Hardware and VM Orchestration with More Uptime, Less Futzing; More Performance, Less Hardware

Richard Kiene
Faithlife
Philosophy

Smart, versatile learners + Automation + Commodity hardware

> Expensive vendor solutions
Humble beginnings
Choosing a Private Cloud

- Low cost per rack unit
- No license fees
- Open Source
- Fast guest provisioning
OpenStack Prototype
OpenStack
Trouble
Product Launch

LOGOS 6
There must be a better way

- Havana with Nova Networking instead of Neutron + NFS instead of Ceph
- Ice House with updated Neutron + Ceph with smaller pools
- Havana with Nova Networking + Local storage
Bryan Cantrill
@bcantrill

Thrilled to announce that @SmartDataCenter and @MantaStorage are now open source: joyent.com/blog/sdc-and-m… #smartos #nodejs #openzfs

Columbus, OH

8:04 AM - 6 Nov 2014
SATApocalypse
SDC to the rescue!

Well our @joyent @SmartDataCenter cloud deployment has graduated from the lab to one of our prod data centers. Saving our butt.
Why?

- Easy to deploy
- Small failure domains
- Elegantly simple architecture
- Years of proven reliability
- Opinionated and prescriptive
- We beat the crap out of it and it still worked
Performance

Timothy Dec 4, 2014 16:08
@Anthony, Thank you so much for setting this up. I'm still checking data but that's 3-4x faster than what our old cluster was doing.

Anthony Dec 4, 2014 16:08
nice!! that is awesome news

Timothy Dec 4, 2014 16:09
It truly is.

Anthony Dec 4, 2014 16:09
and with half the resources too... /cc: @Richard

DavidG Dec 4, 2014 16:12
Having only run it once, the DataWarehouse Load also seemed to be a lot faster last night than it has been.

DavidG Dec 4, 2014 16:12
by a few hours.
Green field deployment
Specs

- 1 x Dell R720 Chassis
- 2 x Intel Xeon E5-2650v2
- 1 x iDRAC7 Enterprise
- 1 x Intel X520 DP 10Gb DA/SFP+, + L350 DP 1Gb Ethernet Daughter Card
- 2 x Intel / Dell SR SFP+ Optical Transceiver
- 16 x Dell 16GB RDIMM 1866MT/s (256GB total)
- 2 x 750W Power Supply
- 1 x 200GB Intel DC S3700 SSD
- 1 x Kingston 16GB USB stick
- 1 x SuperMicro AOC-S2308L-L8E SAS controller
- 15 x C10K900 HGST 2.5” 10K 600GB SAS

Modeled after Joyent’s Tenderloin-A/256
http://eng.joyent.com/manufacturing/bom.html
But wait there's more!

- ZFS snapshots
- Active IRC community
- Pull requests welcome
Things to consider before switching

- Live migration isn’t a thing
- Need app level high availability
- Steep learning curve if you’re Windows shop
What does it take to succeed?

- Lots of talk about private cloud failures
- Upside is there for those that crack the code
- Need more than just a great product
Culture

- Development and Operations should be integrated
- Open communication to the entire company
- Blameless
- No silos
- No such thing as “not my problem/job”
- Initiative
Automation

- Allows your platform to adapt
- Reduces mean time to recovery
- Lower overhead
Executive buy-in

When making radical changes, you need an anchor at the top.
T-Shaped People - Rectangle Team

- Person A
- Person B
- Person C
- Person D
Provisioning pipeline

Always be deploying!
Vendors

Big enough to get things done, small enough to care.
Team

People that work for each other and a purpose.