

# Deploying OpenStack

## In a Multi-Hypervisor Enterprise Environment

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# 21 Years of Adapting Open Source

## SETTING THE BAR

**LEADING PROVIDER**

of enterprise linux solutions



## GLOBAL MARKET

**CUSTOMERS WORLDWIDE**

▶ 19,000+

## GLOBAL ORGANIZATION

**EMPLOYEES IN 43 COUNTRIES**

▶ 850+

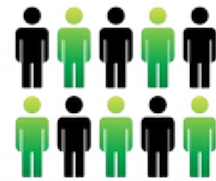


## KNOW HOW

**21+**

years of linux engineering experience

## PARTNERS



**5,000+** member partner ecosystem



## THE GOLD STANDARD

**AWARD WINNING**



technical support and customer service



# Why SUSE Cloud?

## PROVEN OPEN SOURCE LEADERSHIP

20<sub>year</sub>

history of commercializing and supporting open source projects in the enterprise



Backed by the excellence of SUSE engineering and award-winning support organization

## SIMPLIFIED INSTALLATION AND OPERATIONS



Packaged for enterprise deployments and integrated with SUSE maintenance and lifecycle management



Integrated installation and automated operations provided by Crowbar.

## LEVERAGES YOUR EXISTING ECOSYSTEM



SUSE application and hardware certifications



Supports mixed hypervisor private clouds



Open APIs for integration with third-party software

## COMPLEMENTED BY POWERFUL SOLUTIONS



SUSE Studio and SUSE Manager builds and manages applications for private and public cloud environments.



# SUSE Cloud 3 Highlights



- Based on OpenStack Havana
  - Orchestration module (Heat) project for VM orchestration
  - Telemetry module (Ceilometer) improves cloud measurement
- New Features
  - Full VMware support
  - Improved networking and block storage adapter support
    - Cisco Nexus, EMC, VMware NVP and others
  - Updated Ceph packages
  - SUSE Cloud 2 to SUSE Cloud 3 upgrade
  - Manual addition of existing servers as cloud nodes
- Platform for High Availability
  - Delivered as update in March



What's the Problem?

# Enterprises Fear Change

**Cloud computing  
represents a  
fundamental change  
to IT processes**



# Enterprises Fear Change

- Large investments have already been made in existing virtualization infrastructure
- Investment in skilled employees
- Training investment
- Lack of familiarity with open-source hypervisors
- Vast majority of VMware administrators are Windows users
- Disaster-recovery infrastructure and procedures



What do Enterprises Need?



# Ideally it's all the same...



# What Do They Need?



- No data center is homogeneous
- VMware has ~56% of the market
- Hyper-V is growing rapidly, but not necessarily at the expense of VMware

# What Do They Need?

Cloud computing platform needs to be agnostic



vmware®



Windows Server®  
Hyper-V™

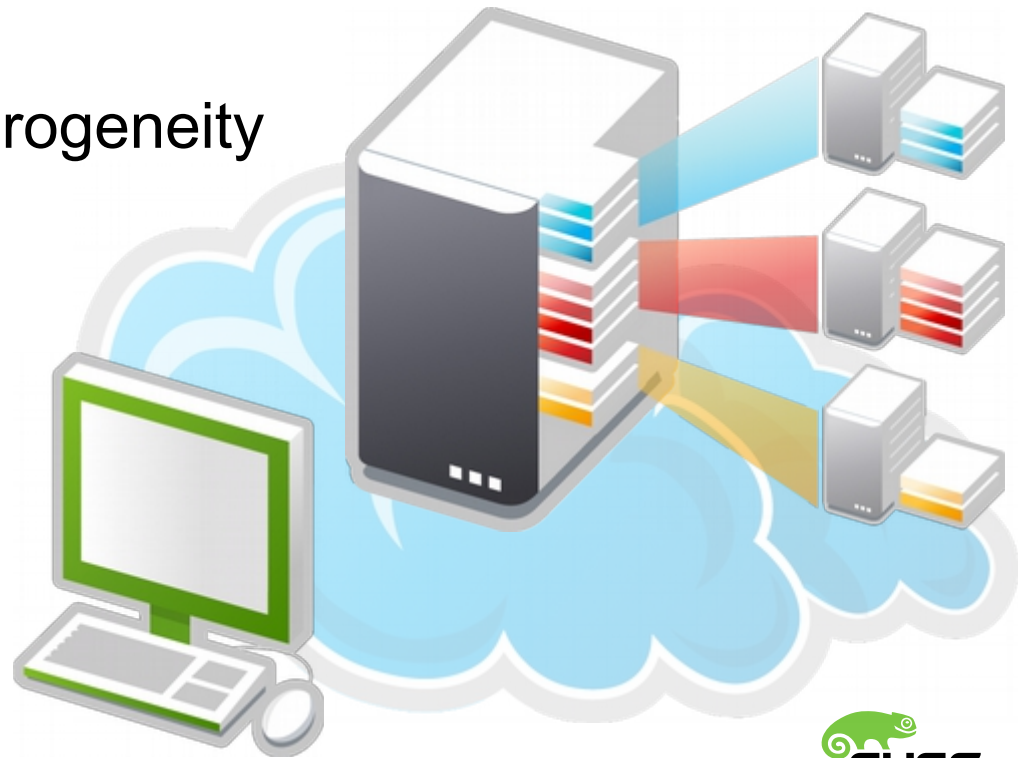


openstack™  
CLOUD SOFTWARE



# Mixed Hypervisor Support Matters

- Advantages of running multiple hypervisors
  - Workload optimization
  - Licensing flexibility
- Cloud can simplify heterogeneity
  - Single control plane
  - Schedule on any server



How Can I Make it Happen?



# How Do I Do It?

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vmware®

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# How Do I Do It?

VMware driver added to OpenStack as of Grizzly

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**Please don't use that!**

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- Major upgrade to driver in Havana
- Compute node dedicated to communicating with vSphere
- VMware NSX plug-in for Neutron
- Cluster or clusters in vSphere dedicated to OpenStack virtual machines
- Bridge interface on hosts for VLAN traffic

# Limitations

- No iptables = no security groups
- Havana—No Cinder support (EULA limitations)
- **Icehouse has new VMDK driver for Cinder**
- No live migration (from OpenStack)





# How Do I Do It?

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Windows Server®  
Hyper-V™

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# How Do I Do It?

Hyper-V driver usable as of Grizzly

Setup virtual switching

Enable iSCSI initiator service

Configure Shared-Nothing Live Migration

Install Nova-Compute

# Limitations

No iptables = no security groups

No serial/VNC console—Must use RDP

Vlan and Routing is only supported on Hyper-V when using the Quantum / Neutron Hyper-V Agent





# How Do I Do It?



# How Do I Do It?



# How Do I Do It?



# Image Properties

```
glance image-create \  
  --name="Foo-<version>-<format>" \  
  --is-public=True \  
  --disk-format=<format> \  
  --container-format=bare \  
  --property hypervisor_type="<hypervisor>" \  
  [ --property vmware_adaptertype=lsiLogic ] \  
  [ --property vmware_disktype=preallocated ]
```



# Image Properties

If creating a VMware image, you may need to use Virtual Disk Manager to convert to an ESX-compatible format

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```
vmware-vdiskmanager \
```

```
-r <vmdk file> \
```

```
-t 4 <new file>
```

It's ***SHOWTIME!***

Thank you.





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