

# Virtualization Management

## The oVirt way

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Red Hat  
CeBIT, March 15 2015

# Agenda



- What is oVirt?
- What does it do?
- Demo
- What's next?

# What is oVirt?



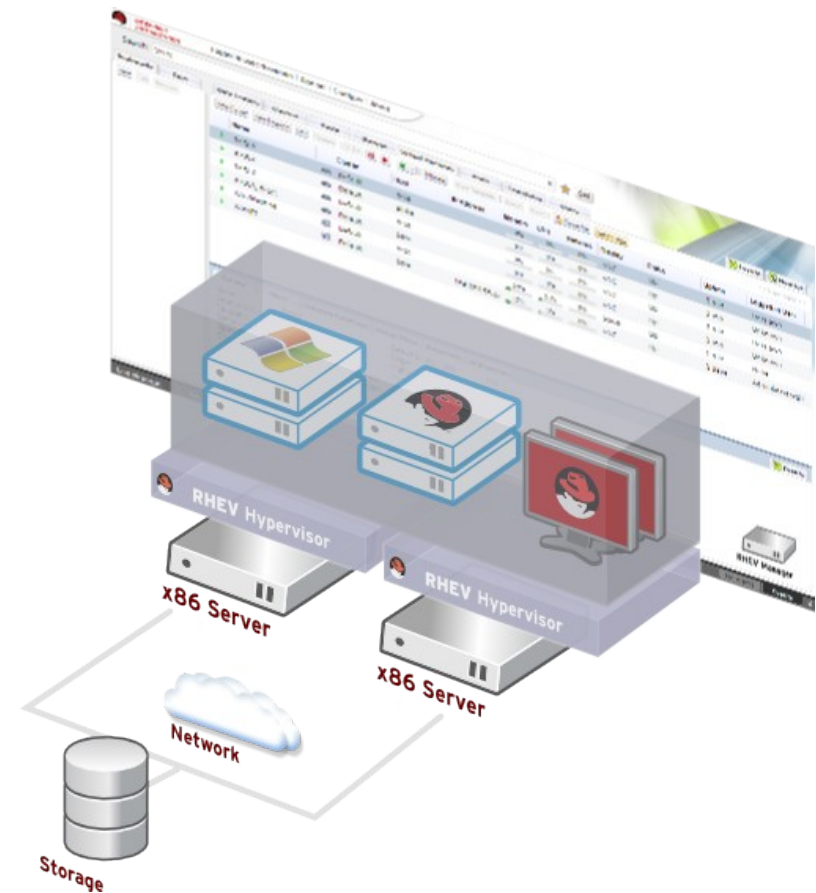
Large scale, centralized management for server and desktop virtualization

Based on leading performance, scalability and security infrastructure technologies

Provide an open source alternative to vCenter/vSphere

Focus on KVM for best integration/performance

Focus on ease of use/deployment



# How Does It Look?



Activities Firefox Fri 22:13 en Itamar Heim

oVirt Enterprise Virtualization Engine Web Administration - Mozilla Firefox

File Edit View History Bookmarks Tools Help

hateya-fed16.qa.lab.tlv.redhat.com:8080/webadmin/webadmin/WebAdmin.html#vms

oVirt Open Virtualization Manager Logged in user: admin@internal | Configure | Guide | About | Sign Out

Search: Vms:

Data Centers Clusters Hosts Storage Virtual Machines Pools Templates Users Events

Tree

- System
  - Default
  - ISCSI-RC-DC
    - Storage
    - Templates
  - Clusters
    - intel-cluster
      - Hosts
        - nott-vds2.qa.lab.tlv.red
        - nott-vds3.qa.lab.tlv.red
      - VMs
    - NFS-RC-DC
      - Storage
      - Templates
      - Clusters

Table:

Name	Cluster	Host	IP Address	Memory	CPU	Network	Display	Status	Uptime	Logged-in User
kaka	intel-cluster			0%	0%	0%		Down		
myVm1	intel-cluster	nott-vds2.qa.lab.tlv.red		0%	6%	0%	Spice	Up	1 day	
myVm10	intel-cluster	nott-vds2.qa.lab.tlv.red		0%	0%	0%	Spice	Up	1 day	
myVm11	intel-cluster	nott-vds2.qa.lab.tlv.red		0%	0%	0%	Spice	Up	1 day	
myVm12	intel-cluster	nott-vds2.qa.lab.tlv.red		0%	0%	0%	Spice	Up	1 day	
myVm13	intel-cluster	nott-vds2.qa.lab.tlv.red		0%	0%	0%	Spice	Up	1 day	
myVm15	intel-cluster	nott-vds2.qa.lab.tlv.red		0%	0%	0%	Spice	Up	1 day	
myVm16	intel-cluster	nott-vds2.qa.lab.tlv.red		0%	0%	0%	Spice	Up	1 day	
myVm17	intel-cluster	nott-vds2.qa.lab.tlv.red		0%	0%	0%	Spice	Up	1 day	
myVm18	intel-cluster			0%	0%	0%		Down		
myVm19	intel-cluster			0%	0%	0%		Down		
myVm2	intel-cluster			0%	0%	0%		Down		
myVm20	intel-cluster			0%	0%	0%		Down		
myVm21	intel-cluster			0%	0%	0%		Down		
myVm22	intel-cluster			0%	0%	0%		Down		
myVm23	intel-cluster			0%	0%	0%		Down		
myVm24	intel-cluster	nott-vds2.qa.lab.tlv.red		0%	0%	0%	Spice	Paused	5 days	
myVm25	intel-cluster	nott-vds2.qa.lab.tlv.red		0%	6%	0%	Spice	Paused	5 days	
myVm26	intel-cluster	nott-vds2.qa.lab.tlv.red		0%	0%	0%	Spice	Paused	5 days	
myVm27	intel-cluster	nott-vds2.qa.lab.tlv.red		0%	0%	0%	Spice	Paused	5 days	

Bookmarks

Tags

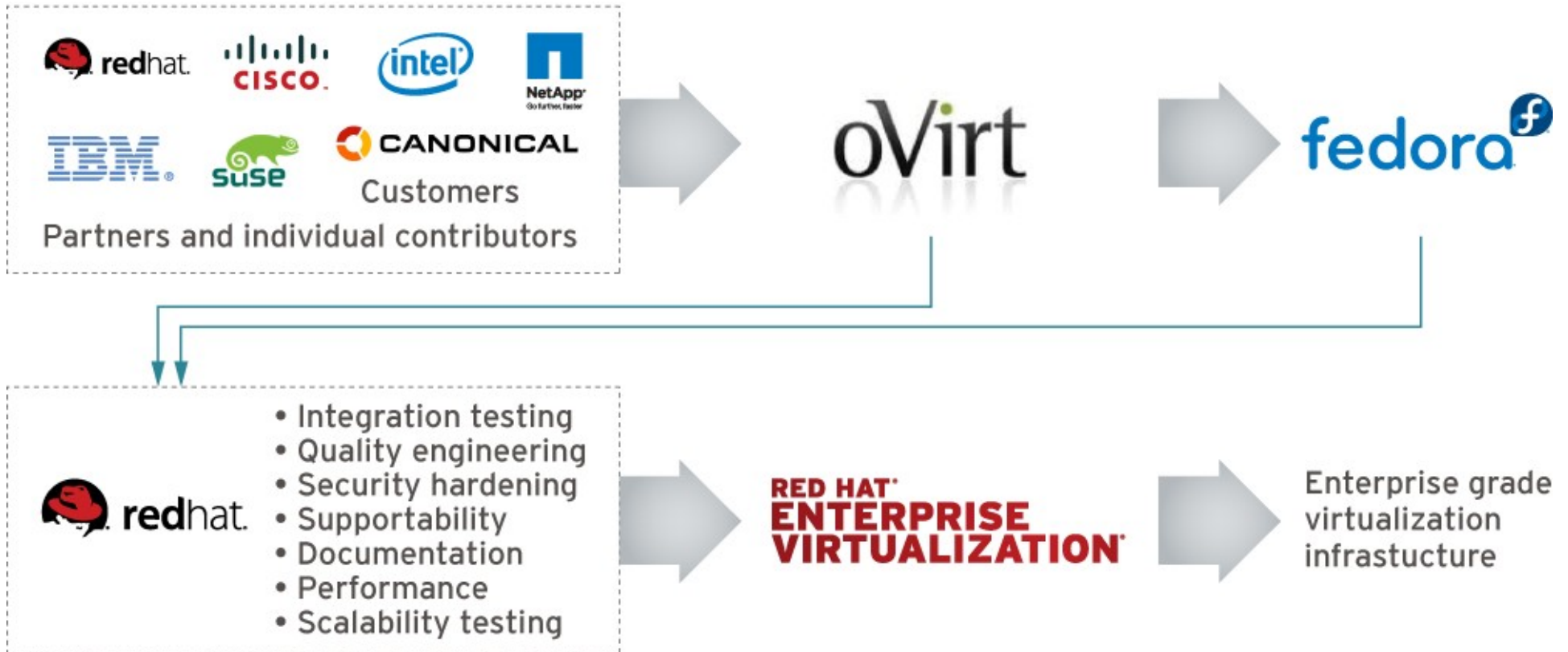
Last Message: 2012-Jan-31, 23:18:41 User admin@internal logged in.

3 Alerts Events

Browser Firefox version 9 is currently not supported.

# Who is Behind It

oVirt



## Current List of Upstream Projects

- oVirt-Engine
- VDSM
- oVirt-Node
- Ovirt-Engine-SDK
- oVirt-Engine-CLI
- oVirt-Guest-Agent
- oVirt-Image-Uploader
- oVirt-iso-Uploader
- oVirt-Log-Collector
- oVirt-DWH
- oVirt-Reports

## Incubation Projects

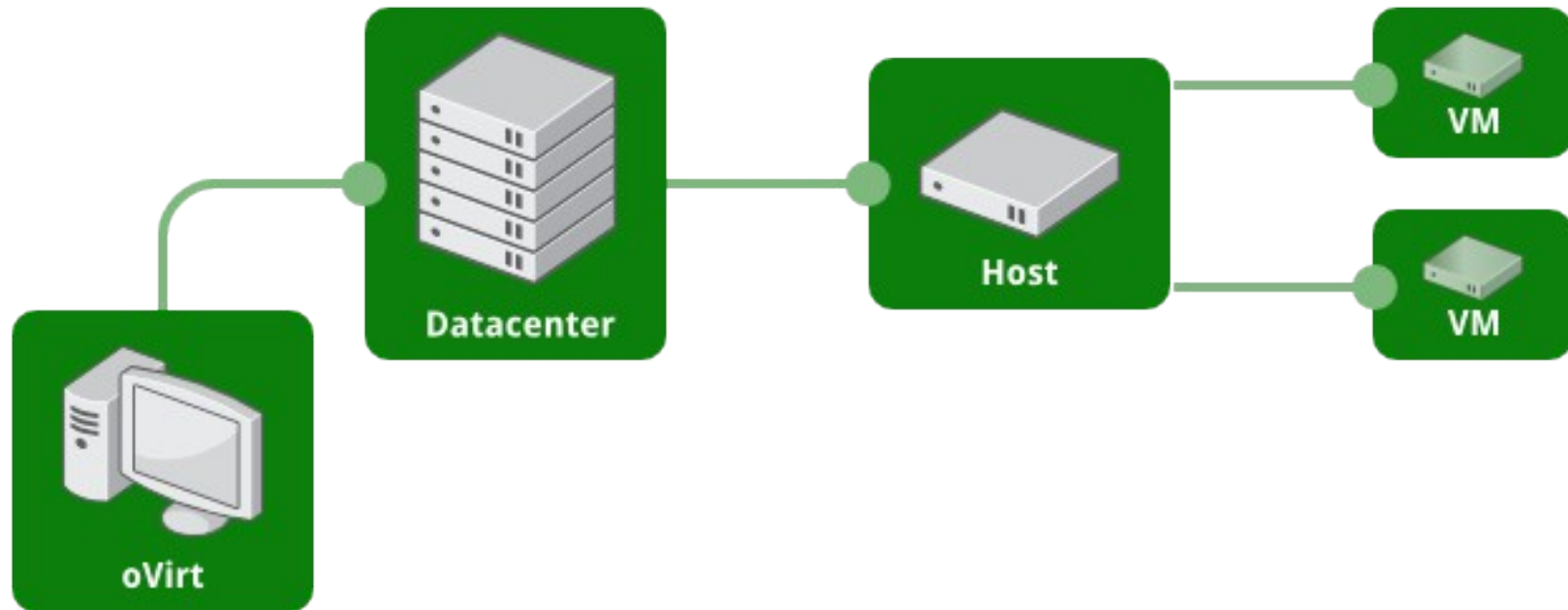
- MOM
- moVirt

## Test Projects

# One Host Environment

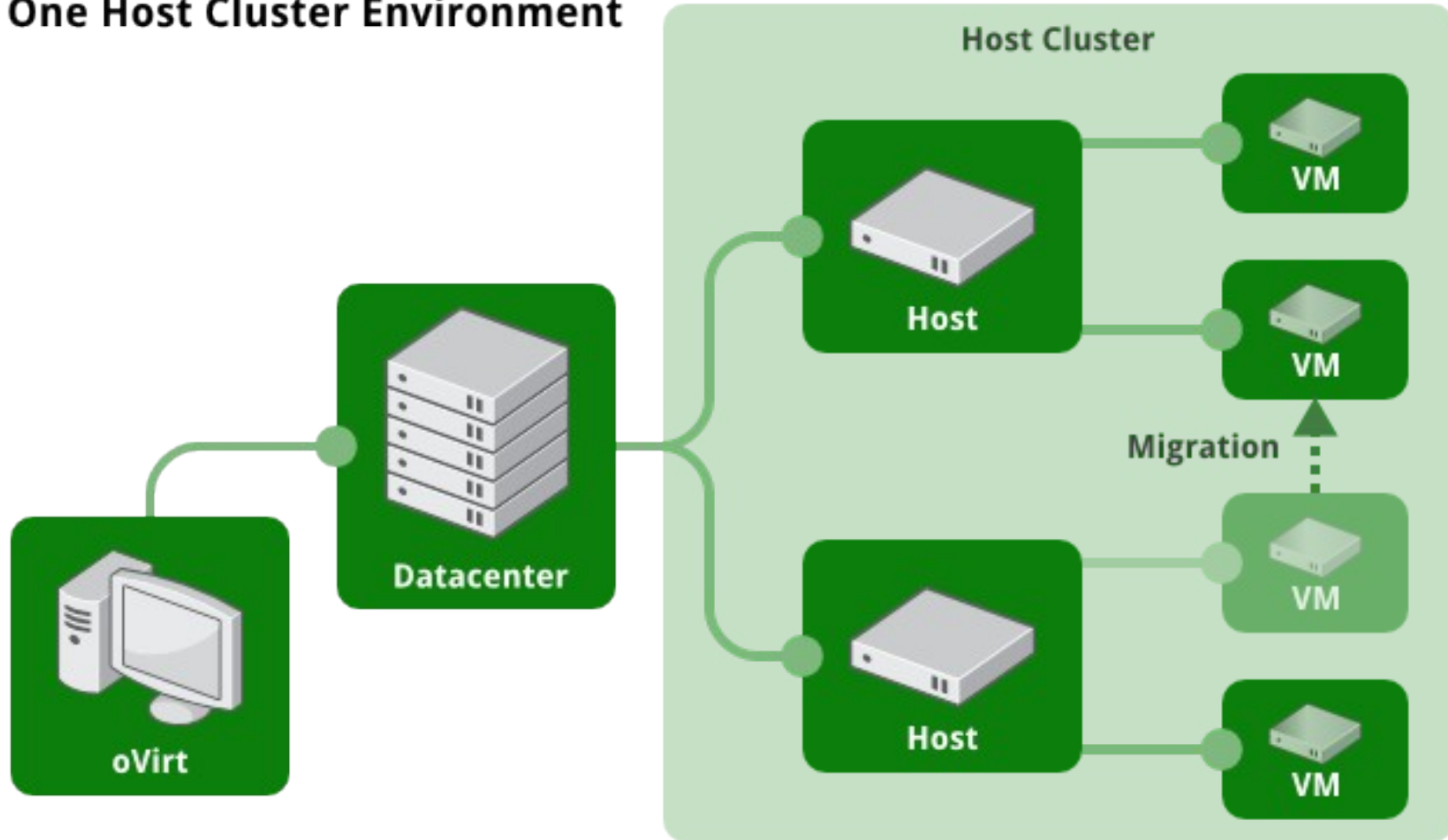


## Basic One Host Environment



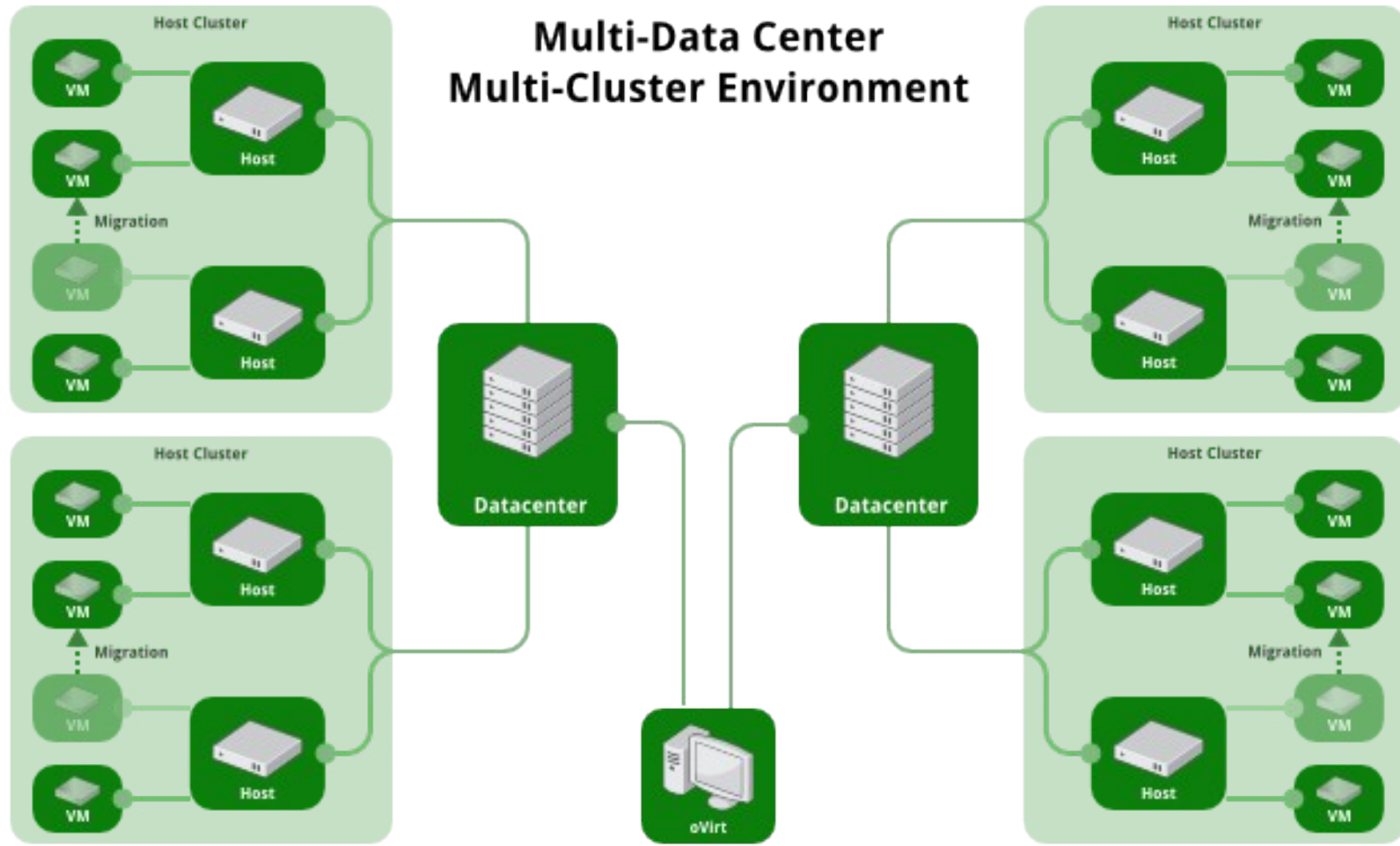
# Multiple Hosts

## One Host Cluster Environment

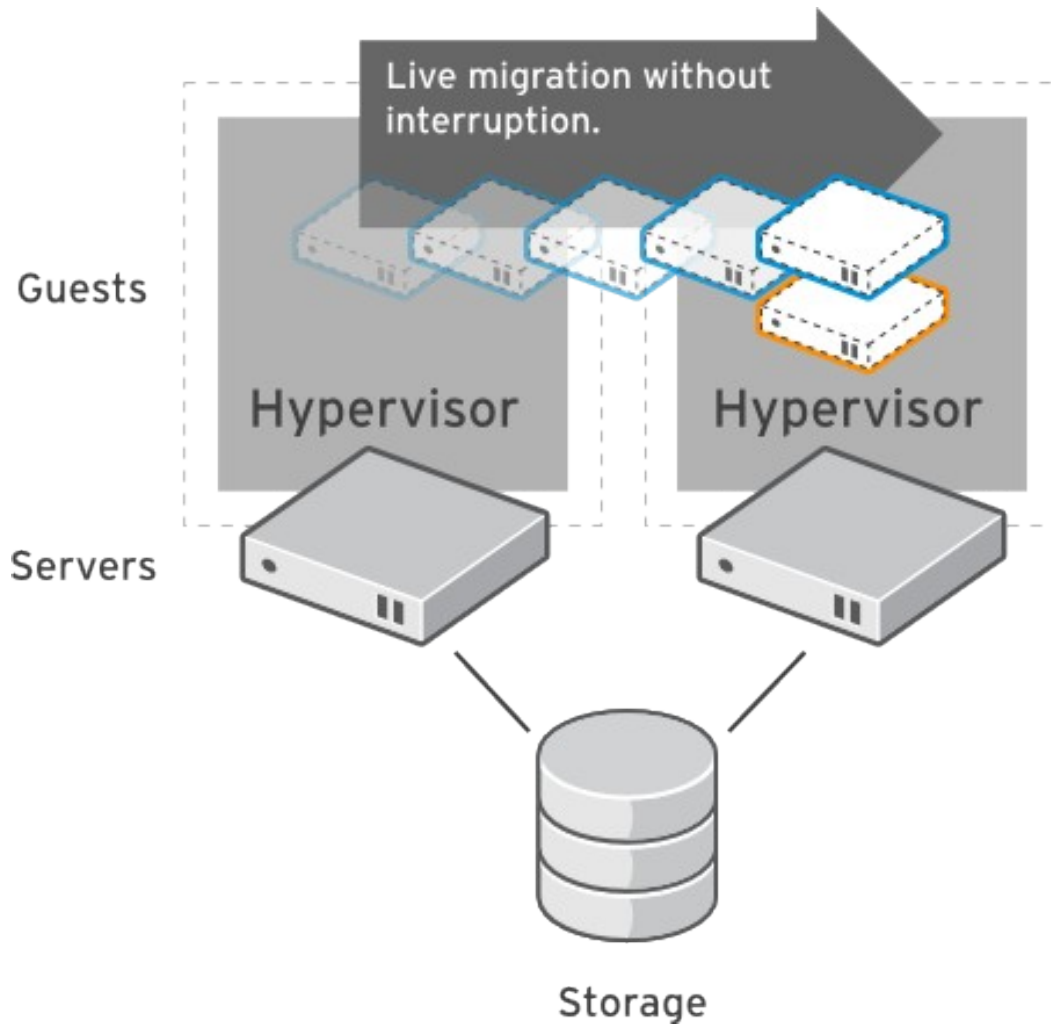




# Multi-Datacenter/Multi-Host

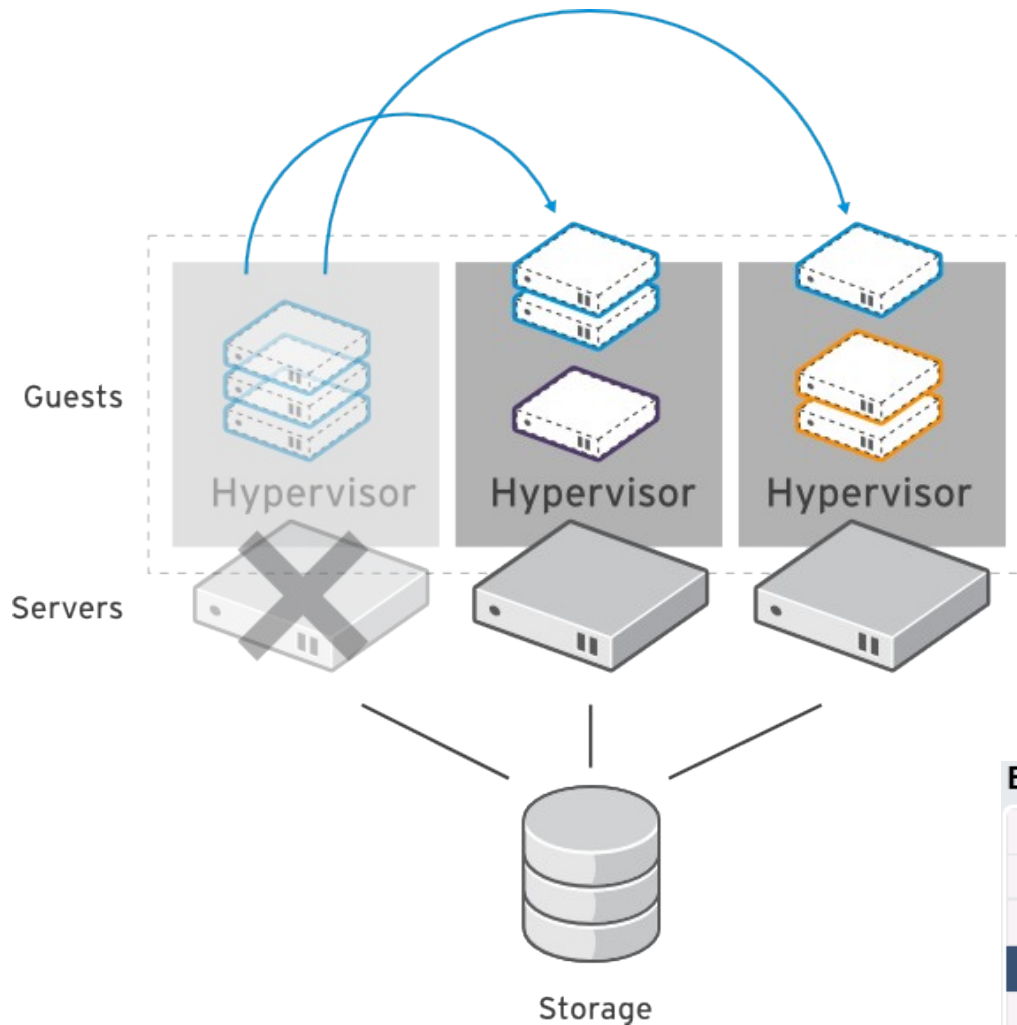


# Live Migration

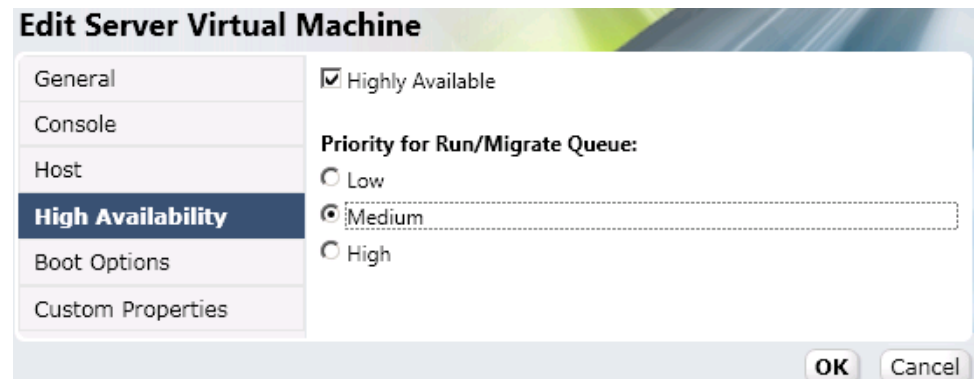


- Dynamically move virtual machines between hosts
  - No service interruption
  - Applications continue to run
- Migrate even I/O intensive workloads such as databases
- Perform hardware maintenance without application downtime
- Dynamically balance workloads between host systems

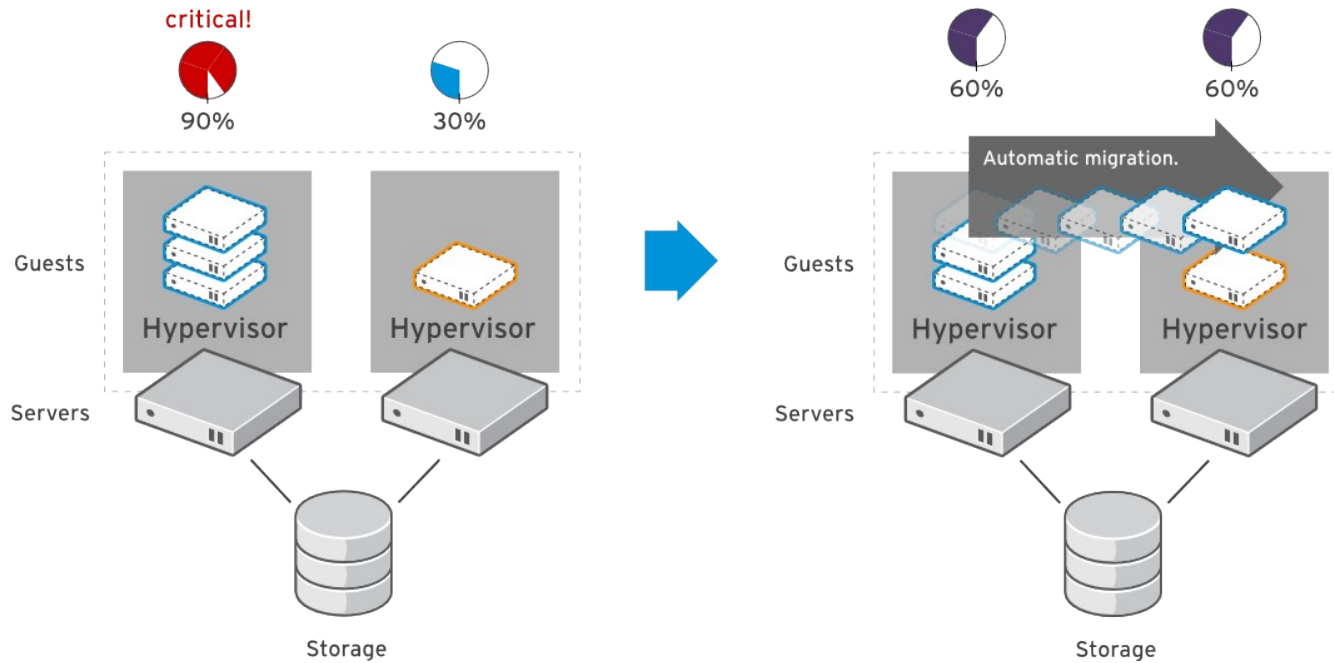
# High Availability



- Build a highly available enterprise infrastructure
- Continually monitor host systems and virtual machines
- Automatically restart virtual machines in case of host failure
  - Restart virtual machine on another node in the cluster
- Use live migration to “fail-back” a VM to it's original host when the server is restored



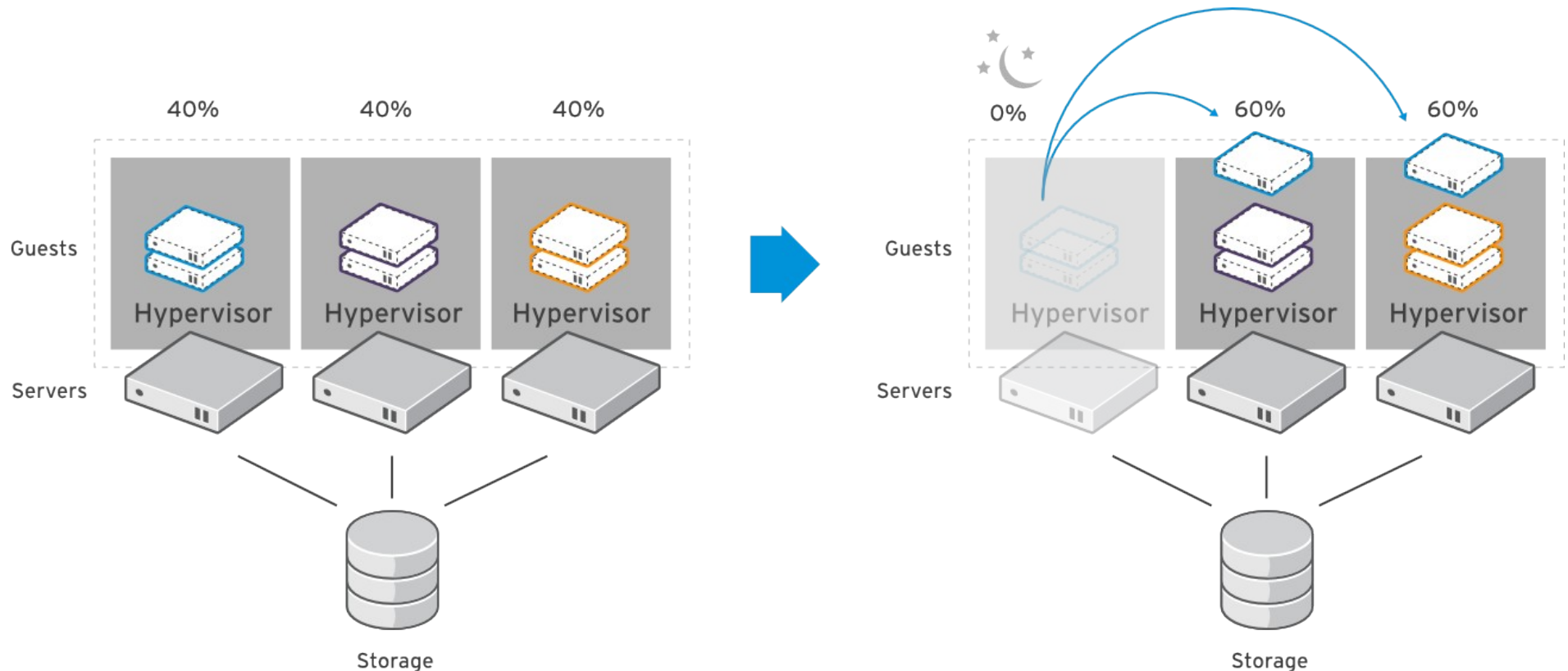
# System Scheduler



- Dynamically balance workloads in the data center.
- Automatically live migrate virtual machines based on resources
- Define custom policies for distribution of virtual machines

Maintain consistent resource usage across the enterprise data center

# Power Saver



Define policies to optimize workload on a fewer number of servers during “off-peak” hours

# oVirt CLI (empowered by a python SDK)



## AVAILABLE COMMANDS

```
* action      execute an action on an object
* cd          change directory
* clear       clear the screen
* connect     connect to a RHEV manager
* console     open a console to a VM
* create      create a new object
* delete      delete an object
* disconnect  disconnect from RHEV manager
* exit        quit this interactive terminal
* getkey      dump private ssh key
* help        show help
* list        list or search objects
* ping        test the connection
* pwd         print working directory
* save        save configuration variables
* set         set a configuration variable
* show        show one object
* status      show status
* update      update an object
```

```
(oVirt cli) > help connect
```

## USAGE

```
connect
connect <url> <username> <password>
```

## DESCRIPTION

Connect to a RHEV manager. This command has two forms. In the first form, no arguments are provided, and the connection details are read from their respective configuration variables (see 'show'). In the second form, the connection details are provided as arguments.

The arguments are:

```
* url          - The URL to connect to.
* username     - The user to connect as. Important: this needs to
                 in the user@domain format.
* password     - The password to use.
```

# oVirt Reports

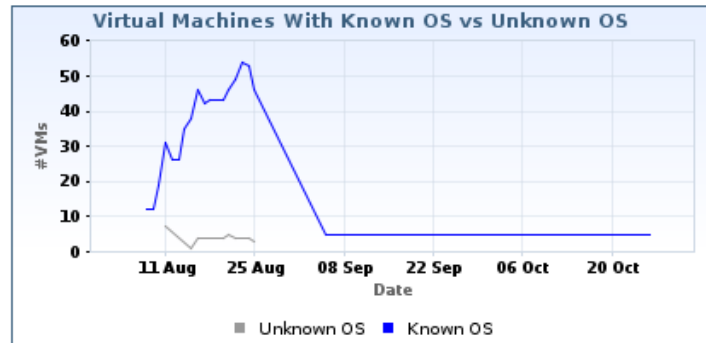
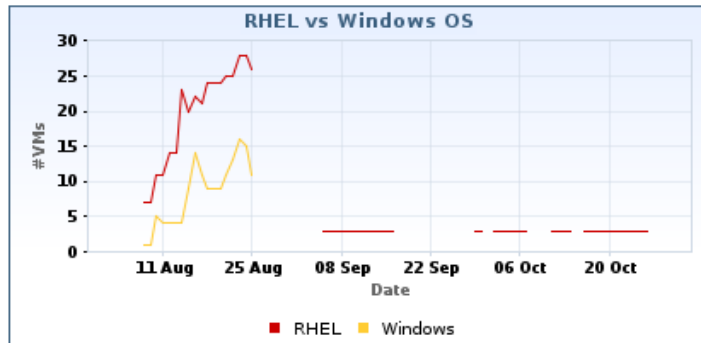
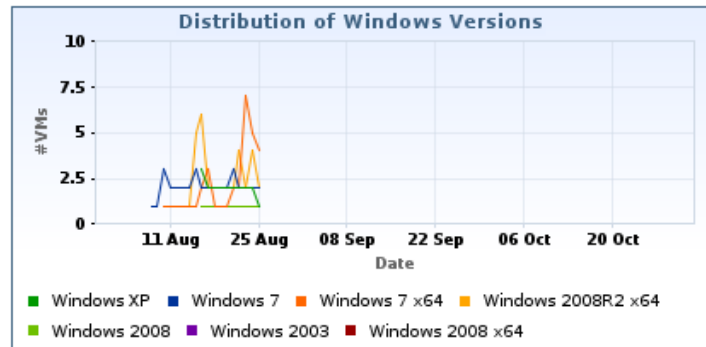
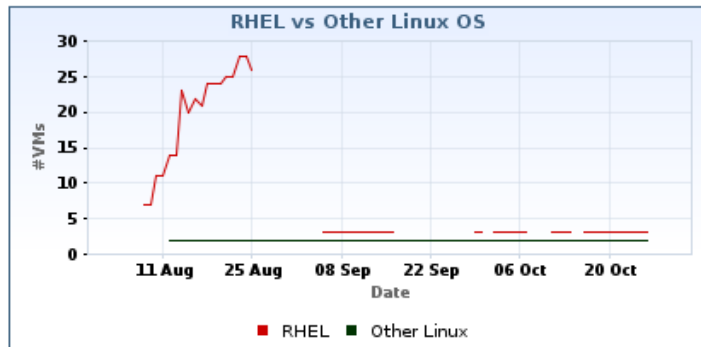


oVirt Reports

Oct 31, 2011

## Active Virtual Machines by OS in Clusters of Data Center Default

**Criteria:** Datacenter: Default      Date Range: 2011-08-01 - 2011-10-31      VM Type: All  
 Cluster: All      Period: Quarterly      Show Deleted Virtual Machines: Yes



**Input Controls**

\* Show Deleted Entities?:

\* Data Center:

\* Cluster:

\* VM Type:

\* Period Range:

\* Select Month:

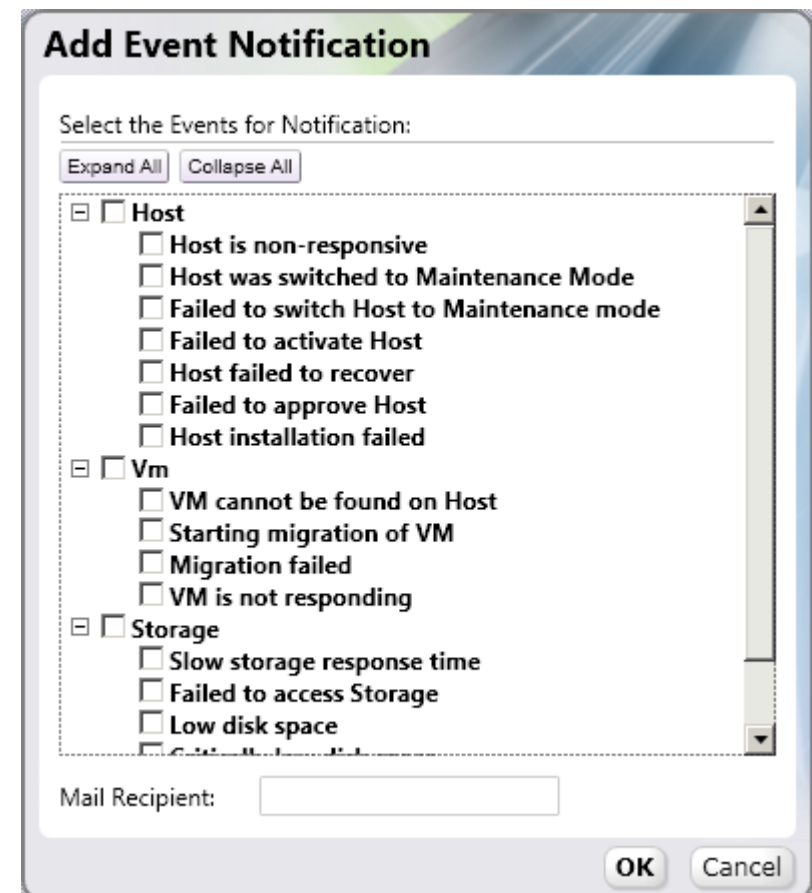
\* Start Date:

\* End Date:

# Notification Service

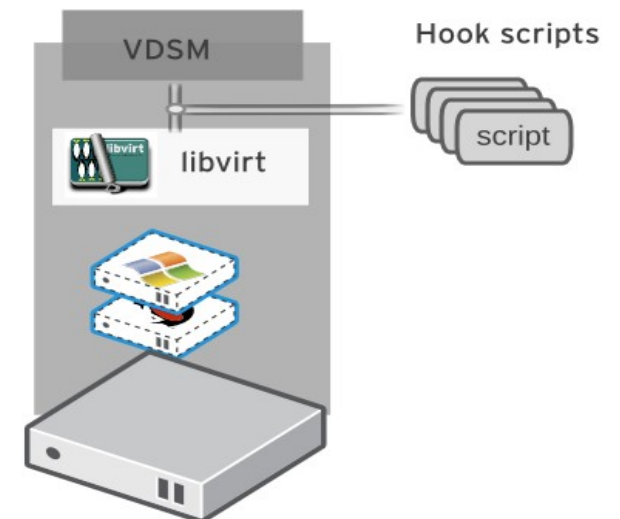


- oVirt allows registration to certain audit events
- The notification service sends emails per audit message to relevant users
- Also monitors engine itself





- “Hook” mechanism for customization
  - Allows administrator to define scripts to modify VM operation
    - eg. Add extra options such as CPU pinning, watchdog device, direct LUN access, etc
  - Allows oVirt to be extended for new KVM features before full integration is done
  - An easy way to test a new kvm/libvirt/linux feature



# New and Planned Features

- Hosted Engine Support for GlusterFS, FibreChannel
- Support for Ubuntu Hosts
- OpenStack Cinder storage domains with Ceph backend
- Support for SANLock fencing
- Import data domain
- Hot-unplug CPU
- Hot-plug memory
- Multiple NICs per VM upon VM creation
- Host profiles
- libgfapi support

# Getting oVirt



- Obtain from oVirt website -
  - <http://www.ovirt.org/Download>
- Fedora repositories
- Live USB - [http://wiki.ovirt.org/wiki/OVirt\\_Live](http://wiki.ovirt.org/wiki/OVirt_Live)
- Build from source

# THANK YOU!

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<irc://irc.oftc.net/#ovirt>