What You Need to Know About OpenStack + VMware

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Disclaimer

• This presentation may contain product features that are currently under development.
• This overview of new technology represents no commitment from VMware to deliver these features in any generally available product.
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• Technical feasibility and market demand will affect final delivery.
• Pricing and packaging for any new technologies or features discussed or presented have not been determined.
The Software-Defined Data Center: Delivering IT Outcomes

- CapEx Reduction
- OpEx Reduction
- Improved Security
- Higher Availability
- Faster Time-to-Market
SDDC: A Unified Platform for Traditional & Modern Applications

Traditional Apps
- Resilience
- Security
- SLA

Modern Apps
- +Agility
- +Portability

Software-Defined Data Center
- vSphere, NSX, Virtual SAN

Any Hardware

Open Cloud APIs
- **Contribute** to open source projects.
- **Differentiate** with SDDC value.
- **Enable** customers to easily adopt.

**Resilience**
- Security
- SLA

**Traditional Apps**
- OS
- App
- Virt HW

**Modern Apps**
- OS
- App
- Virt HW
- Spring
- Hadoop
- Cloud Foundry
- OpenStack
- Kubernetes / Docker

**Open Cloud APIs**
- Contribute to open source projects.
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OpenStack: Enabling Developer Agility for Cloud-style Apps

OpenStack is an **framework** for providing developers with **cloud-style APIs** and tools on top of a **choice of virtual infrastructure** technologies.
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**Workloads Targeted for OpenStack**

- Primarily **new workloads**, or “repatriated” VMs from a public cloud.
- Common examples:
  - Scale-out SaaS/Web applications
  - Dev/Build/Test, continuous integration/deployment.
  - Research / batch-processing: data analytics, encoding, simulation, etc.
What Does It Take to Run an OpenStack Cloud?

OpenStack Framework

- OpenStack API SDKs
- CLI Tools
- Web Portal
- Compute API
- Network API
- Storage API
- Image API

Application devops team

Cloud Infrastructure team

Application Mgmt and Automation

Developer Tools

IaaS API Services + Drivers

Virtualization Technologies

Hardware Technologies

Infrastructure Ops + Mgmt
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NSX
vSphere Datastores: 3rd-party / Virtual SAN

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vCOPs, Log Insight, ITBM

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- vSphere Datastores: 3rd-party / Virtual SAN
- Cloud Infrastructure team
- vCAC
- vCOPs, Log Insight, ITBM
- vCAC

Application Mgmt and Automation
Developer Tools
IaaS API Services + Drivers
Virtualization Technologies
Hardware Technologies
Infrastructure Ops + Mgmt
Why OpenStack on VMware?

An open and vendor-neutral ecosystem that gives developers the APIs and tools they want…

- Contribute: One of the largest contributors to the OpenStack project.
- Differentiate: The most powerful OpenStack cloud available, with fast time-to-value and low total cost-of-ownership.
- Enable: Easy path to deploy + operationalize OpenStack + VMware.

…industry leading data center technologies that enterprise IT already knows how to operate.
Contribution: VMware in the OpenStack Community
Engagement with the OpenStack Community + Ecosystem

- Open vSwitch Project Created by Nicira
- OpenStack Project Created by Rackspace & NASA
- OpenStack Networking “Neutron” project started, led by Nicira.
- VMware acquires Nicira, Joins OpenStack Foundation as Gold member.
- OpenStack Distros Partners announce plans to support vSphere & NSX.
- VMware Integrated OpenStack (VIO) Beta Announced.

Upstream Contributions

- “Congress” Policy
- vSphere+Glance
- vSphere+Ceilometer
- vSphere+Cinder
- vSphere+Nova
- NSX+Neutron
- vSphere+Nova
- vSphere+Cinder
- vSphere+Glance
- “Congress” Policy
VMware’s OpenStack Community Involvement By the Numbers

#4 contributor to the recent OpenStack Icehouse release:

- 21 Developers
- 414 Commits
- 66,488 Lines-of-Code
- 3,770 Patches Reviewed

Source: Stackalytics for “integrated (i.e., core) OpenStack projects in OpenStack Icehouse (http://stackalytics.com/?project_type=integrated&release=icehouse&metric=commits&company=vmware)
Differentiate: What is the Best Technology to Pair with OpenStack?

“What is the best technology choice for...”

- ...advanced features?
- ...total cost of ownership?
- ...scalability?
- ...availability and reliability?
- ...security?
- ...effective operations and upgrade?
- ...infrastructure and app SLAs?
- ...troubleshooting and support?
Differentiate: Leverage VMware’s Best-of-Breed Components
Reliability, Performance, Security, Scale, OpEx/CapEx reduction...

**vSphere Compute (Nova)**
- Industry standard for security, stability and reliability
- Lower CAPEX from server savings with higher VM density.
- Lower OPEX from advanced management and operation features (vMotion, DRS, HA ...etc)

**NSX Network (Neutron)**
- Advanced Security and Multi-Tenancy (Micro-Segmentation, Overlay)
- Advanced NW services with massive scale & throughput (Switching, Routing, Security, Load Balancing, QoS, HA)
- Integration with 3rd Party network services providers

**vSphere Storage/Virtual SAN (Cinder/Glance)**
- Work with any vSphere validated storage (Largest HCL in the industry)
- Advanced Storage Policies with Virtual SAN
- Leverage Commodity Hypervisor-Converged Storage Nodes with Virtual SAN
Differentiate: OpenStack Performance and Cost Comparison

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VMware vs. Red Hat
- VMware vSphere
- VMware Virtual SAN
- Red Hat Ent. Linux (KVM)
- Red Hat Storage Server (GlusterFS)

Differentiate: OpenStack Performance and Cost Comparison

Differentiate: OpenStack Performance and Cost Comparison

VMware 53% faster

Differentiate: OpenStack Performance and Cost Comparison

VMware 53% faster

VMware 26% lower cost

Differentiate: Leverage Existing Investments for Fast Time-to-Value

Your Infrastructure

• Leverage your existing validated architecture, that already provides production-grade, high-performing datacenter resources.

• Compatible with existing models around security and compliance.

Your Skills & Expertise

• Capitalize on your existing expertise to build, run and troubleshoot your OpenStack environment

• Save time and effort required to learn and master new hypervisor, network, storage

Your Trusted Tools

• No need to add additional monitoring and management tools

• Utilize your existing troubleshooting tools and scripts
Contribute

Differentiate

Enable
Filling Key OpenStack Management Gaps

“...an OpenStack installation does not make a cloud...

“These activities are bound to consume a significant amount of time and effort.”

Subbu Allamaraju – Chief Cloud Architect @ Ebay
Filling Key OpenStack Management Gaps

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Enable: VMware Integrated OpenStack

The fastest and most reliable route to running a production-grade OpenStack cloud

VMware Integrated OpenStack (Beta)
Enable: What is VMware Integrated OpenStack?

**Fully Validated Architecture**

- **Existing vSphere environment**
- **OpenStack code with VMware drivers**
- **VMware-optimized reference arch, with integrated tools for install, upgrade, etc**

**VMware Integrated OpenStack**

- **vCenter Operations Manager**
- **Log Insight**
- **vCloud Automation Center**
- **IT Business Management**

**OpenStack-aware Cloud Management**

**Single Support Contact**
Enable: VMware Integrated OpenStack

VMware Integrated OpenStack (Beta)

- Best-of-breed technologies
- Existing VMware expertise
- Cloud management tools
- Single support contact

- Powerful Cloud Capabilities
- Fast time-to-value
- Low total-cost-of-ownership
Enable: Working with the OpenStack Ecosystem

Loosely-Integrated Framework

OpenStack APIs

Flexible / Customizable
• Multiple hypervisors, etc.
• Customizable architecture

More Complex to Build + Operate
• Disjoint/limited mgmt tools
• Multiple support contacts

Tightly-Integrated Product

OpenStack APIs

Limited Configurations
• Single hypervisor
• Standard architecture

Less Complex to Build + Operate
• Unified/Rich mgmt. tools
• Single support contact
Enable: Working with the OpenStack Ecosystem

Loosely-Integrated Framework

OpenStack APIs

VMware components

Open source code/packages or OpenStack Distro vendor

Tightly-Integrated Product

OpenStack APIs

VMware Integrated OpenStack (VIO)

Same Vendor-Neutral Developer APIs
Looking Ahead: VMware Integrated OpenStack

OpenStack Community
Integrate new community releases, incorporating additional APIs and services over time.

Partner Ecosystem
Across compute, network, storage, and management and OpenStack offerings.

VMware Integrated OpenStack

VMware Innovations
Innovations as VMware releases new products versions and expands to new product offerings.
Customer Spotlight
OpenStack on VMware Infrastructure Demo
Where to Learn More

<table>
<thead>
<tr>
<th>Additional OpenStack Sessions @ VMworld</th>
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<tbody>
<tr>
<td>STO-1491 (Mon 2:30pm) From Clouds to Bits: Exploring the Software Defined Storage Lifecycle</td>
</tr>
<tr>
<td>SDDC-2370 (Tues. 2:30pm) Why OpenStack Runs Best with the vCloud Suite</td>
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<tr>
<td>NET-1592 (Wed. 9:30am) Under the Hood: Network Virtualization with OpenStack Neutron and VMware NSX</td>
</tr>
<tr>
<td>SDDC-2198 (Wed. 2:00pm) VMware OpenStack End-to-End Demo</td>
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**Hands-on-Lab**
- SPL-SDC-1420: OpenStack with VMware vSphere and NSX
- Online at: http://www.vmware.com/go/openstacklab

**Have Questions?**
- Visit us at our VMware OpenStack booth on the expo floor.
- Visit our online community: http://communities.vmware.com/community/vmtn/openstack

Learn More & Request Access to the Beta

http://www.vmware.com/products/openstack
Thank You
Fill out a survey

Every completed survey is entered into a drawing for a $25 VMware company store gift certificate