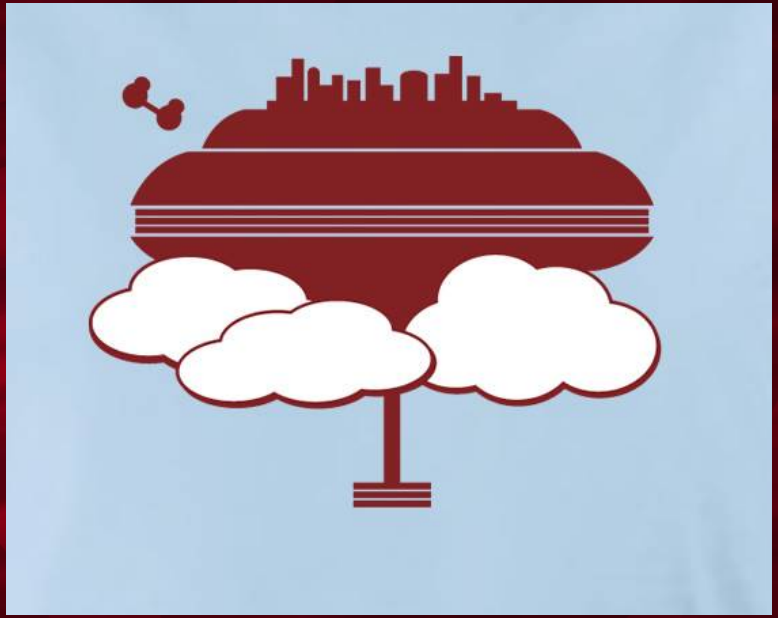
Demystifying Cloud City

(Rackspace Cloud Systems)



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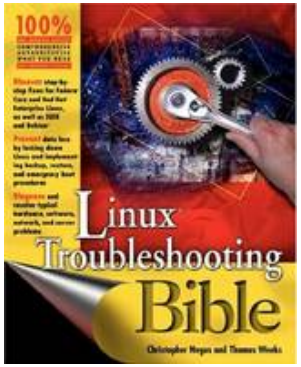
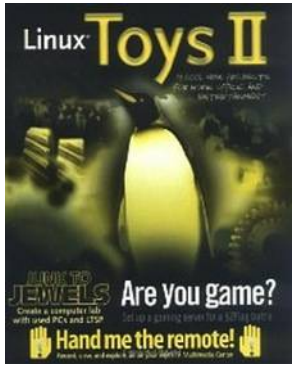
Created by: Thomas Weeks
Modified Date: 2014-09-23
Classification: Public

About Tweeks





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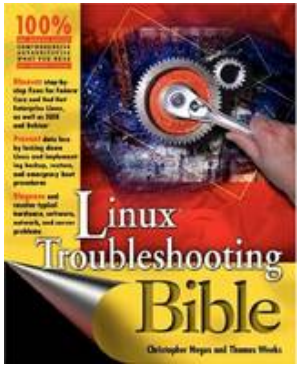

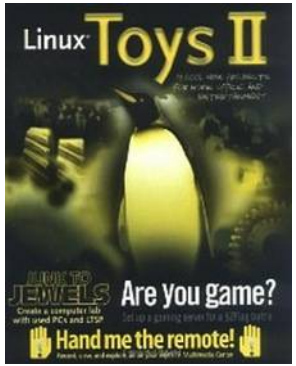

Community S.T.E.M.

XCSSA.ORG

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About Tweeks

Moved → VA
in 2011

About Tweeks

Community S.T.E.M.

About Tweeks

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About Tweeks

Free Technology Workshops

RBTC

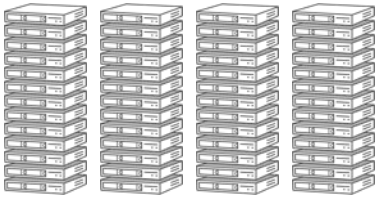
Rack Gives Back™

FANATICALLY SUPPORTING THE COMMUNITY

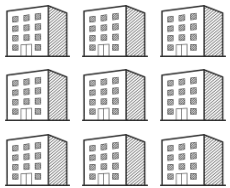
About Rackspace

Global Footprint.

100k+ Servers
500k+ Cloud VMs



9 Worldwide
Data Centers



Over $1.7B Annualized Revenue

We serve 60% OF THE FORTUNE® 100

5,700+ Rackers

Portfolio of Hosted Solutions

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Rackspace in Blacksburg

What We Sell

the rackspace®

cloud

What We Sell Service!

the rackspace®

cloud

What We Sell Service!

Managed

the rackspace® cloud

What We Sell Service!

Access to your own expert engineers 24x7x365 via phone, ticket, or chat.

Custom monitoring, alerting, and intervention of system and app levels.

Custom service levels, for infrastructure guidance, system management, or deep DevOps automation.

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RACKSPACE

Rackspace Vision Since 2005

> “To be recognized as one of the world’s great service companies.”

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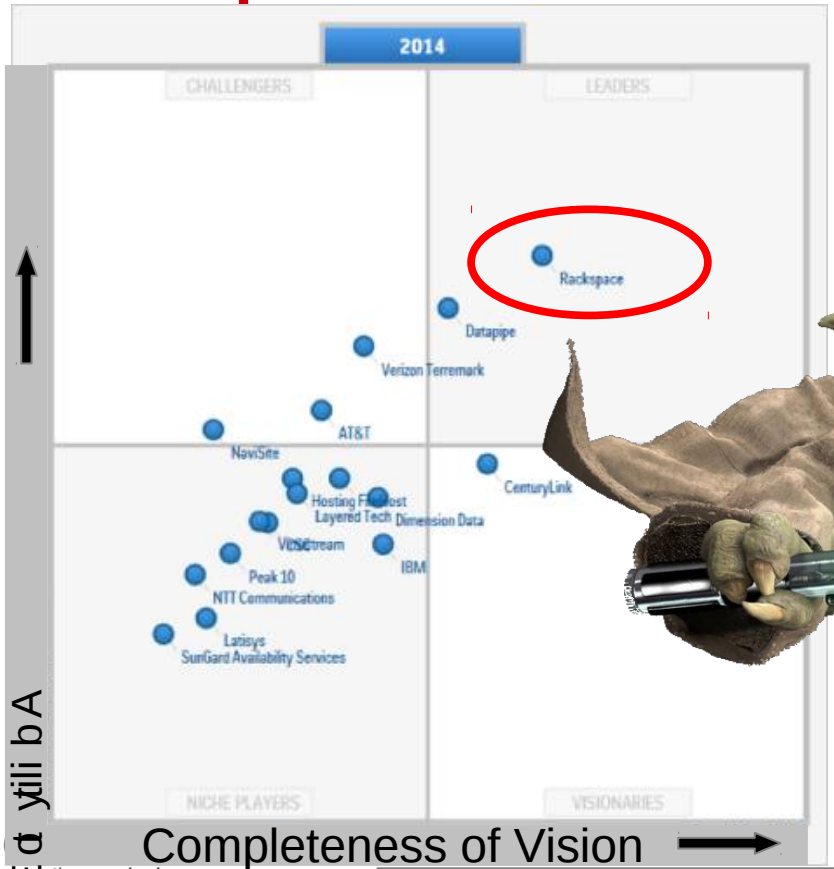
#1 In Managed Cloud, Gartner May 2014,
"Rackspace… Leader in Cloud-Enabled Managed Hosting"*



* - http://www.gartner.com/technology/reprints.do?id=1-1XH78YH&ct=140715&st=sb

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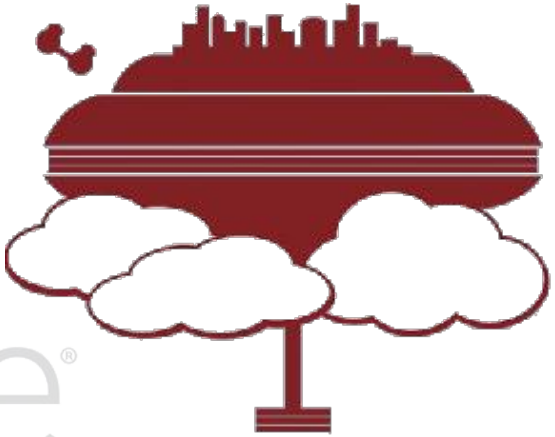
What We Sell

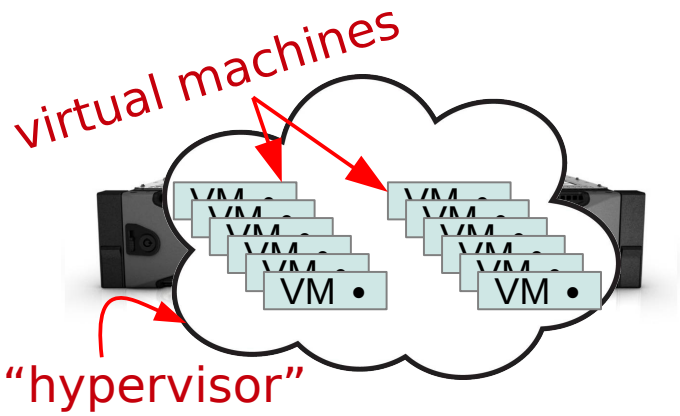


Great.. Buuut...

What *IS* “the cloud”?

What *IS* “The Cloud”?

The Cloud =



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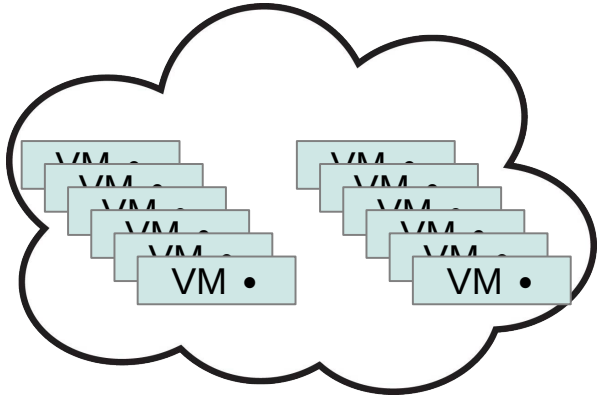
Cloud systems are virtualized computing systems and services that take advantage of economies of scale by turning computing into a commodity or “utility service”, like power or Internet service. You no longer need dedicated hardware infrastructure like servers, hard drives and network devices for all your computational resource needs.

What *IS* “The Cloud”?

The Cloud is-to Dedicated Hardware



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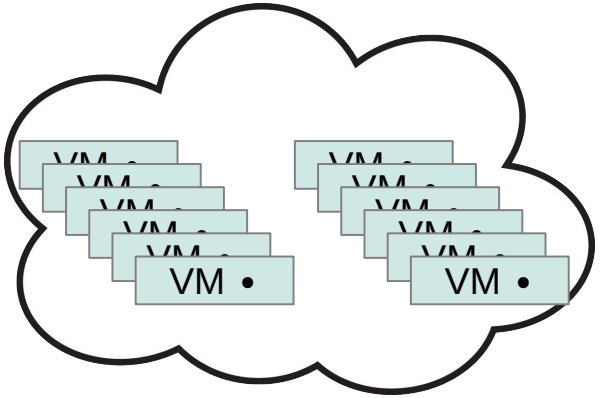

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amazon.com

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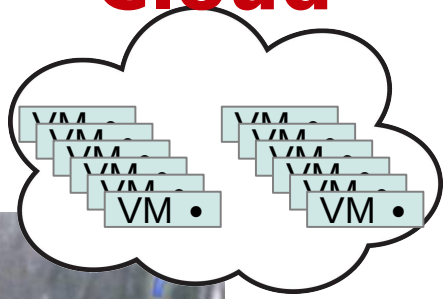
TARGET

What *IS* “The Cloud”?

Dedicated vs Cloud



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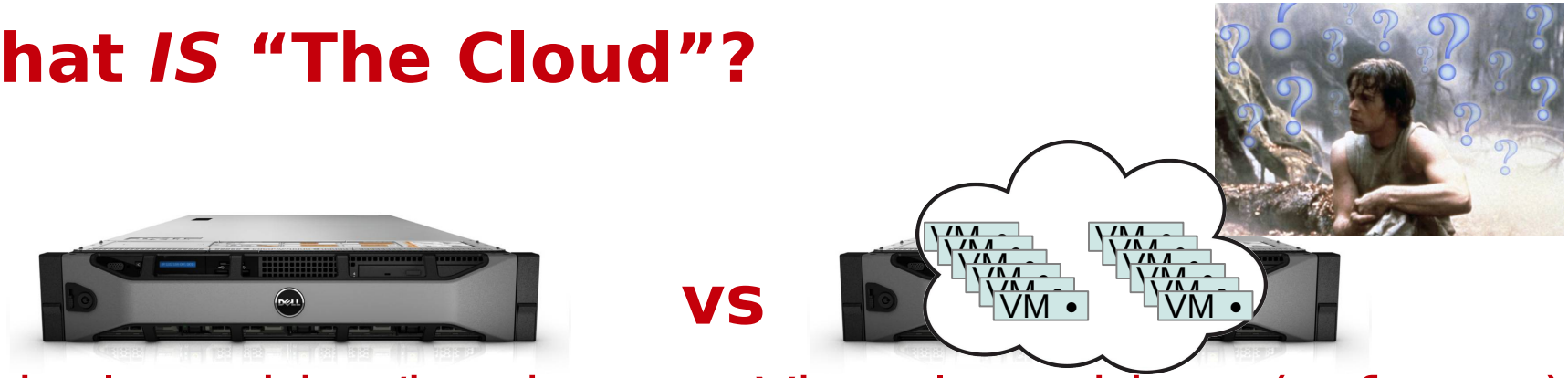
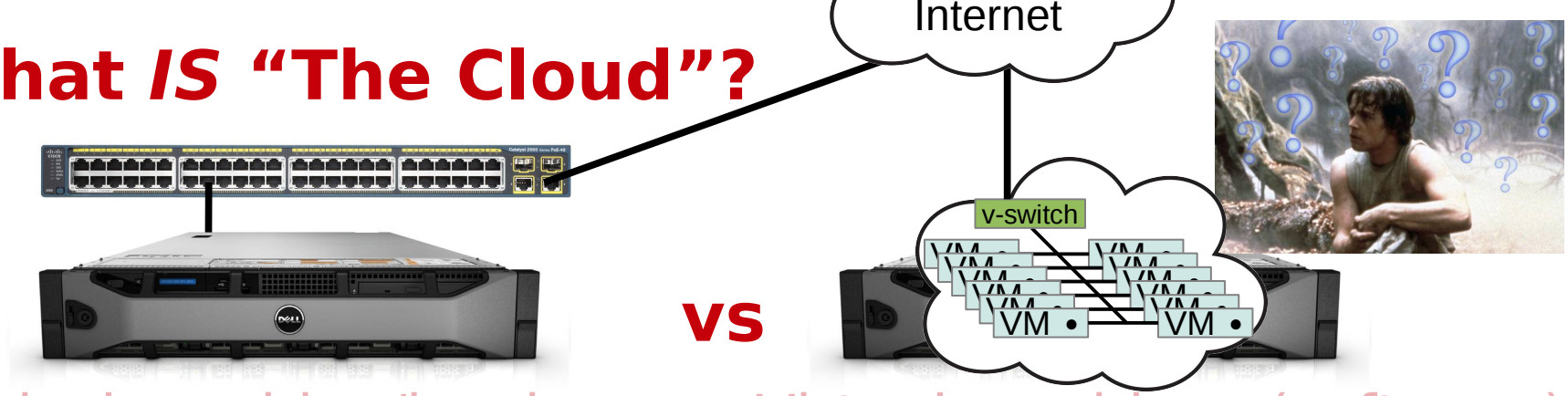


vs

Physical machine/hardware
Avg CPU utilization <2%

Virtual machines (software)
Avg CPU utilization 30-50%

What *IS* “The Cloud”?

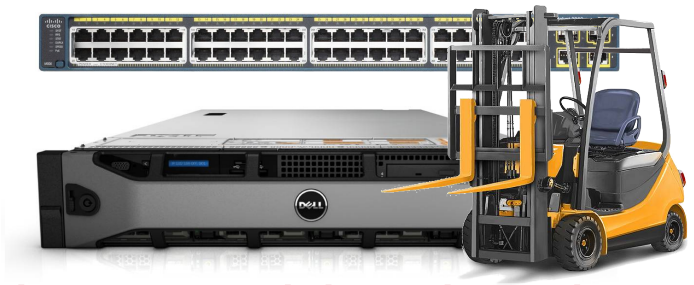


vs

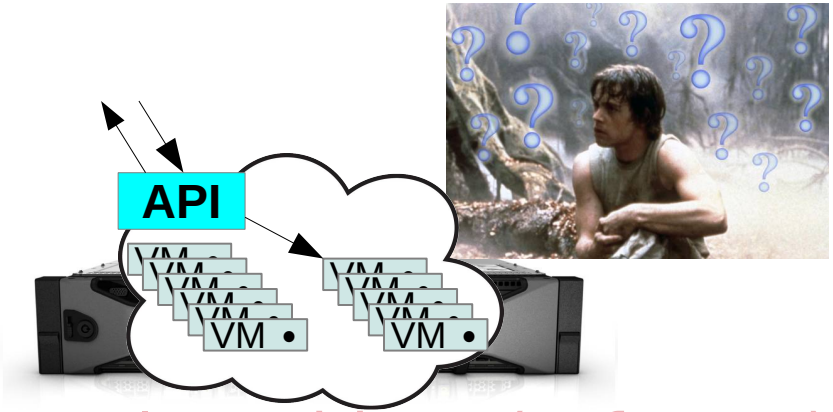
Physical machine/hardware
Avg CPU utilization <2%
Hardware network devices
Hardware/Switch settings

Virtual machines (software)
Avg CPU utilization 30-50%
Virtual network devices
Virtual (code) configs

What *IS* “The Cloud”?



vs

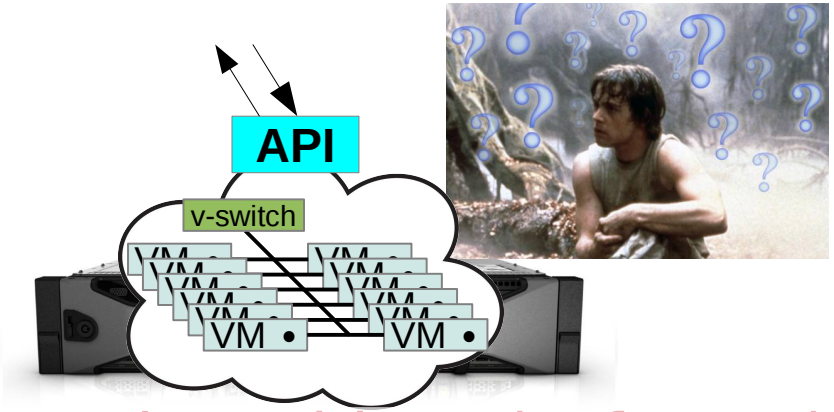


Physical machine/hardware
Avg CPU utilization <2%
Hardware network devices
Hardware/Switch settings
Physical provisioning
New systems takes days

Virtual machines (software)
Avg CPU utilization 30-50%
Virtual network devices
Virtual (code) configs
API (code) provisioning
New system takes minutes

What *IS* “The Cloud”?

vs



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Scales via $$ + Time

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Scales via thought + code

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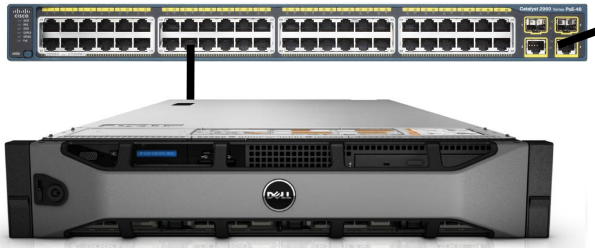
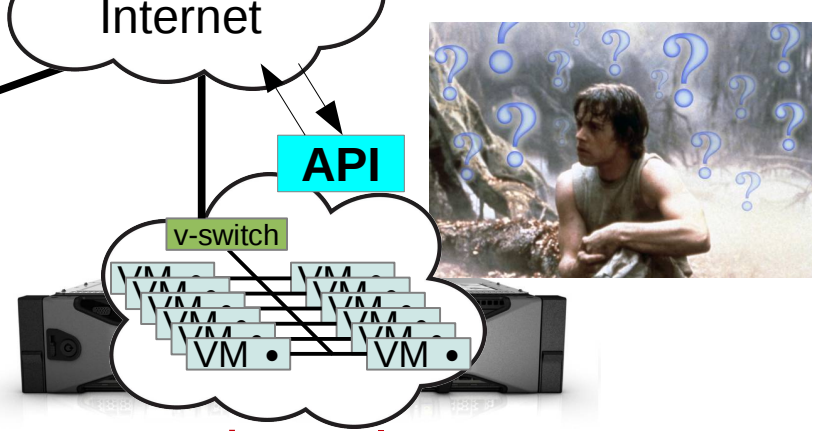


Dedicated
Scales via $$ + Time

vs



Virtual
Scales via thought + code

General Technology Categories

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DEDICATED HOSTING

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HYBRID CLOUD

General Technology Categories

RACKSPACE® DEDICATED HOSTING

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RACKSPACE® HYBRID CLOUD

+ One Box, One Customer
+ Dedicated I/O & network resources
- More expensive (>$599/mo)
- Not all cloud services work with
- Slower provisioning times*

Good for dedicated, large-fast Databases, sensitive backups, DIY storage systems.

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* - Dedicated on “OnMetal” cloud API provisioned systems are much faster than traditional dedicated systems.

General Technology Categories

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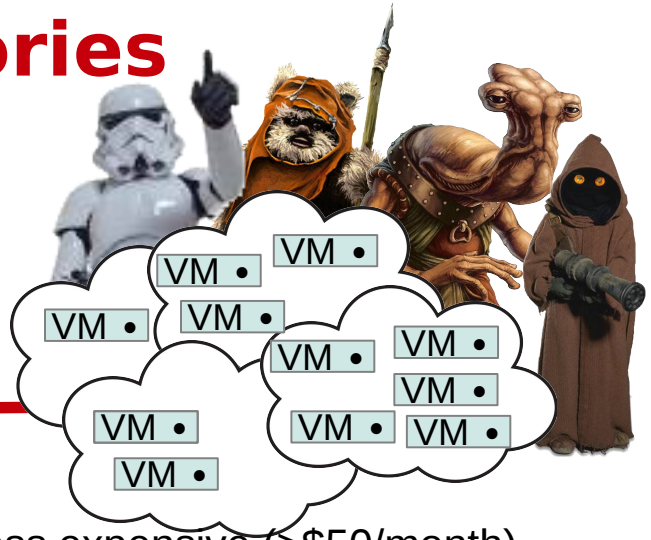

+ Less expensive (>$50/month)
+ Cloud/dedicated services can connect
+ Near instant provisioning
- Many customers on VMs across many (shared) physical hosts
- Shared resource pools of I/O, storage & network.

Low cost, fast scaling, API-automatable. Not as secure.

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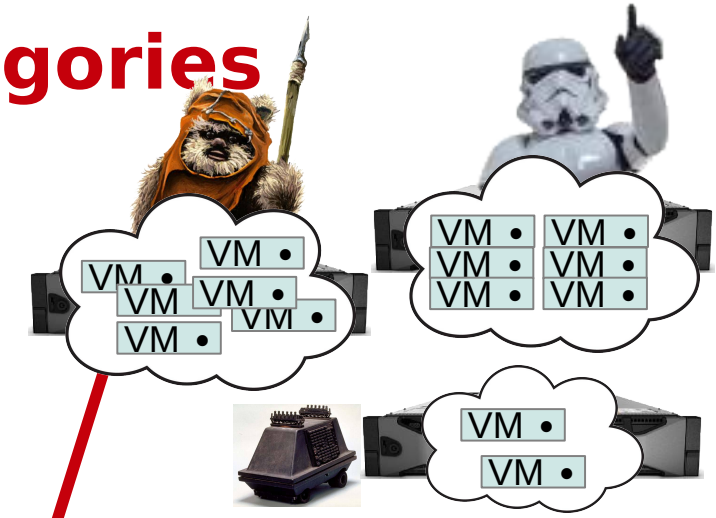

+ Each customer gets own cloud
+ Cloud & dedicated services work
+ Near instant provisioning
+ More secure physical boundaries
+ Dedicated I/O and CPU resources
~ Pricing varies depending on setup
- Off site can't get normal RS network, power & hardware support.

Great for security or resource sensitive apps.

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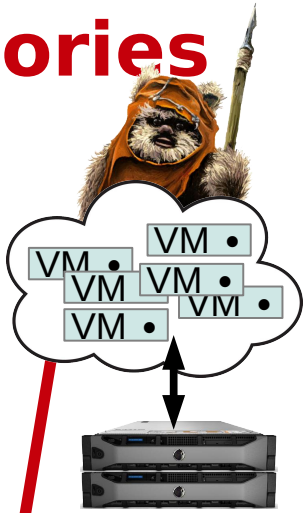
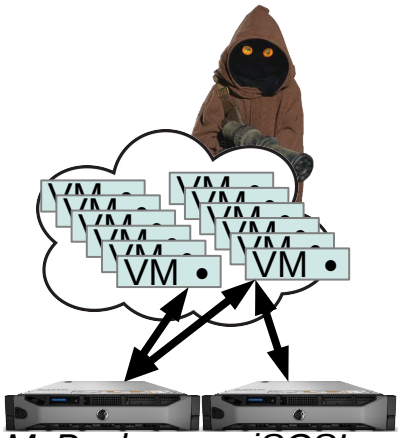


HA Master DB



MyBackups iSCSI

+ Each customer cloud + dedicated
+ Mid range cost (>$600/month)
+ Cloud & dedicated services work
+ Near instant provisioning (cloud)
+ More secure physical boundaries
- Somewhat more complex networking

Great mix for mature systems.
Best of all worlds

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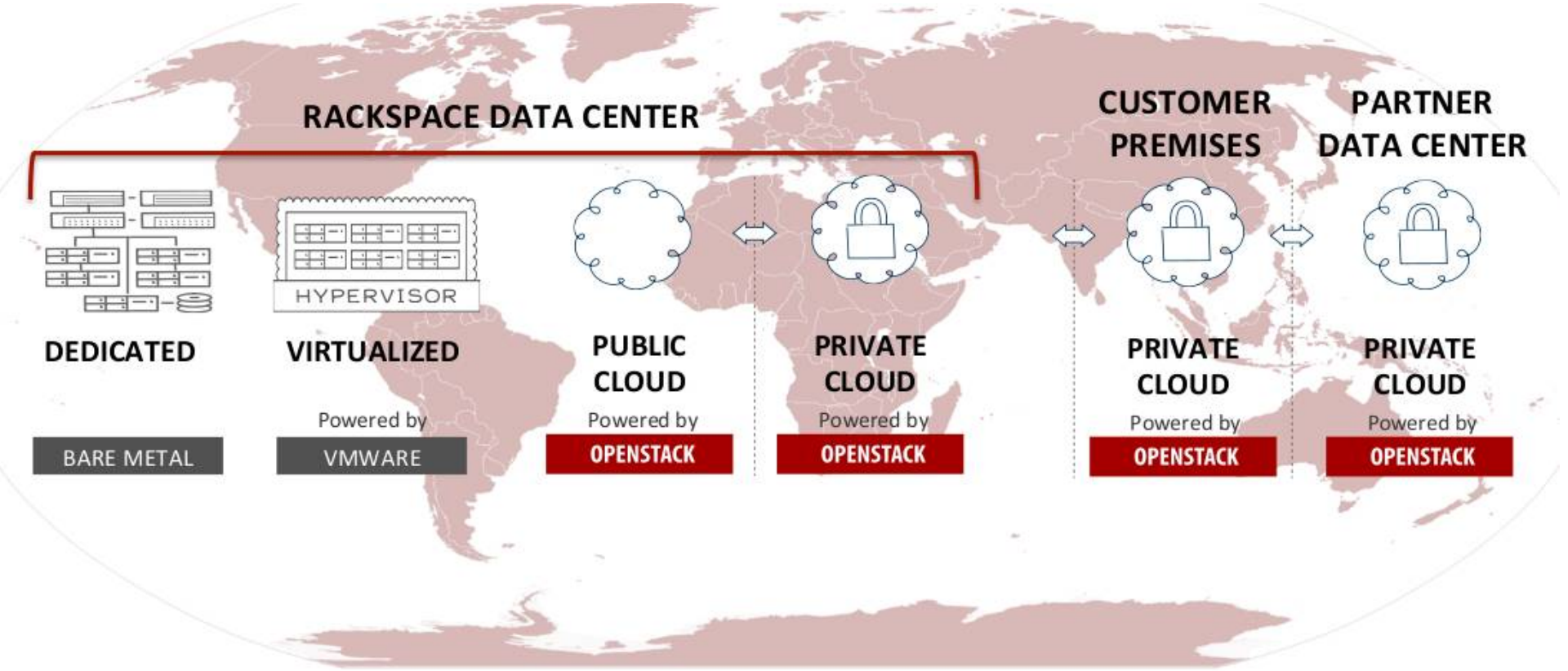
Birds Eye: Where The Infrastructure Lives



OpenStack - http://www.openstack.org/

General Security Offerings

- Rackspace Employs Standards:
  ISO 27001/2, PCI-DSS, SSAE16, SOC 1/2/3, Safe Harbor, CPS
- Physical data center security
- System vulnerability scans
- Two factor authentication for VPN and account access
- RBAC for networking and firewall config management
- SSL Certificates w/Key Management
- DoS/DDoS Attack Detection and Mitigation
- Compliance experts on staff
- Rackspace expert engineer assistance in securing your systems and code (24x7x365)

Understanding Cloud City

THANK YOU

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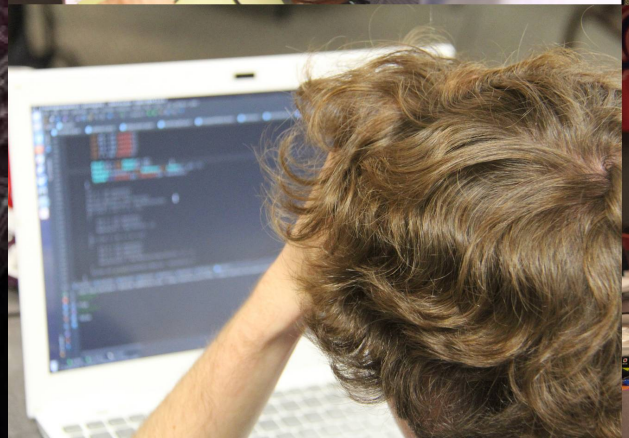
www.LetsCodeBlacksburg.org
Arduino Workshops (2013-2014)



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