# 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

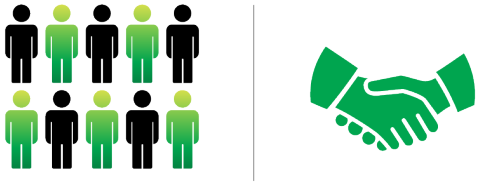
▶ 850+

**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 year**

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?

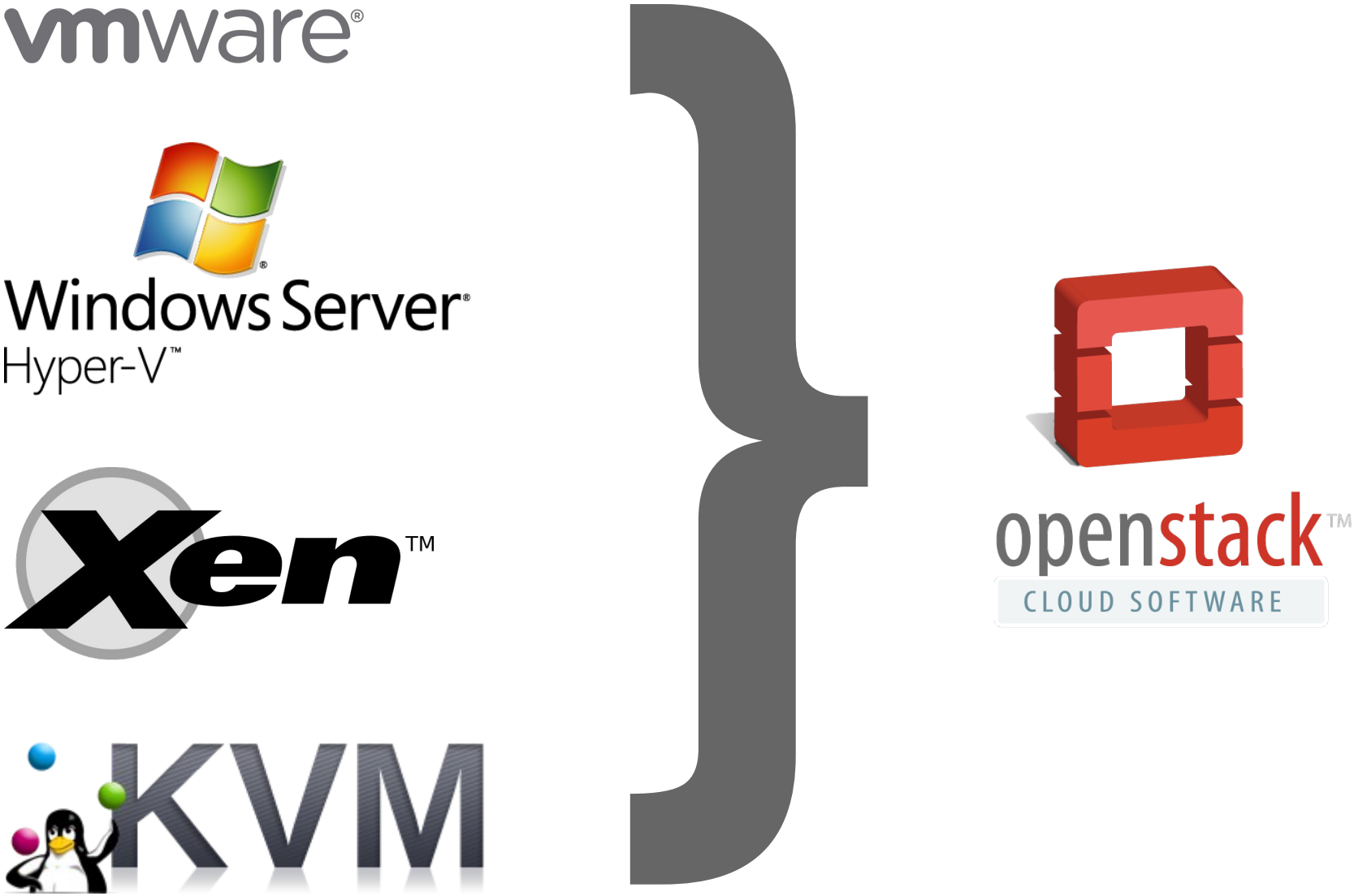
No data center is homogeneous

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
Xen
KVM
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

SUSE

# How can I make it happen?

# How do I do it?

# How do I do it?

VMware driver added to OpenStack as of Grizzly

**Please don't use that!**

Major upgrade to driver in Havana

Compute node dedicated to communicating with vSphere

VMware NSX plugin 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?

# 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

```
vmware-vdiskmanager \
   -r <vmdk file> \
   -t 4 <new file>
```

# It's *SHOWTIME!*

Thank you.


SUSE®
We adapt. You succeed.