Welcome

OpenStack Summit // Portland, Oregon 2013

Jonathan Bryce

Executive Director, OpenStack Foundation

Jonathan Bryce

OpenStack Foundation
@jbryce

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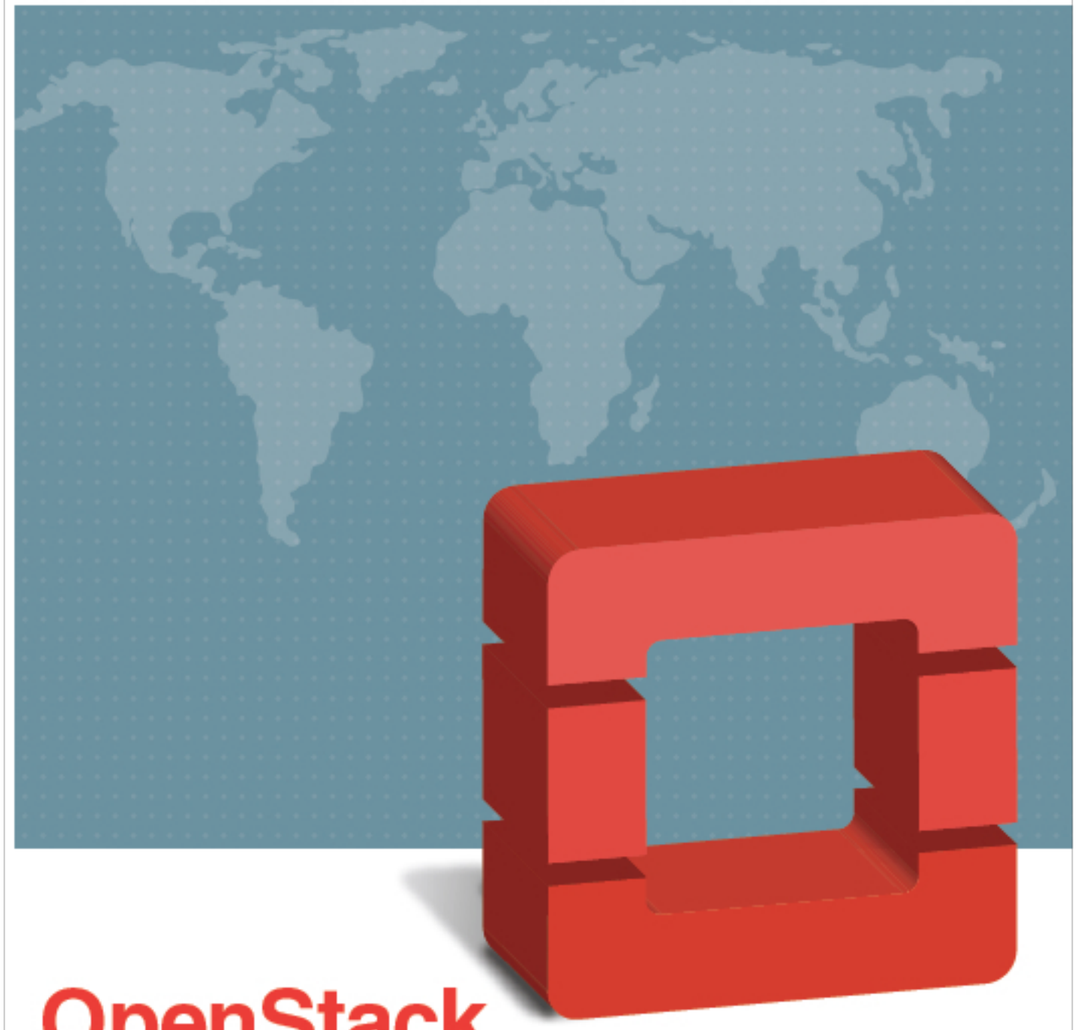
Michigan
LOSANGELES
BOSTON
San FRAN CISCO
Minnesota
INDIANA
INDONESIA
Seattle
north Carolina
NORDICS
SOUTH KOREA
MALASIA
SOUTH EASTERN EUROPE
SLOVENIA
HONG KONG
SWITZERLAND
ITALY
FINLAND
Spain
THAILAND
AUSTRALIA
argentina
germany
TURKEY
ISRAEL
VENEZUELA
INDIA
France
EGYPT
FLORIDA
MOROCCO
VIETNAM

we are

OPENSTACK

OpenStack Foundation

Formed September 19, 2012



OpenStack
Operations Guide

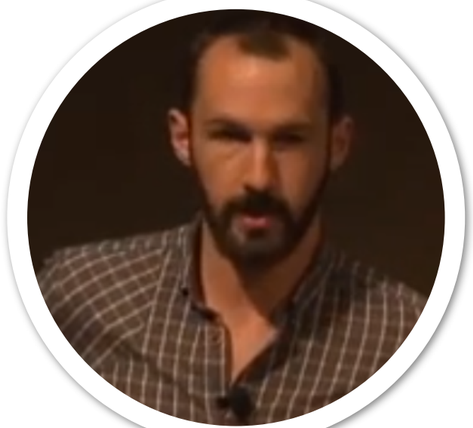
Tom Fifield, Diane Fleming, Anne Gentle, Lorin Hochstein,
Jonathan Proulx, Everett Toews, and Joe Topjian

Facilitator: Adam Hyde

GNOME Outreach Program For Women

SPIRIT of 77
CLUB

Vish Ishaya



Brian Waldon

Dan Wendlandt

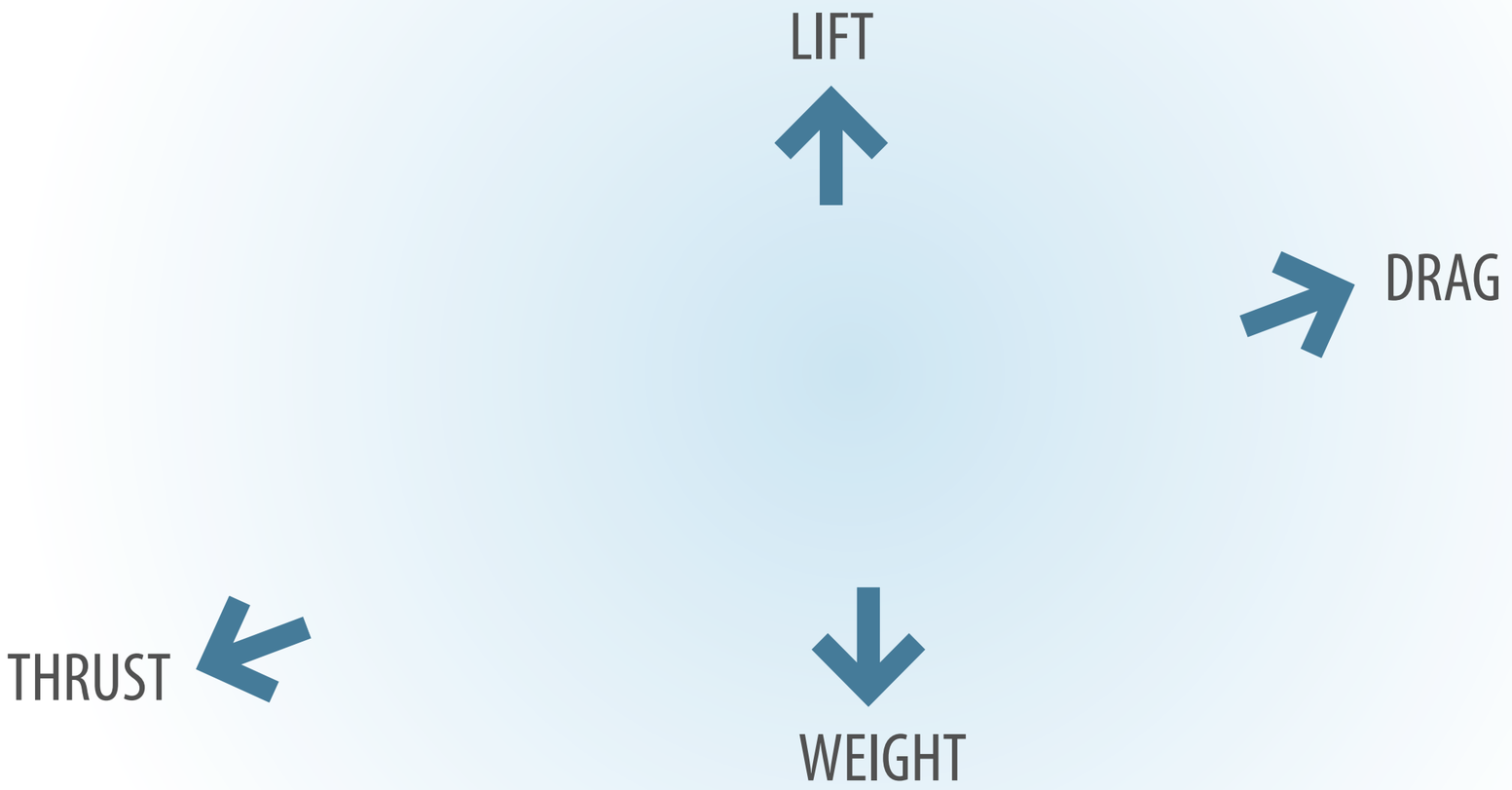
Joe Heck

THANKS TO

What are we doing?

A Few Quick Thoughts

FORCES OF FLIGHT



POWERFUL **SOFTWARE**

SUCCESSFUL **USERS**

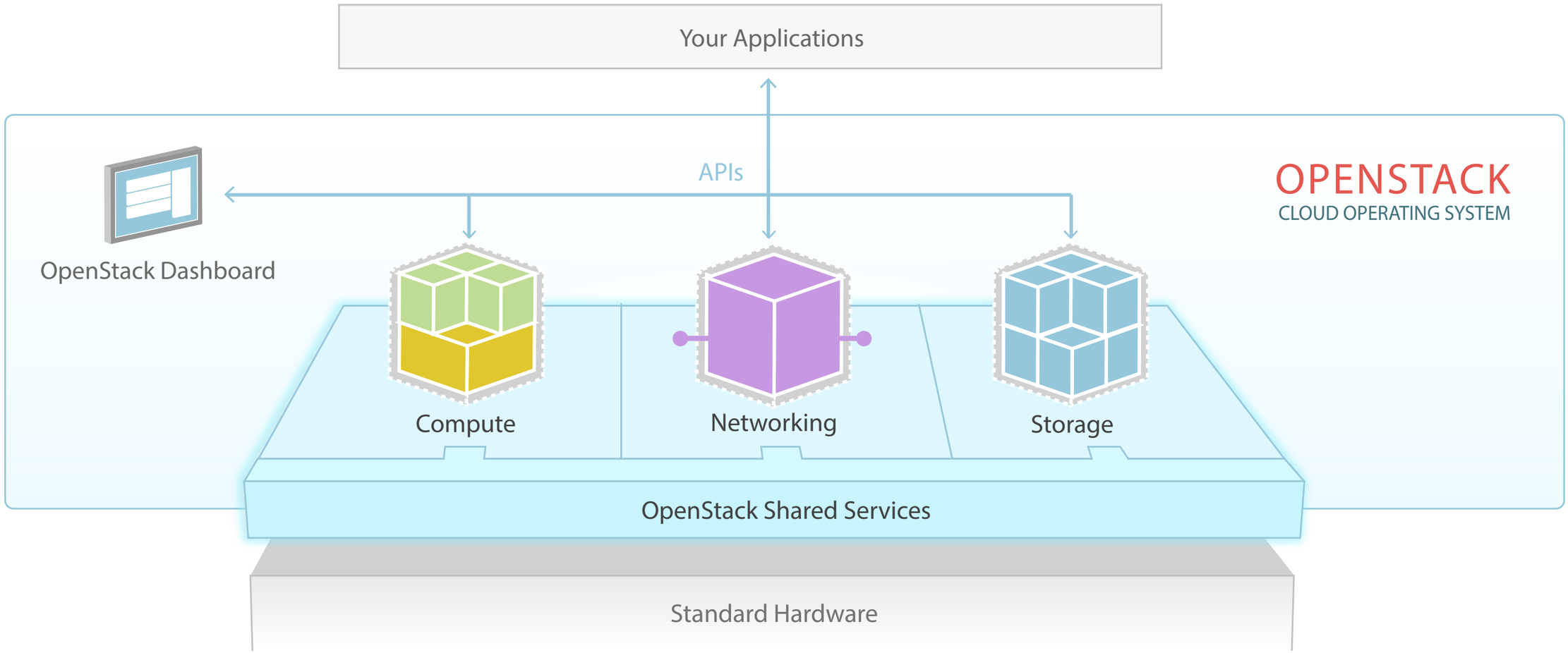
INNOVATIVE **ECOSYSTEM**

PLATFORM FORCES

POWERFUL **SOFTWARE**

SUCCESSFUL **USERS**

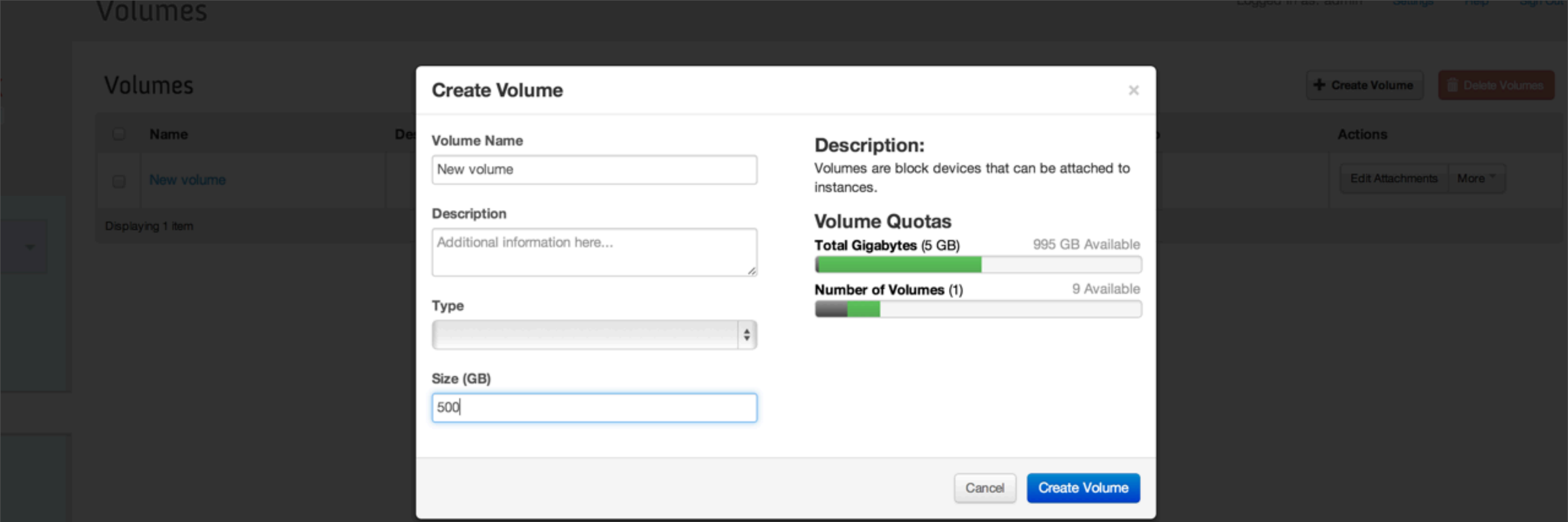
INNOVATIVE **ECOSYSTEM**


Your Applications
APIs
OPENSTACK
CLOUD OPERATING SYSTEM
OpenStack Dashboard
Compute
Networking
Storage
OpenStack Shared Services
Standard Hardware

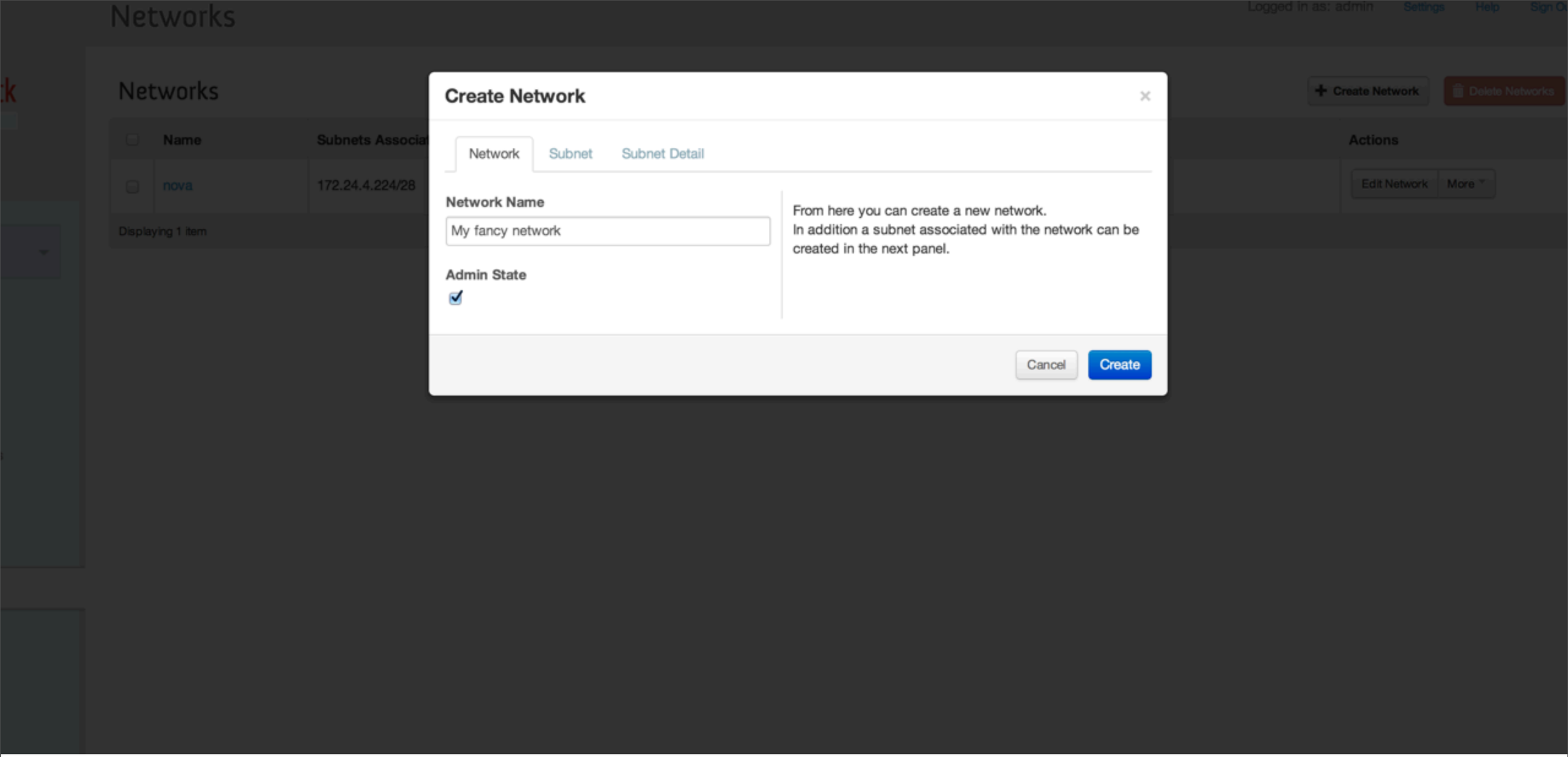
GRIZZLY

SEVENTH PENSTACK RELEASE

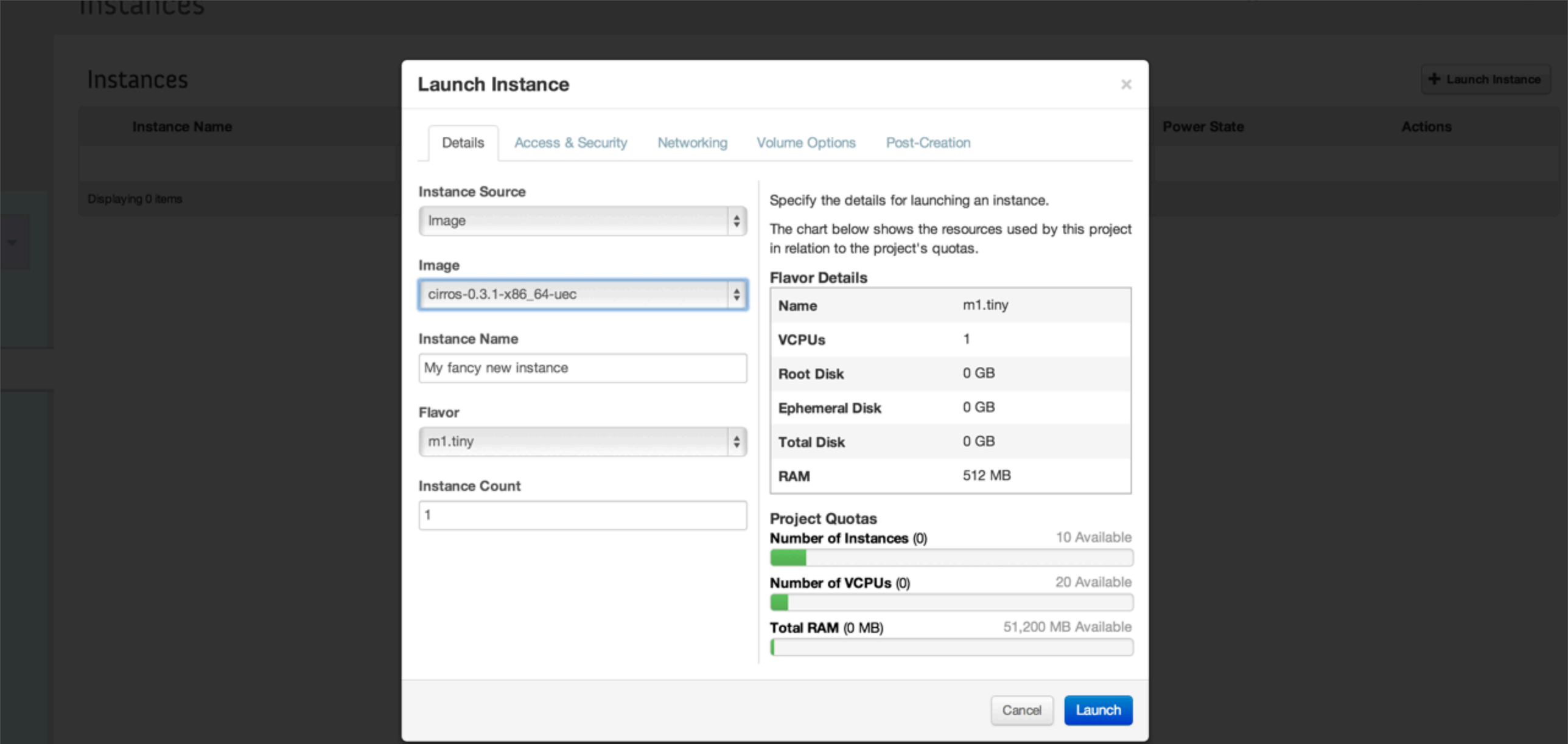
ON TIME WITH ALL MAJOR FEATURES



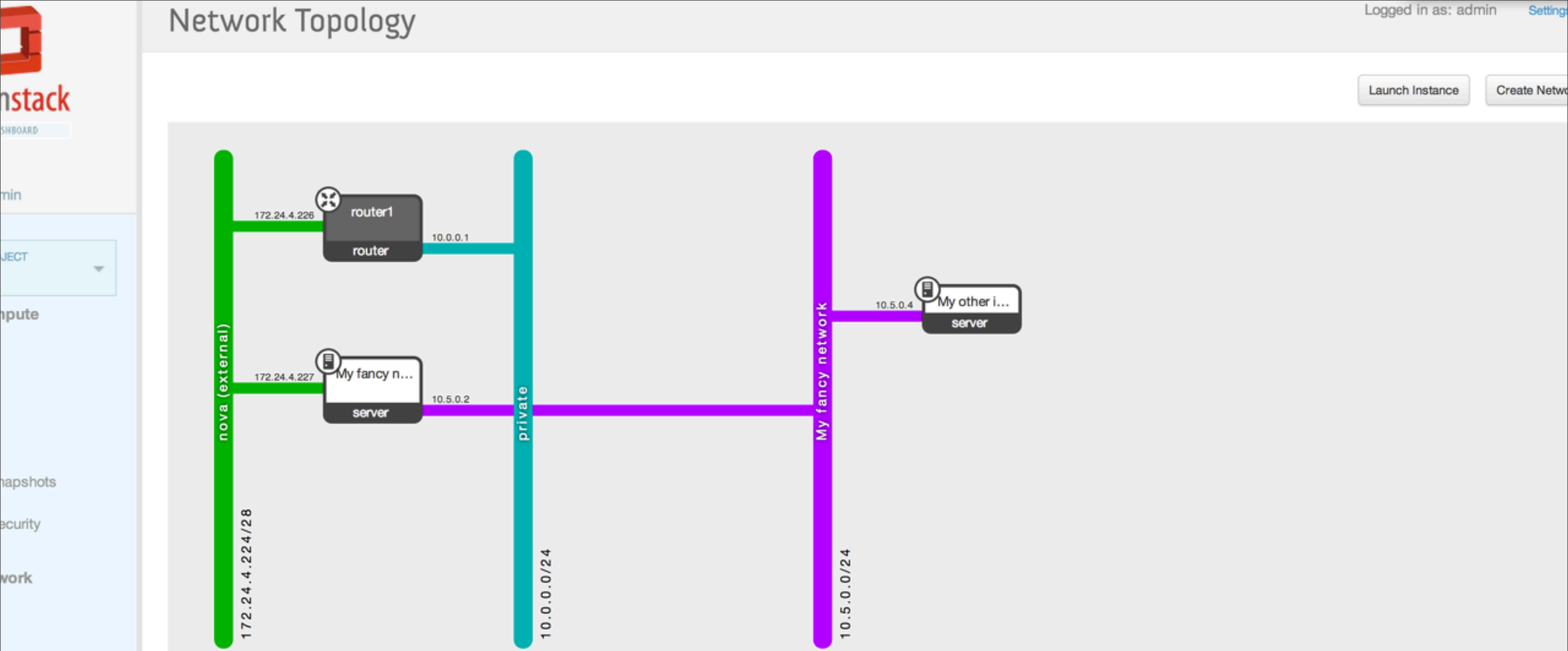
Create Volume



Create Network



Launch Instance



Network Topology

We've welcomed a few **developers**...

POWERFUL **SOFTWARE**

SUCCESSFUL **USERS**

INNOVATIVE **ECOSYSTEM**

BACK TO

2013

IT'S AN AMBITIOUS IDEA, BUT TOO MANY **BIG PLAYERS** WITH **CONFLICTING AGENDAS** WILL KEEP THEM FROM SUCCEEDING.

MIAMI HEAT

RED HERRING

stackforge

Joined on Feb 15, 2012

34 public repos **1** member

Repositories Members

Find a Repository…

All Sources Forks Mirrors

savanna

Python ★ 6 0

Savanna aims to provide users with simple means to provision a Hadoop cluster by specifying several parameters like Hadoop version, cluster topology, nodes hardware details and a few more.

Last updated 4 hours ago

packstack

Python ★ 17 10

Install utility to deploy openstack on multiple hosts.

Last updated 5 hours ago

puppet-openstack

Puppet ★ 5 2

OpenStack Examples Puppet Module

Last updated 5 hours ago

cloudcafe

Python ★ 2 6

OpenStack based test automation framework. Based on OpenCAFE engine

Last updated 10 hours ago

opencafe

Python ★ 2 7

Common Automation Framework Engine. Core driver for CloudCAFE

Last updated 10 hours ago

POWERFUL **SOFTWARE**

SUCCESSFUL **USERS**

INNOVATIVE **ECOSYSTEM**

PREDICTION

Major Retail & Services & Communications

TARGET DATE

April 16, 2013 9:47 AM

[RIGHT NOW]

Bloomberg

github.com/bloomberg/chef-bcpc

Bloomberg

BEST
BUY

WHO WE ARE

Best Buy is the **world's largest multi-channel consumer electronics retailer** with stores in the United States, Canada, China, Europe and Mexico.

11th **largest** online retailer

More than **1.6 billion** visitors to our stores and BestBuy.com each year

Reward Zone largest loyalty program in the U.S. – more than **40 million active members**

Provide customers with **outstanding choice, unbiased advice and unmatched support** for the tech needs

CLOUD REARCHITECTURE

In 2011 we began planning a new Ecommerce Platform

Our traffic profile features an approximately 7X peak around Thanksgiving

Majority of traffic is browse and search

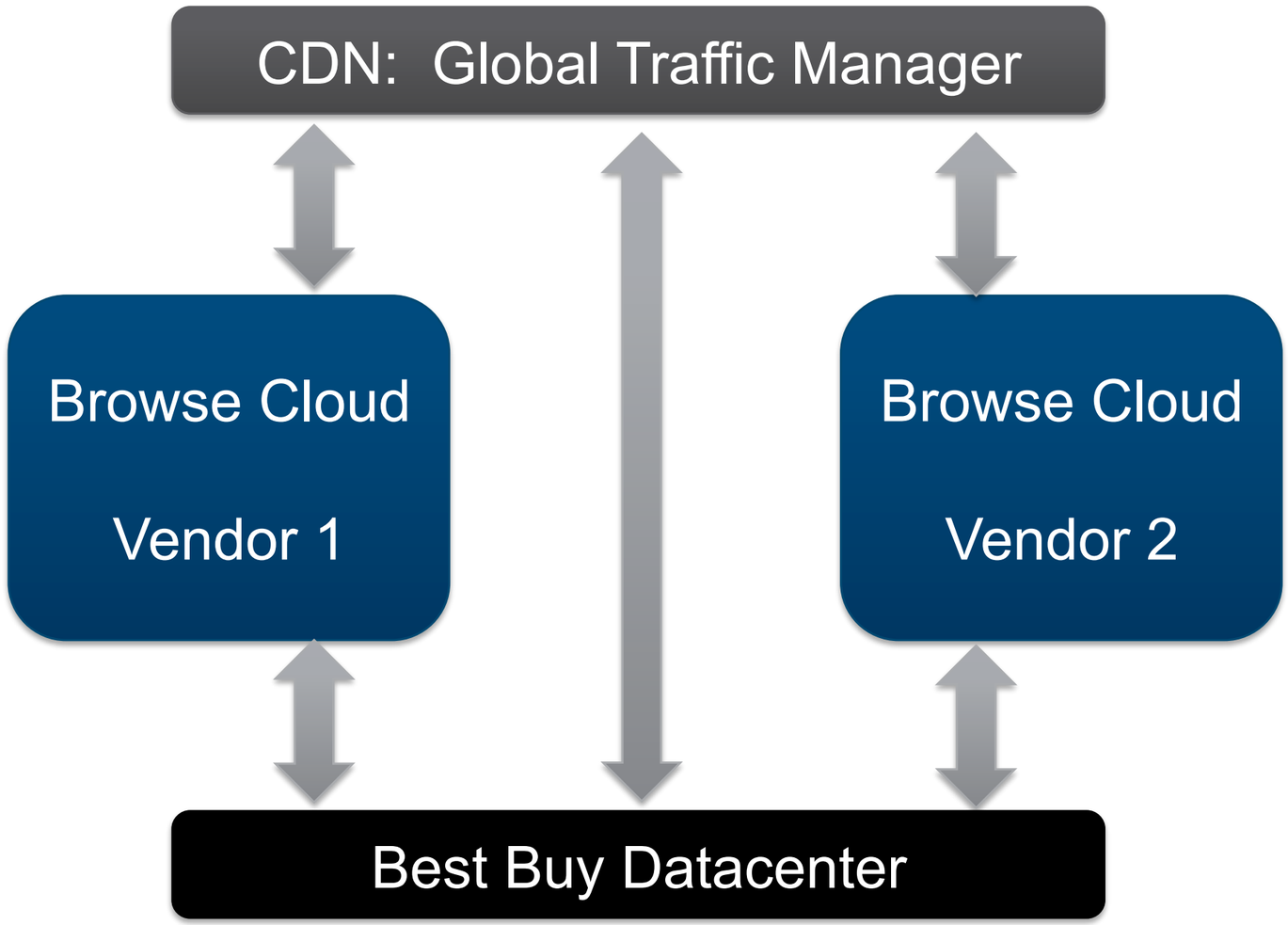
Re-architect browse tier to cloud for elasticity, scalability and reliability

Served ~25% of traffic in 2012

(from Apr 10, 2012 to Apr 7, 2013) (in millions of hits per day)

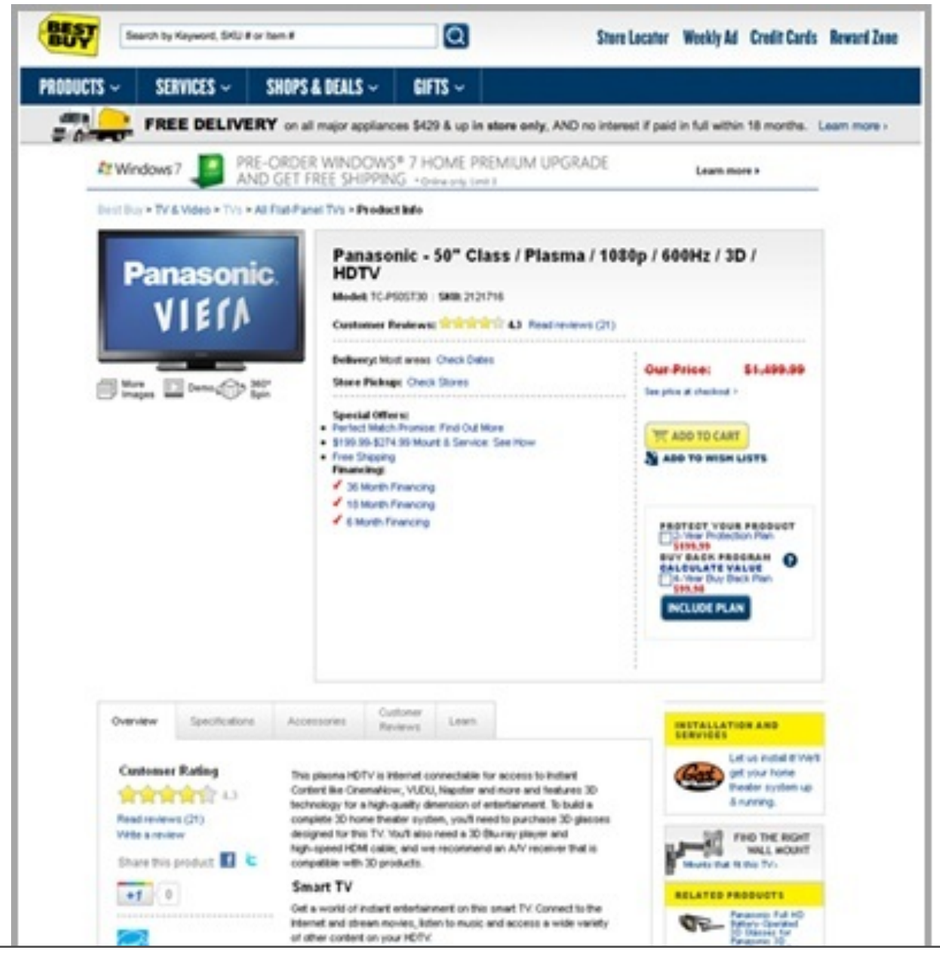
(7−day moving averages)

CLOUD REARCHITECTURE



WHAT YOU SEE

Old Product Page ~ 7-30 s



New Product Page ~ 2.5 s

CONTINUOUS DELIVERY CLOUD (CDC)

At any time we may have 40+ teams working in parallel

Many were bypassing our internal integration environments and instead using public cloud based environments

- Serious inconsistencies in environment quality
- No ability to integrate with other Dotcom services
- QA became the integration environment
- Expensive

Solution: create an internal cloud for integration testing and tooling to consistently recreate the Dotcom infrastructure

WHAT THE CDC PROVIDES

Innovation catalyst
Push button development environments – “Omnitank”
Self-service API driven environments for development teams
Early integration
Automated testing at scale
Reduce variability in environments

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Early integration

Automated testing at scale

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BUSINESS CASE AND USE CASES

What we knew circa mid 2011:

- Value stream mapping exercise showed that QA (as a process) consumed approx. $500,000 per major release (for our legacy platform)
- A large fraction of the costs attributed to environment setup, discrepancies, and availability problems
- Needed to find a way to support parallel development and product teams
- High costs for new infrastructure – upwards of $20,000 to provision a VM in existing managed environments

What we didn't know:

- That we would receive the green light and funding to develop a new platform
- The rapid pace of development and change we were headed towards

WHAT IT DOES FOR US: CULTURE

Focused on developer driven, self-managed teams:

- A culture of self service vs. COE
- Remove the blame game regarding environments and environment state
- Parallel development
- Teams are free to innovate
- Reduce cycle times for code complete and code deploy

TRANSFORMERS TEAM

CUSTOMER GRAPH TEAM

BEST
BUY

COMCAST

A LITTLE CONTEXT

About Comcast

- Two primary businesses: Comcast Cable & NBCUniversal
- Comcast Cable is the largest US provider of video, Internet, phone services (XFINITY)
- NBCUniversal operates 30 news & entertainment cable networks, NBC & Telemundo broadcast networks, TV production & station groups, Universal Pictures, and Universal Parks & Resorts

Our video development stack has been…

- Vertically integrated, closed HW & SW
- Most of the consumer experience accomplished on the set-top

X1 PLATFORM

X1 platform moves functionality out of the box and into the network

- Connect the set-top box to our cable services using standard IP technologies
- Built on open source server & software infrastructure on private cloud
- More personalized experience that makes it easy to discover, access, and share

OpenStack brings

- A vibrant, diverse, and vendor agnostic development & user community
- Agility, efficiency and velocity across the entire lifecycle

Today's demo is live

- X1 Rendering Engine running on our production OpenStack cloud

More details about our OpenStack plans in our case study (Wed 1:50pm)

COMCAST

xfinity™

POWERFUL **SOFTWARE**

SUCCESSFUL **USERS**

INNOVATIVE **ECOSYSTEM**

PLATFORM FORCES

[6CEED]

RUNS ON OPENSTACK

[99cloud]

RUNS ON OPENSTACK

[AlecSoft]

RUNS ON OPENSTACK

[ALYSEO]

RUNS ON OPENSTACK

[atomes]

RUNS ON OPENSTACK

[Aunigma Network Solutions]

RUNS ON OPENSTACK

[BADJI SSLL]

RUNS ON OPENSTACK

[BESTBUY]

RUNS ON OPENSTACK

[bitHeads Inc.]

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[Blindside Networks]

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[Bloomberg]

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[BootCamp Chile]

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System Maintenance Services

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[Ticketfly, Inc.]

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[University of Savoie]

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[VEXXHOST, Inc.]

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[welcome hotels]

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[Wikimedia Foundation]

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[Workday]

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[Zadara Storage]

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[zeus]

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[ZHAW ICCLab]

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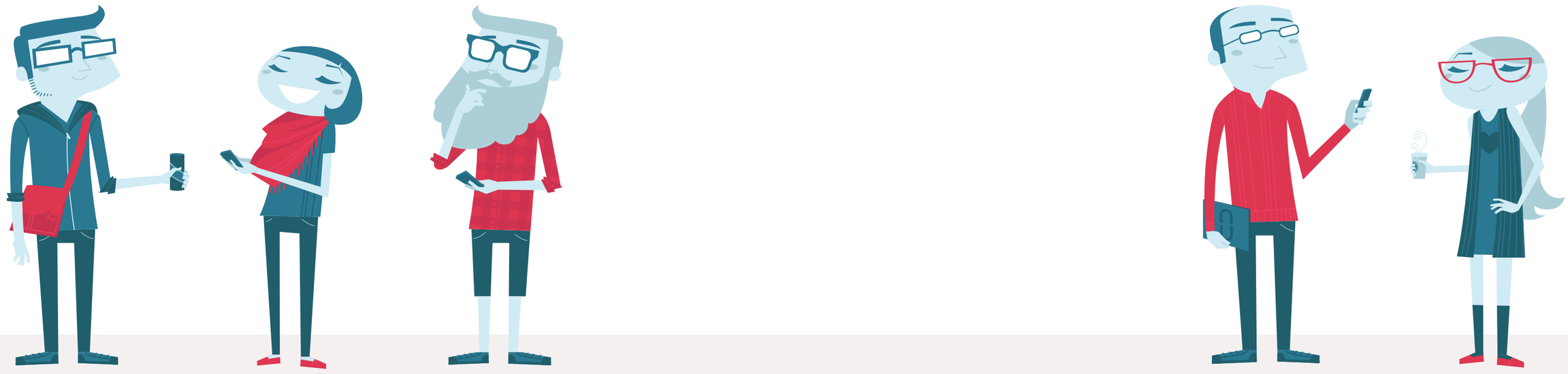
Thank You

For Making OpenStack Great

Enjoy The Summit

OpenStack Summit // Portland, Oregon 2013



HONG KONG NOVEMBER 2013