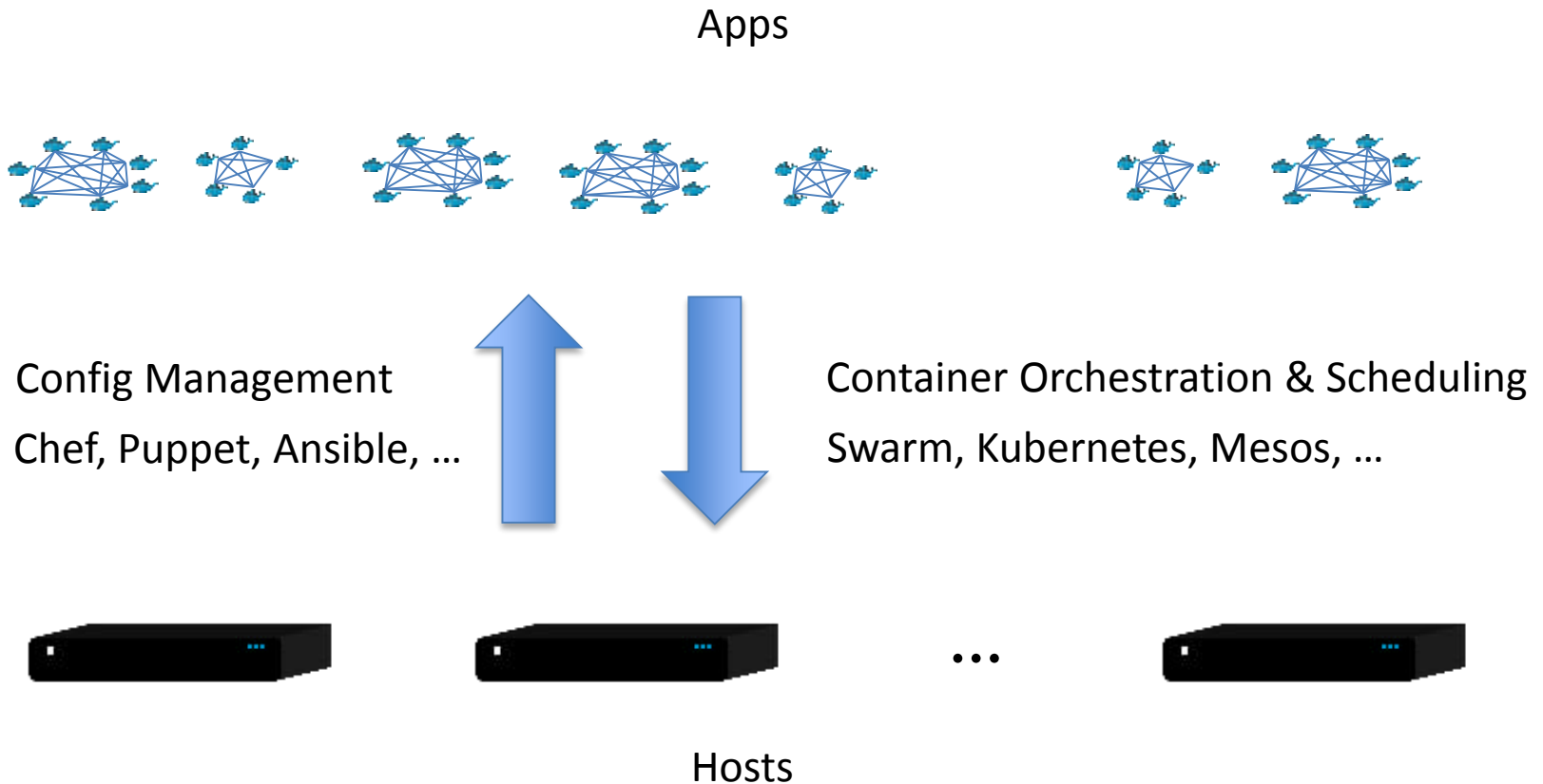
Simplicity wins



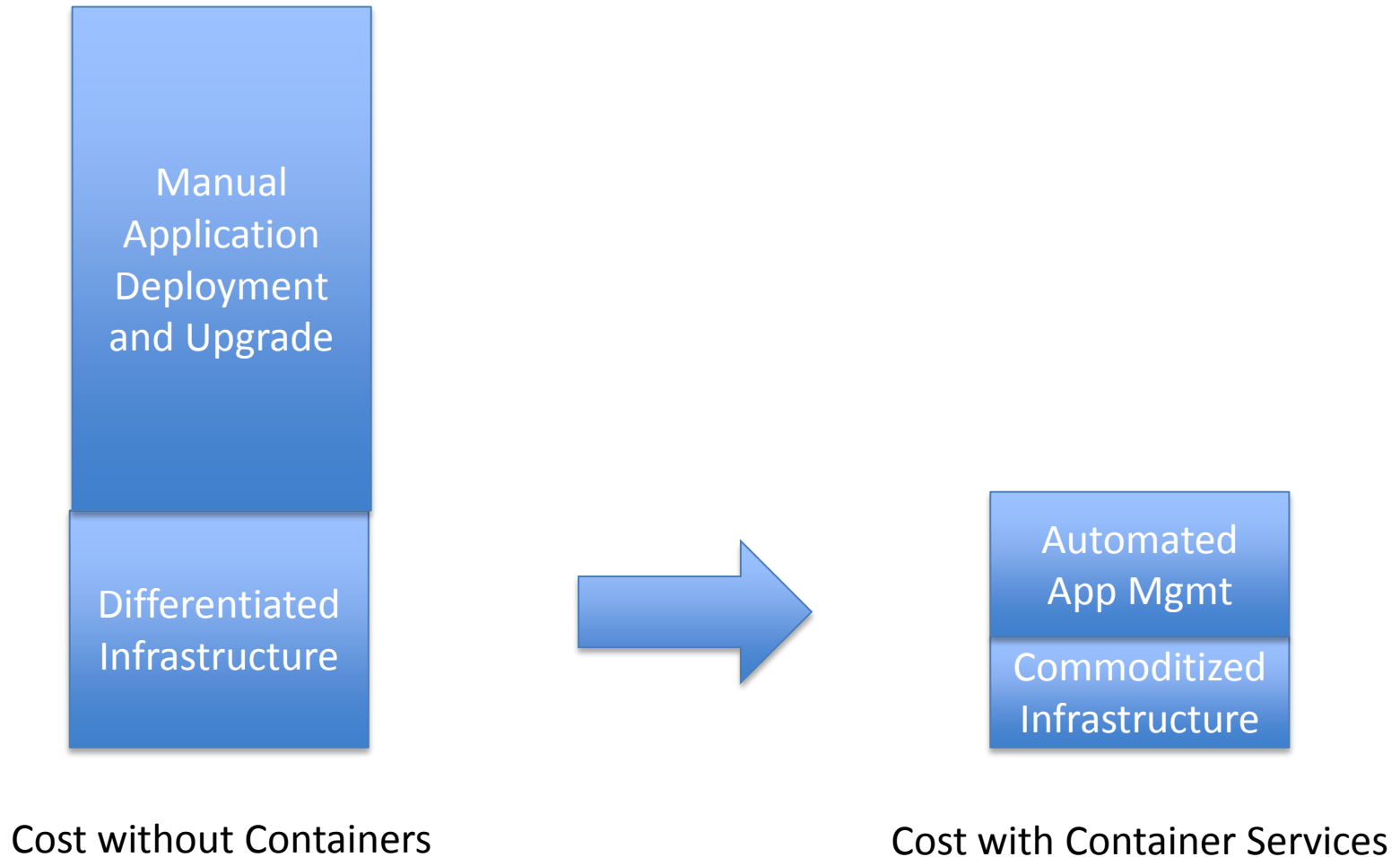
The screenshot shows the DigitalOcean Control Panel interface. At the top, there is a navigation bar with links for Droplets, Images, Networking, API, and Support. A green 'Create Droplet' button is visible on the right. Below the navigation bar, the main heading is 'Droplets', followed by a search bar labeled 'Search by Droplet name or IP address'. A table lists several droplets with columns for 'Img', 'Name', 'IP Address', 'Memory', 'Disk', and 'Region'.

Img	Name	IP Address	Memory	Disk	Region
	DigitalOcean	104.131.138.101	512 MB	20 GB	SFO1
	willserver	107.170.78.84	1 GB	30 GB	NYC2
	will1	162.243.92.62	1 GB	30 GB	NYC2
	will2	107.170.82.224	1 GB	30 GB	NYC2
	clusterfs-server1	104.236.111.238	1 GB	30 GB	NYC3

Two ways of automating application management at scale



What container services give us



One Last Thing

Container live migration is coming



Private Container Service

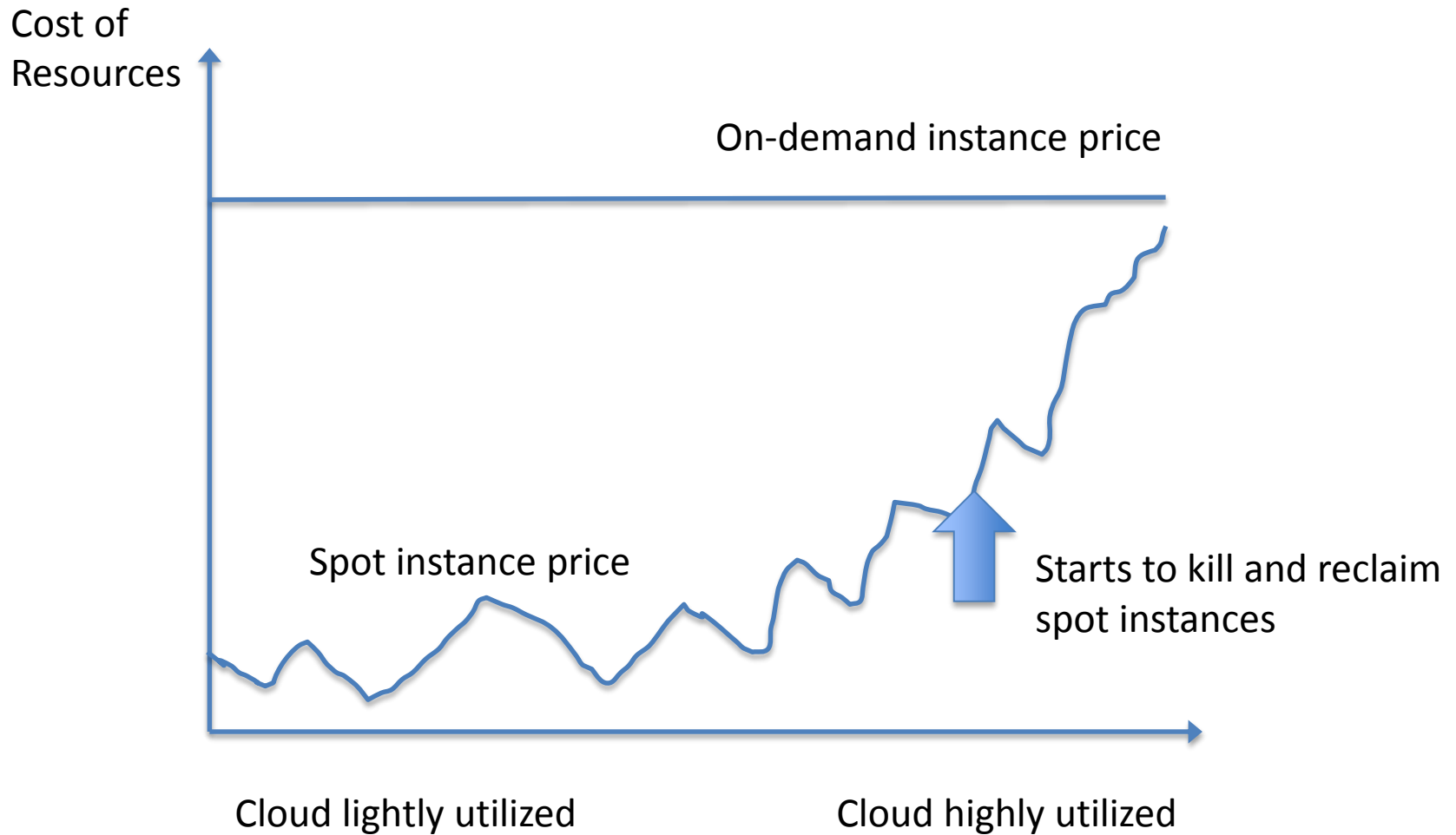


Data Center



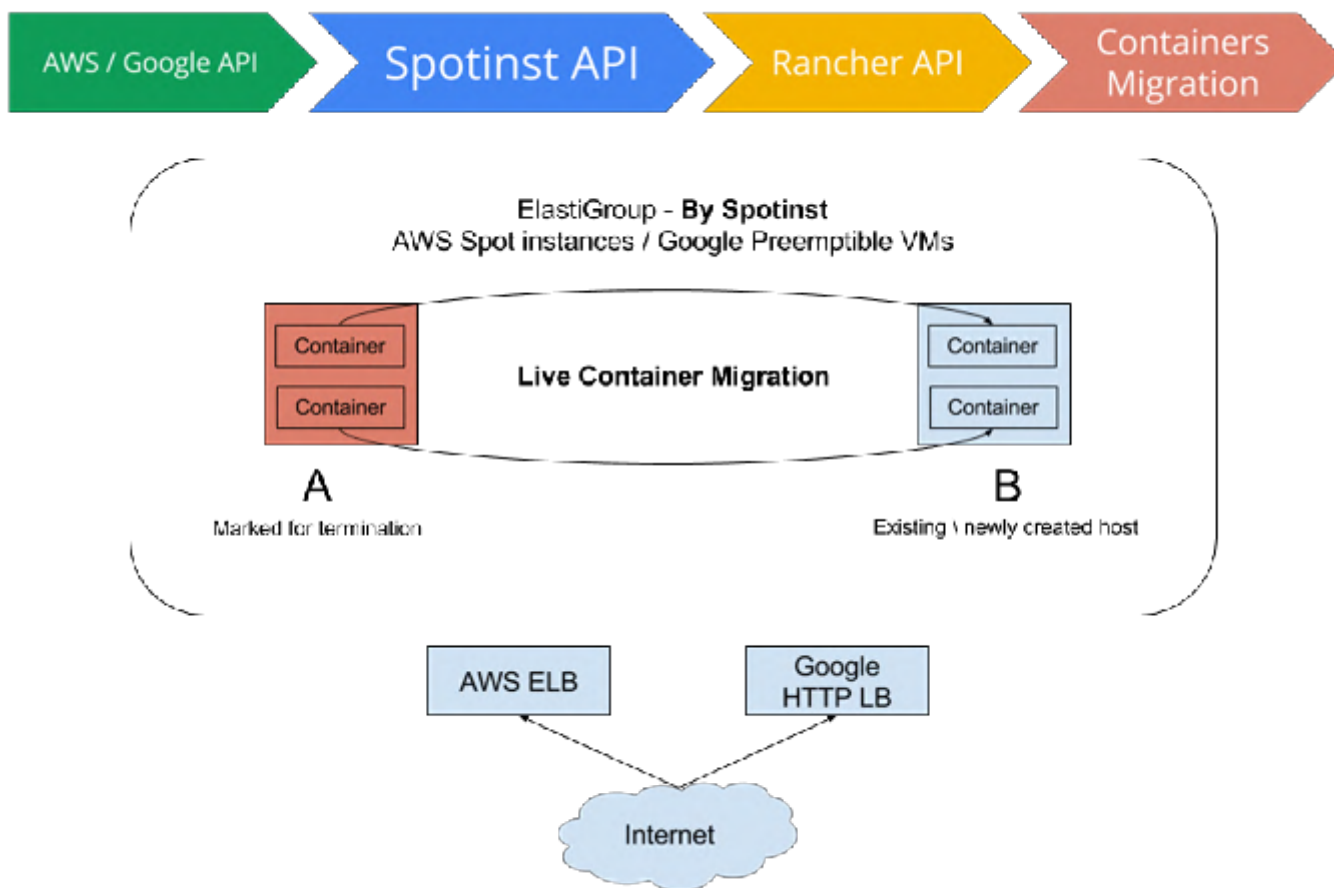
Cloud

AWS spot and on-demand instance



By monitoring spot instance price, we can know 5-10 minutes in advance that AWS will kill and reclaim spot instances

Rancher and Spotinst work together can save your AWS and GCE bill by 70-90%



More info <http://sina.lt/eAAk>

Questions?

sheng@rancher.com

Thanks!

