Transforming IT with…
Red Hat Enterprise Linux
OpenStack Platform

Marty Wesley
Senior Product Marketing Manager
Red Hat Inc

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WORKLOADS ARE TRANSFORMING... AGAIN

TRADITIONAL WORKLOADS

- Typically resides on a single large virtual machine
- Cannot tolerate downtime
- Requires high availability
- Application scales up rather than out

CLOUD WORKLOADS

- Workload resides on multiple virtual machines
- Tolerates failure – if one fails, another quickly replaces it
- Fault tolerance built into workload
- Application scales out rather than up

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CHALLENGES WITH A TRADITIONAL INFRASTRUCTURE

Our data is too large

- Producing vast amounts of data, exponentially!
- Way past the ability of traditional systems and applications
- Scaling UP no longer works. Scaling OUT is a necessity

Service requests are too large

- More and more client devices coming online
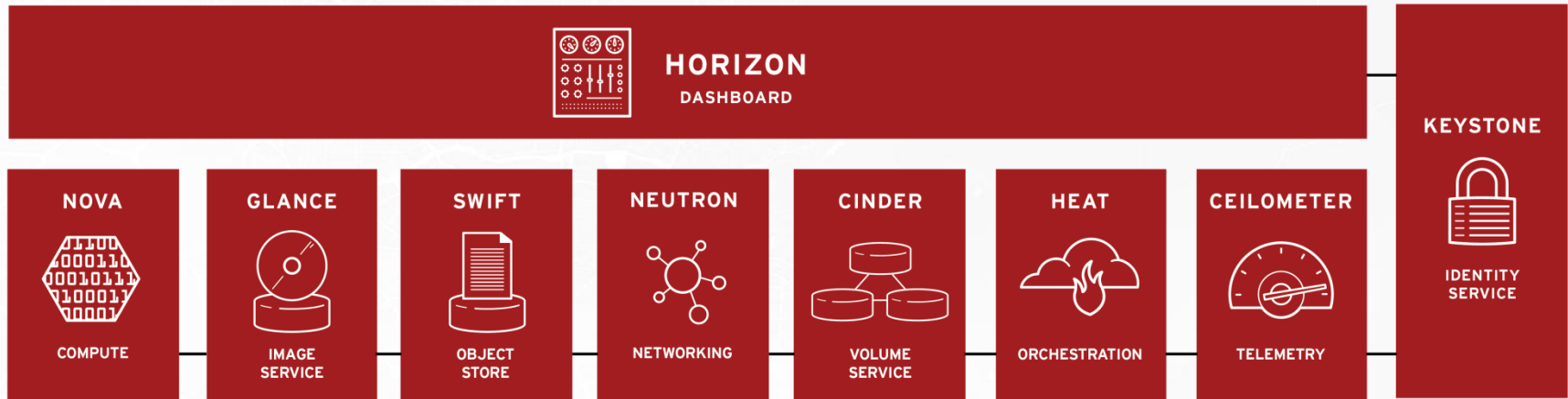- Much harder to maintain service to customers

Applications weren't written to cope with demand

- Traditional applications are straining to meet end-user scalability requirements

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WHY OPENSTACK

- Brings public cloud-like capabilities into your datacenter
  - Provides massive on-demand (scale-out) capacity
  - 1,000's → 10,000's → 100k's of VMs

- Provides flexibility to customize and interoperate
  - It's OPEN!

- Features and functions you need, faster to market
  - Community development = higher "feature velocity" over proprietary software

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WHAT IS OPENSTACK?

HORIZON
DASHBOARD

KEYSTONE

NOVA
COMPUTE

GLANCE
IMAGE SERVICE

SWIFT
OBJECT STORE

NEUTRON
NETWORKING

CINDER
VOLUME SERVICE

HEAT
ORCHESTRATION
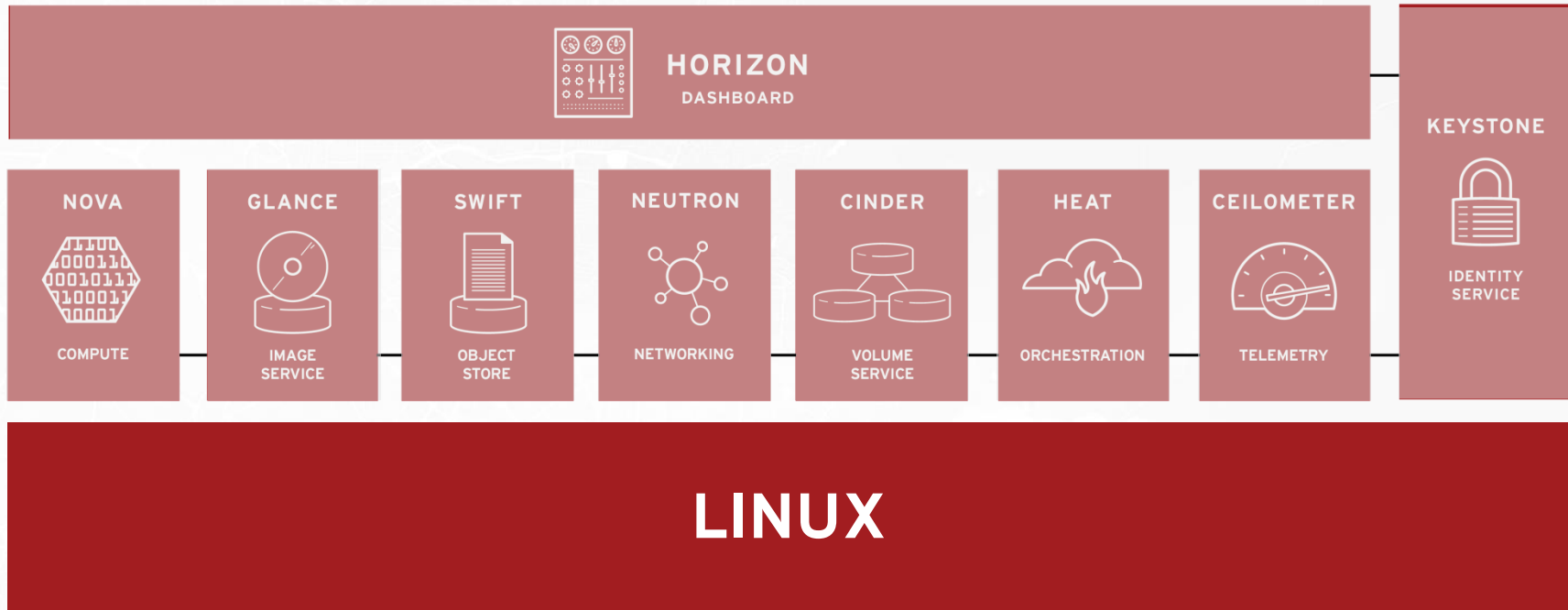
CEILOMETER
TELEMETRY

IDENTITY SERVICE

OPST0005

- A massively scalable infrastructure as a service platform
- Designed as modular services
- Built for scale-out architecture
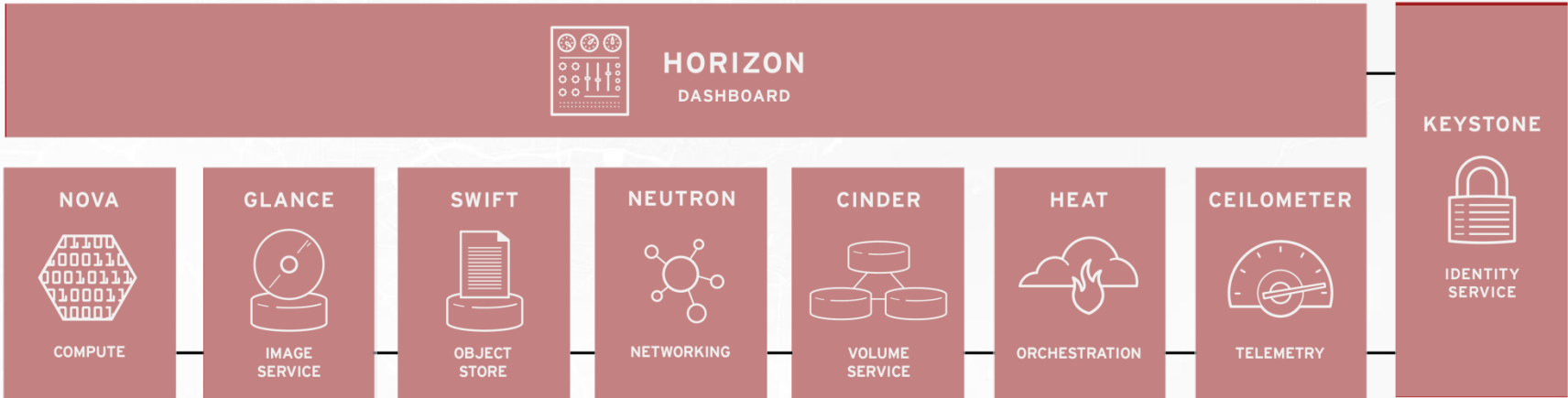
WHY RED HAT?

WHY RED HAT?

OpenStack *is dependent* on the underlying Linux...

- Needs access to x86 hardware resources
- Needs an operating environment, hypervisor, other system services
- Uses existing code libraries for functionality

THE IMPORTANCE OF INTEGRATION WITH RED HAT ENTERPRISE LINUX

- A typical OpenStack cloud is made up of:

  - Core cloud services

    – Nova, Glance, Swift, Neutron, etc.

  - Plugins to interact with 3rd party systems

    – storage arrays, network switches, etc.

- Services run on top of a Linux distribution with a complex set of userspace dependencies, requiring tight integration

- A supported, stable platform requires integration and testing of each of the components

THE IMPORTANCE OF INTEGRATION WITH RED HAT ENTERPRISE LINUX

- Examples of RHEL optimized enablers for OpenStack
  - Virtualization – guest performance and reliability
  - Security - SELinux enforcing guest isolation
  - Network – SDN/OVS performance optimized
  - Storage – vendor plugins, performance, thin provisioning
  - Ecosystem – certification of hardware, storage, and networks

- The pairing of the Linux operating system and OpenStack is so close that Red Hat is the only vendor that is uniquely positioned to most effectively support functionality, performance, security, system-wide stability, and ecosystem support

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WORLD'S LARGEST OPENSTACK PARTNER ECOSYSTEM

Red Hat OpenStack Cloud Infrastructure Partner Network

OEMs and IHVs

ISVs

System Integrators

Cloud Service Providers

Managed Service Providers

Channel Partners

Over 235+ members since launch in April 2013

Over 900 certified solutions in partner Marketplace
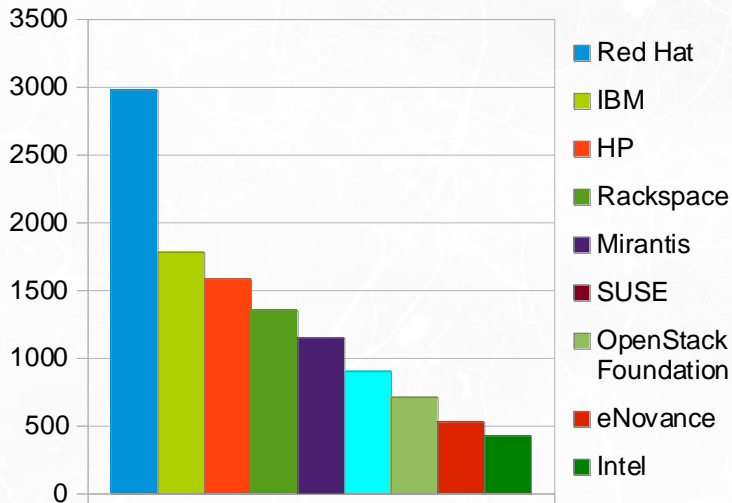
Over 4,000 RHEL certified compute servers

Over 13,000 applications available on RHEL
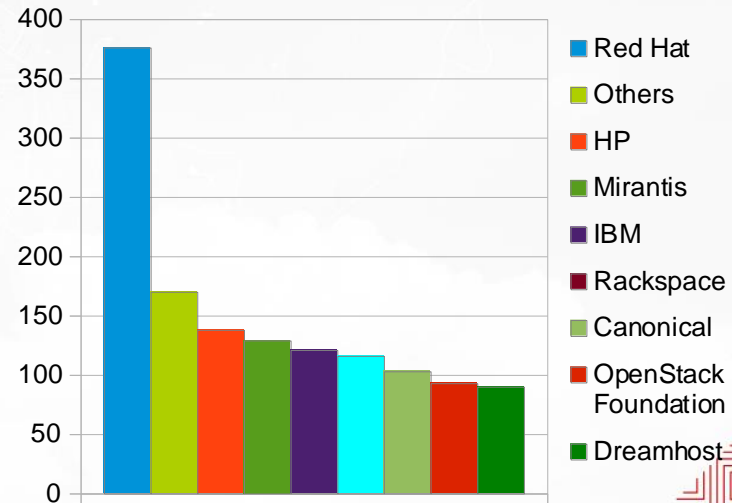
Large catalog of Windows certified applications

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RED HAT COMMUNITY LEADERSHIP

Top Contributor to Icehouse Release

● Overall commits per company (aggregated)

■	Red Hat
■	IBM
■	HP
■	Rackspace
■	Mirantis
■	SUSE
■	OpenStack Foundation
■	eNovance
■	Intel

● Closed Tickets per company (aggregated)

■	Red Hat
■	Others
■	HP
■	Mirantis
■	IBM
■	Rackspace
■	Canonical
■	OpenStack Foundation
■	Dreamhost

Source: Bitergia http://activity.openstack.org/dash/releases/index.html?data_dir=data/icehouse

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RED HAT'S OPENSTACK LEADERSHIP
WHY DO THESE STATISTICS MATTER?

Proof that Red Hat has skills, resources to:

- Support customers
- Drive new features
- Influence strategy and direction of project
- Enable partner collaboration

Wide ranging participation, contrasts with most others who are more narrowly focused

Red Hat has created an enterprise-grade distribution with ecosystem, lifecycle, and support that customers expect from Red Hat

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SERVICES FOR OPENSTACK AND CLOUD

Training

RH318 Red Hat Enterprise Virtualization Administration

CL210 Red Hat OpenStack Administration

CL220R Red Hat CloudForms Administration

Certification

Red Hat Certified Virtualization Administrator (RHCVA)

Red Hat Certificate of Expertise in OpenStack IaaS

Consulting

Red Hat Enterprise Virtualization Accelerator

Red Hat Enterprise Linux OpenStack Platform Accelerator

Red Hat Open IaaS Architecture Service

CUSTOMER SUCCESS

# NATIONAL COMPUTATIONAL INFRASTRUCTURE

Deployed Red Hat Enterprise Linux OpenStack Platform
- Gained the enterprise backing, development, and support they needed
- Simplified upgrade and lifecycle management
- Required the security certifications Red Hat provided

"Red Hat has been very responsive in assisting to get our OpenStack deployment up and operating quickly. The quality of the deployment has given significant confidence..."

Allan Williams, associate director, Australian National Computational Infrastructure

NANYANG TECHNOLOGICAL UNIVERSITY
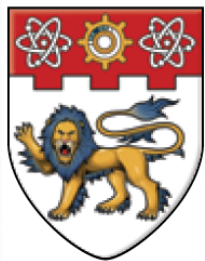
NANYANG TECHNOLOGICAL UNIVERSITY

www.ntu.edu.sg

"We Evaluated Red Hat Cloud Infrastructure to be one of the most versatile and complete cloud solutions available"

Professor Yeng Chai Soh, Founding Director High Performance Computing Centre, NTU

Deployed a hybrid cloud infrastructure with Red Hat Enterprise Linux OpenStack Platform
- Increased scalability of resources
- Achieved greater efficiency through automatic resource provisioning
- Allowed for better use of existing resources and saved costs
- Achieved greater collaboration between agencies

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SUMMARY

WHY RED HAT ENTERPRISE LINUX OPENSTACK PLATFORM

All benefits of community OpenStack and...

- Enterprise hardened code

- Co-engineered and integrated with Red Hat Enterprise Linux

- Enterprise software lifecycle

- World-class global support

- Worlds largest OpenStack partner ecosystem

- OpenStack training, certification, and consulting

- Integrated with trusted stack

  - Red Hat CloudForms

  - Red Hat Enterprise Virtualization

  - Red Hat Storage (incl. Ceph)

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ANALYSTS ARE SPEAKING...

"Red Hat is applying its experience in commercializing open source Linux for the enterprise and it's methodology to OpenStack..."

IDC "OpenStack and Red Hat" (July 2013)

"The company has made some smart moves in the [OpenStack] space, and it'll work out for them... they've always been the open source [company]"

David Linthicum, Cloud Technology Partners "Red Hat's OpenStack Strategy progresses with eNovance buy" (June 2014)

"The company's reputation in open source makes it a natural player here... ...it's solution could go toward legitimizing OpenStack for mainline businesses..."

Charles King, Pund-IT "News Factor" (July 2014)

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THREE WAYS TO GET OPENSTACK FROM RED HAT

90-DAY EVALUATION

PURCHASE SUPPORTED PRODUCT

1 RED HAT® ENTERPRISE LINUX® OPENSTACK® PLATFORM

redhat.com/openstack/evaluation

2 RED HAT® ENTERPRISE LINUX OPENSTACK® PLATFORM

3 RED HAT® CLOUD INFRASTRUCTURE

Learn more at: redhat.com/openstack

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RED HAT
FORUM
Beijing

11 September 2014

THANK YOU