Deploying OpenStack

In a Multi-Hypervisor Enterprise Environment

Rick Ashford
Senior Technical Specialist
rashford@suse.com

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

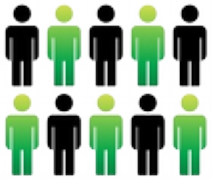
850+

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

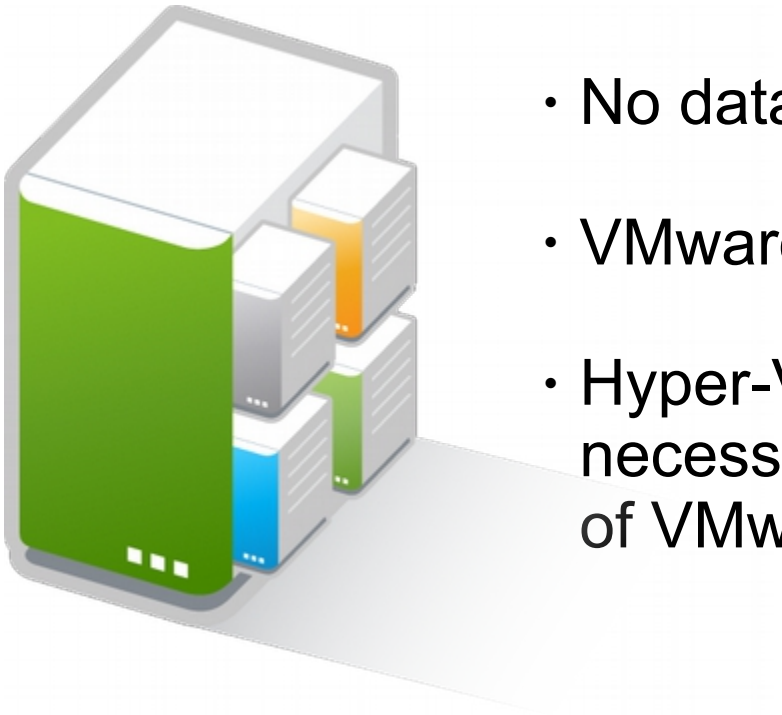
Enterprises Fear Change

- 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...

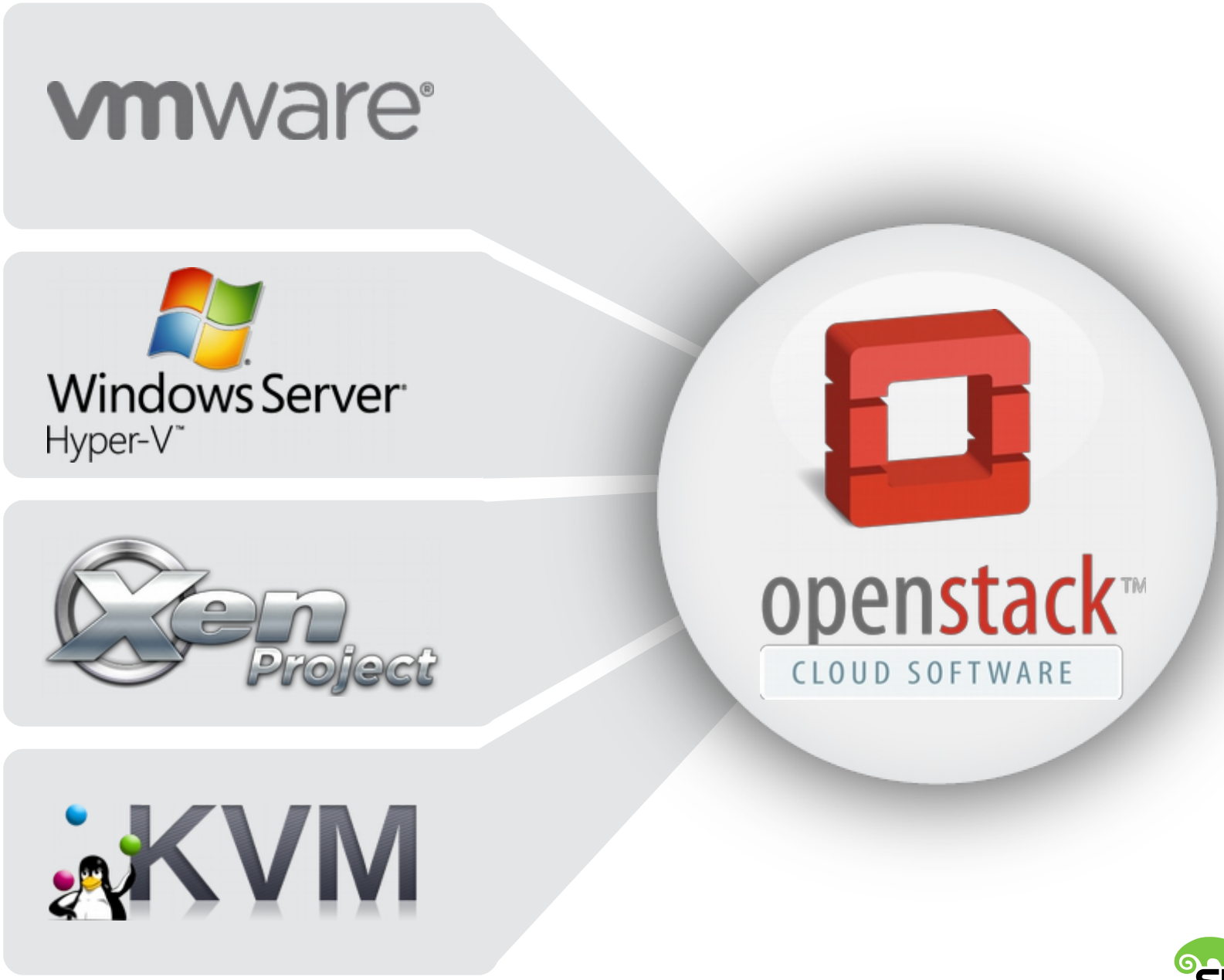
What Do They Need?



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

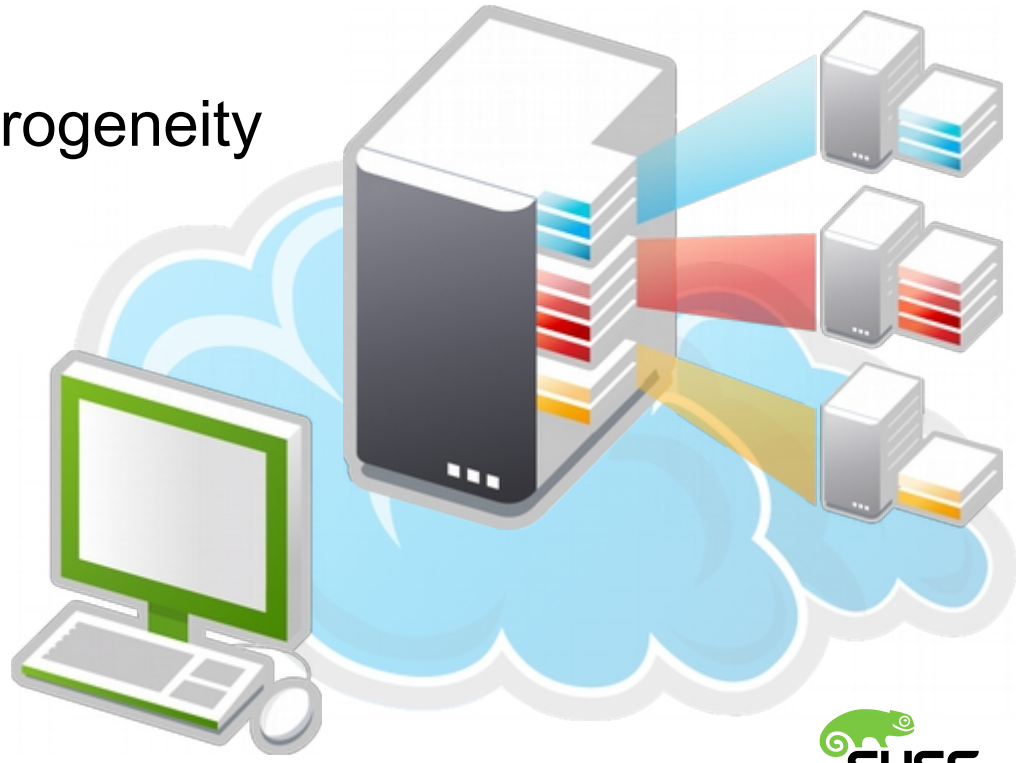
What Do They Need?

Cloud computing platform needs to be agnostic


vmware
Windows Server
Hyper-V
Xen Project
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



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 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?

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

---

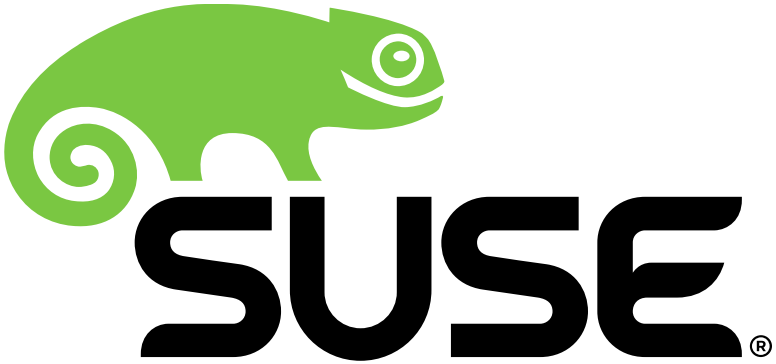
vmware-vdiskmanager \

-r <vmdk file> \

-t 4 <new file>

It's *SHOWTIME!*

Thank you.


SUSE®
We adapt. You succeed.