Virtualization Management
The oVirt way

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Agenda

- What is oVirt?

- What does it do?
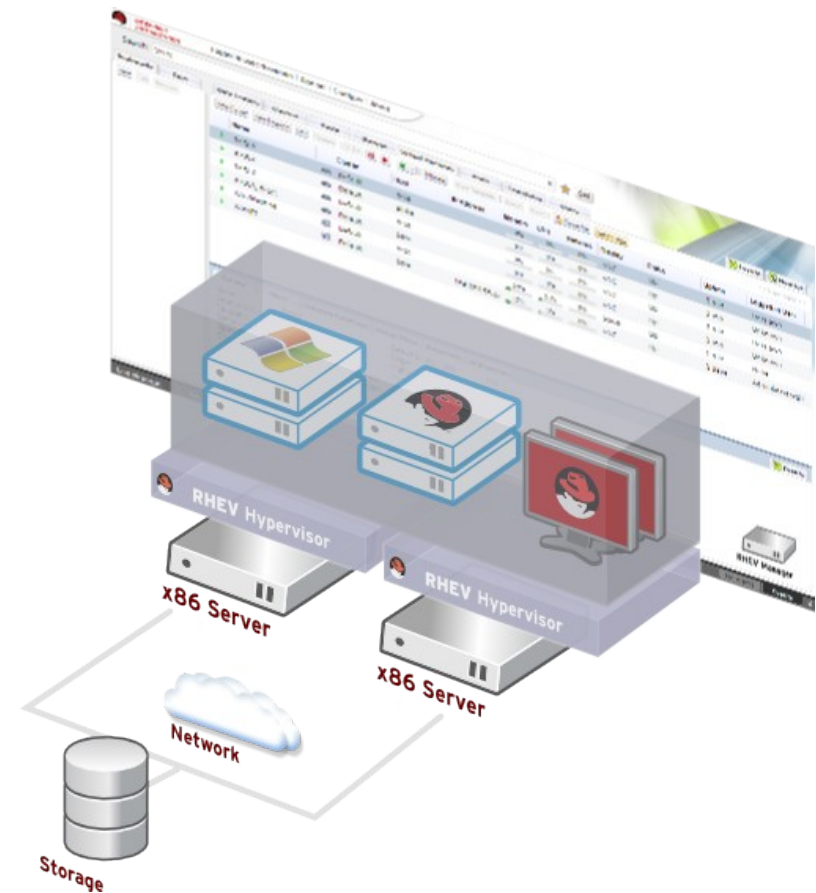
- Demo

- 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?

Who is Behind It

oVirt: Not a Single Project

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
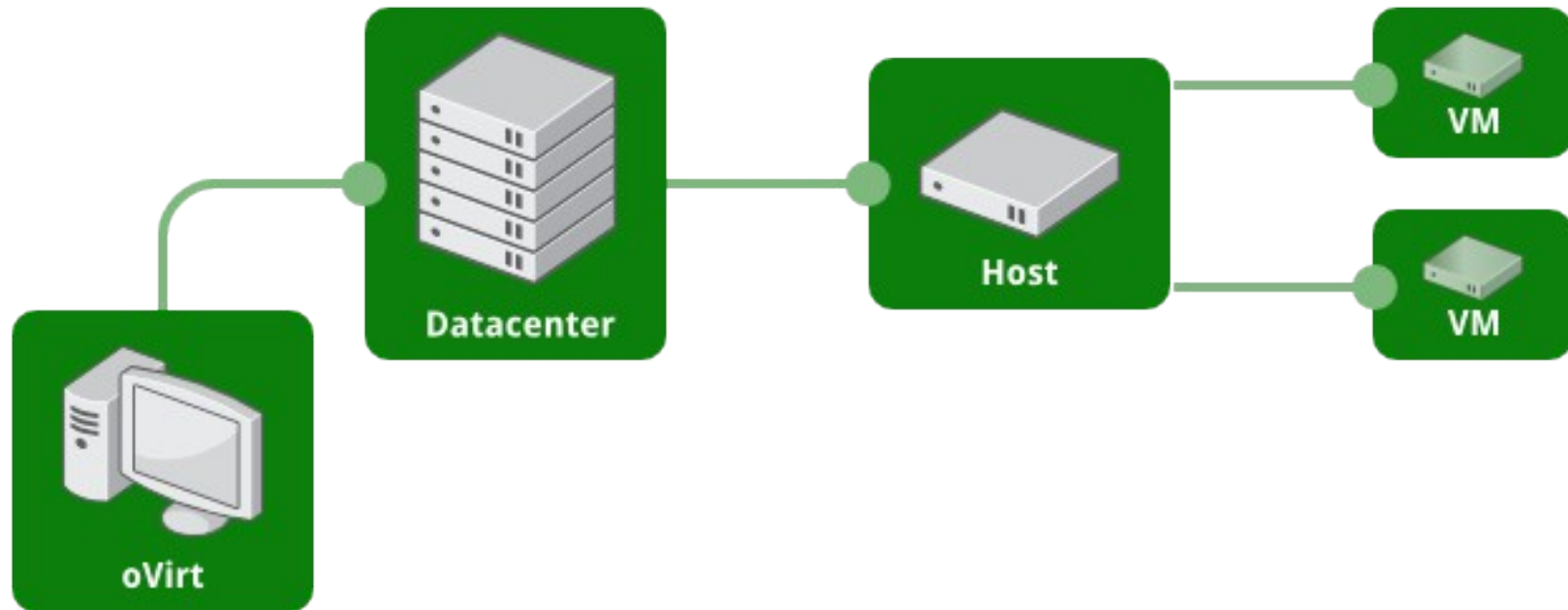
Multiple Hosts

One Host Cluster Environment
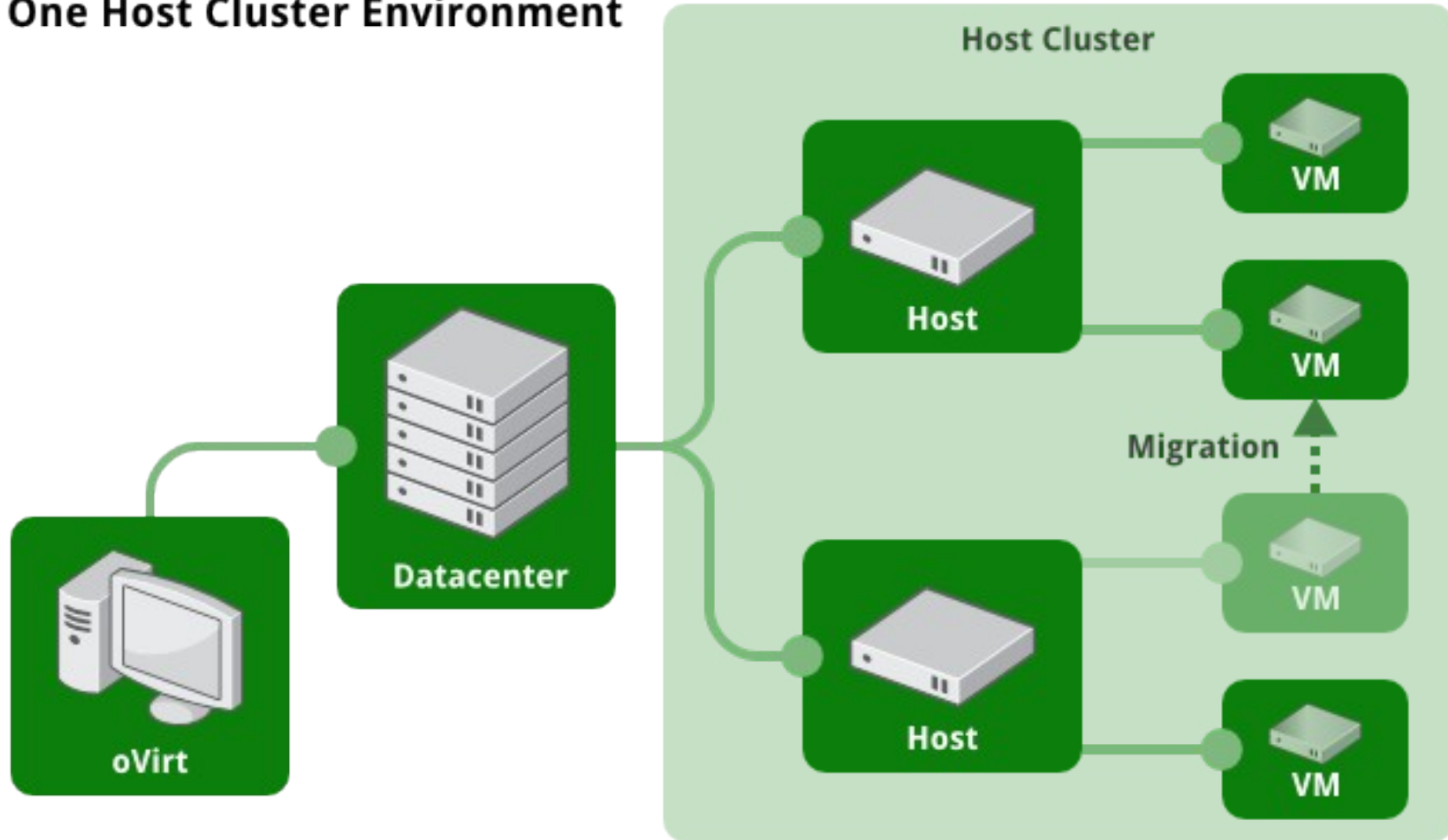
Multi-Datacenter/Multi-Host

Live Migration

Live migration without interruption.

Guests

Hypervisor   Hypervisor

Servers

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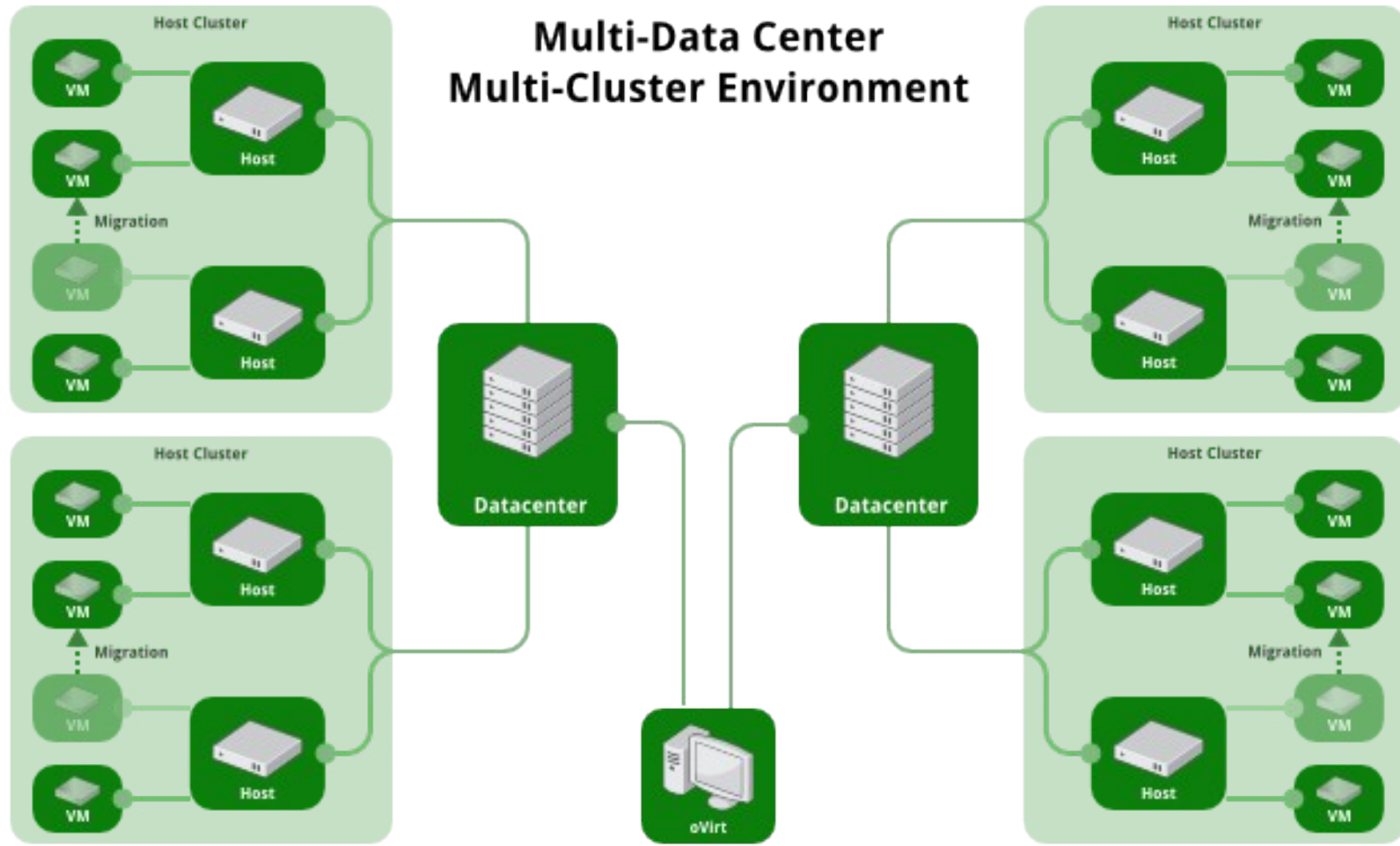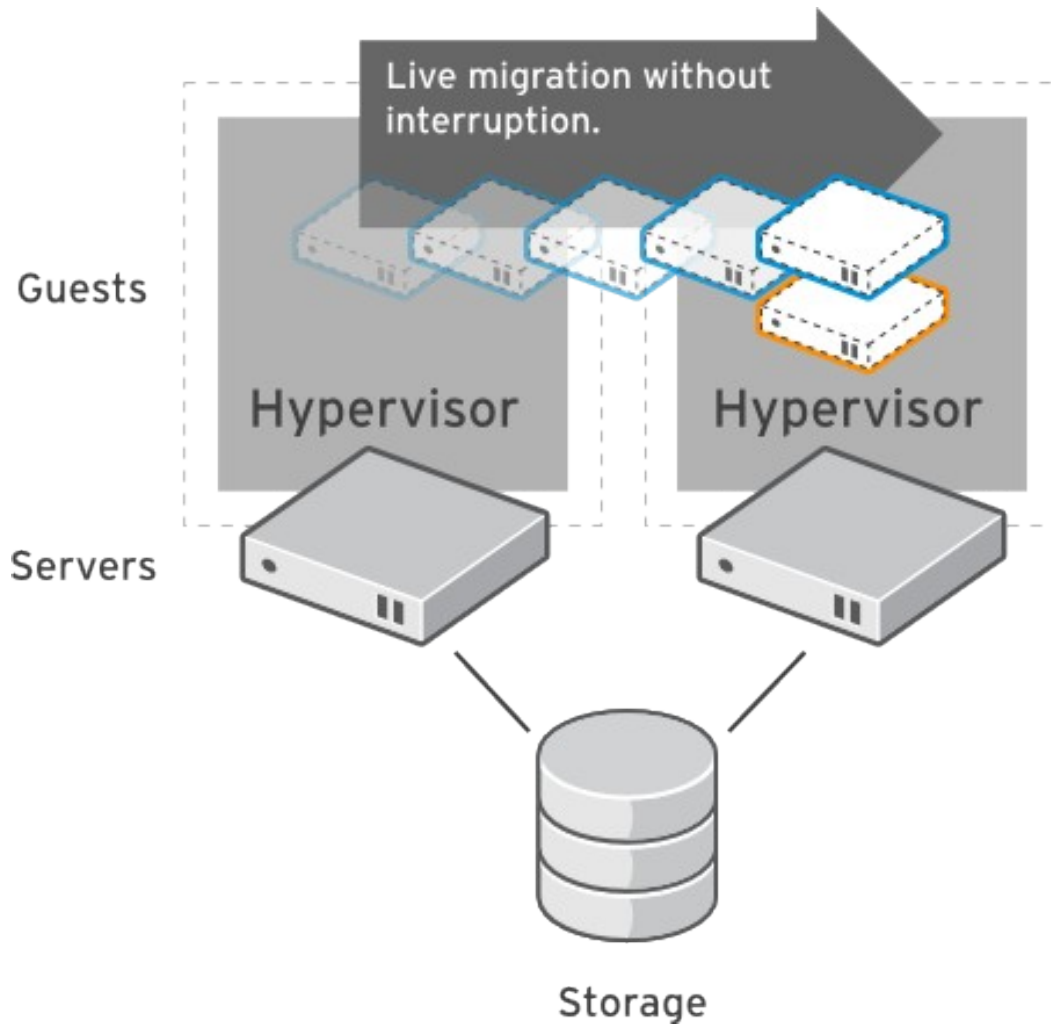
- Dynamically move virtual machines between hosts
  - No service interruption
  - Applications continue to run
- Migrate even I/O intensive workloads such as databases
- Perform hardware maintenance without application downtime
- Dynamically balance workloads between host systems

High Availability

oVirt

Guests

Hypervisor   Hypervisor   Hypervisor

Servers

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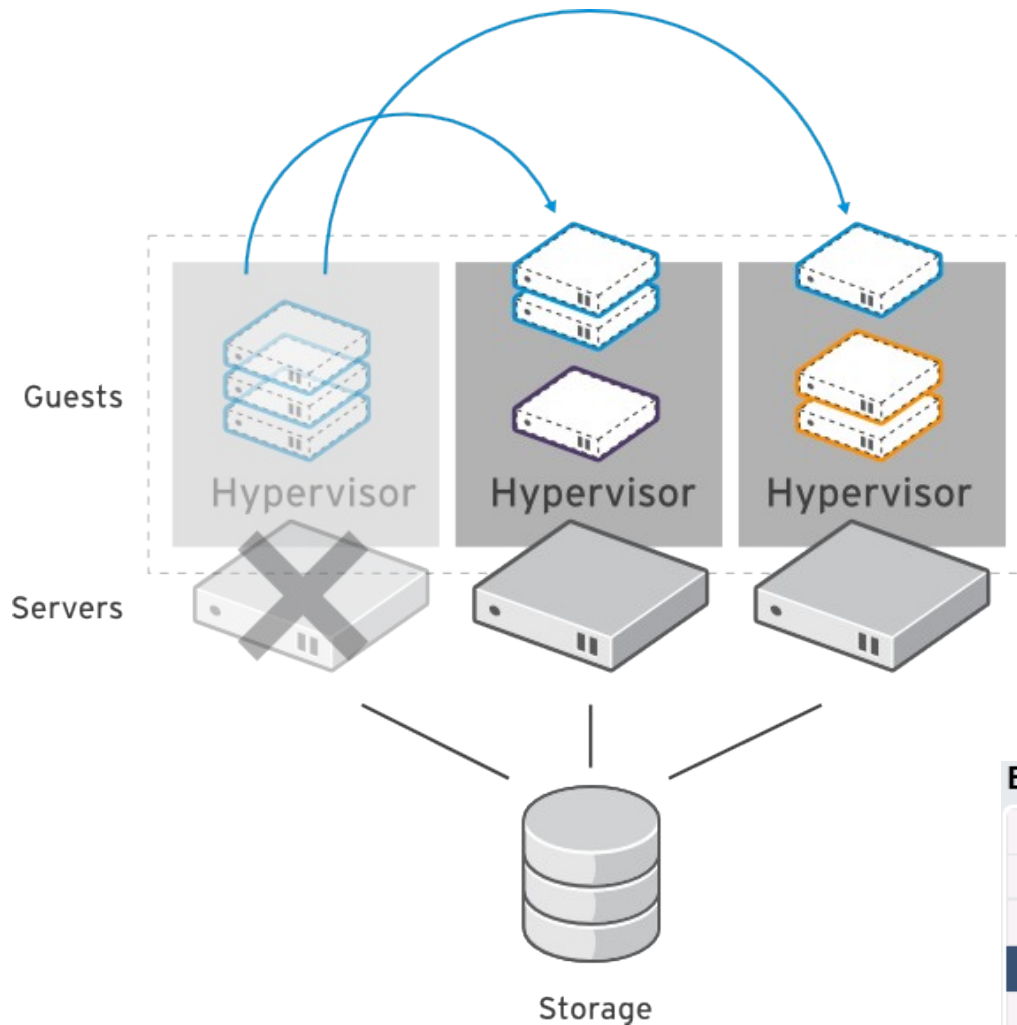
- Build a highly available enterprise infrastructure
- Continually monitor host systems and virtual machines
- Automatically restart virtual machines in case of host failure
  - Restart virtual machine on another node in the cluster
- Use live migration to "fail-back" a VM to it's original host when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

Edit Server Virtual Machine

General	☑ Highly Available
Console	
Host	**Priority for Run/Migrate Queue:**
	○ Low
High Availability	⊙ Medium
Boot Options	○ High
Custom Properties	

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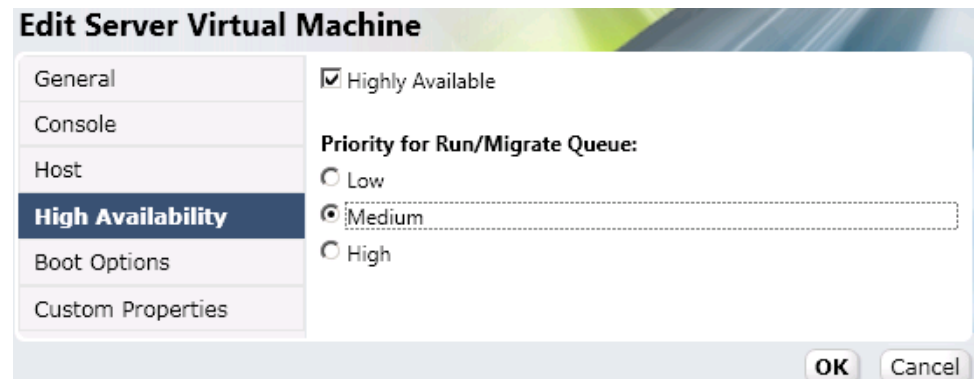
System Scheduler
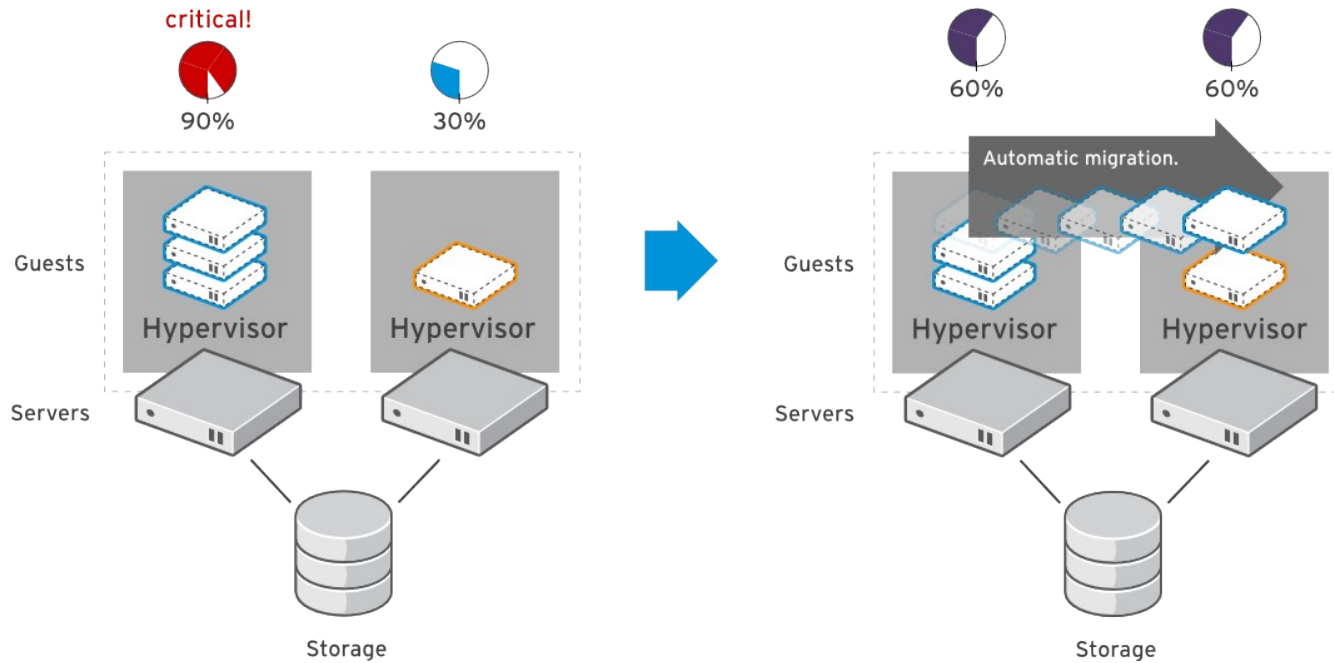
- Dynamically balance workloads in the data center.
- Automatically live migrate virtual machines based on resources
- Define custom policies for distribution of virtual machines

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)
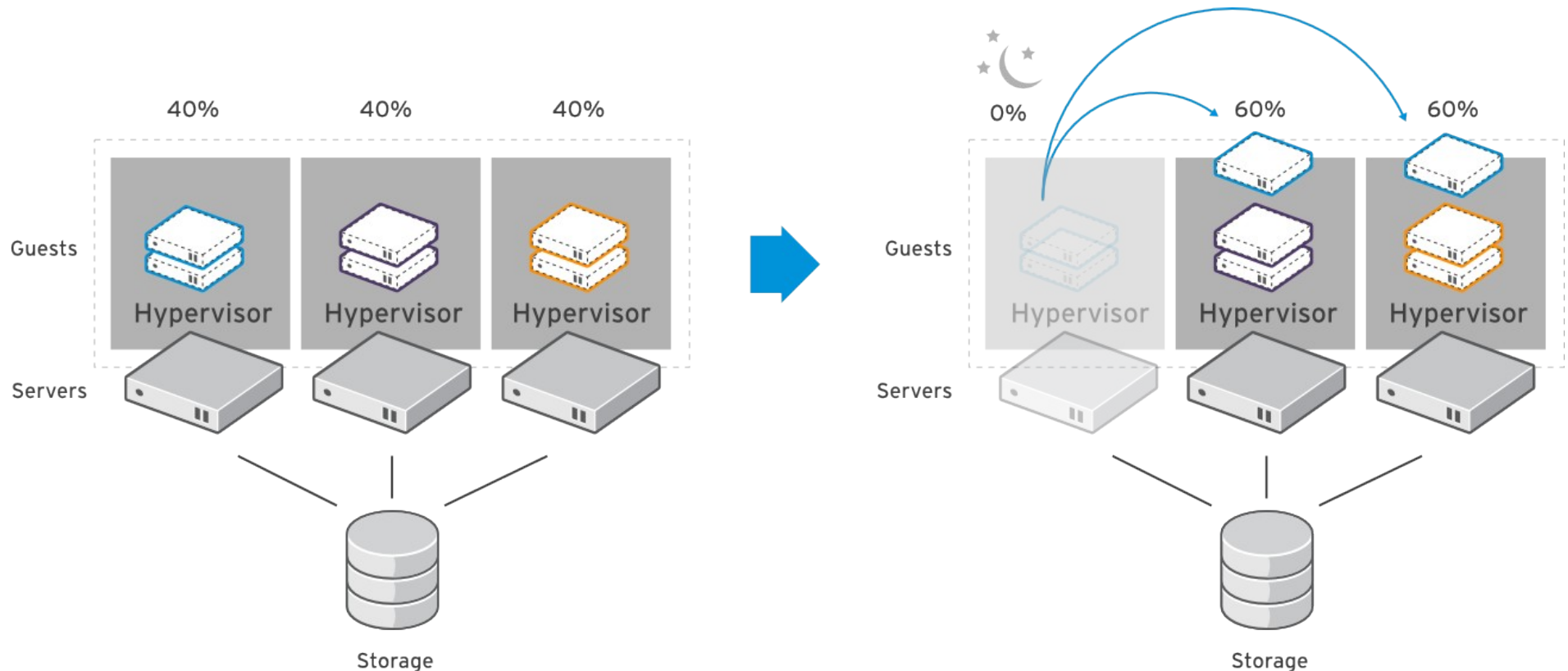
```
AVAILABLE COMMANDS

    * 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 firs
    form, no arguments are provided, and the connection details are rea
    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.
```
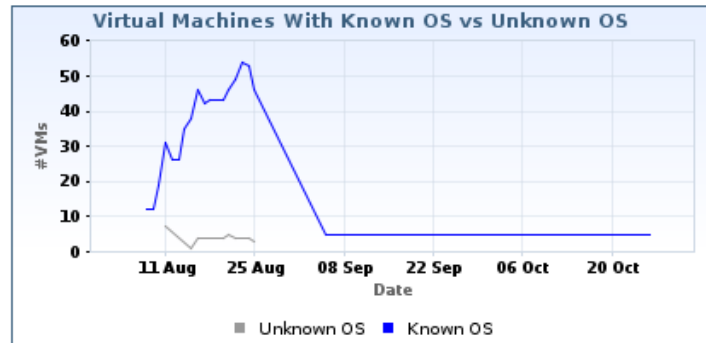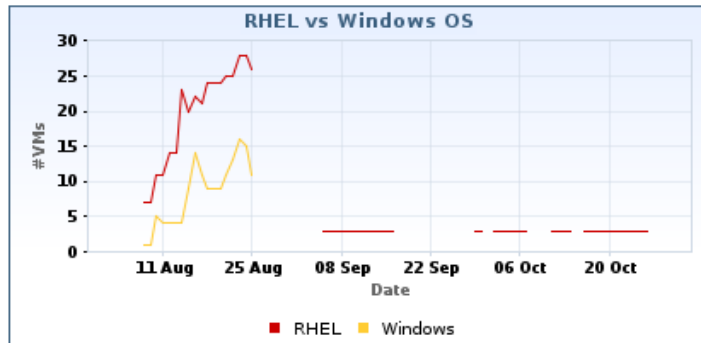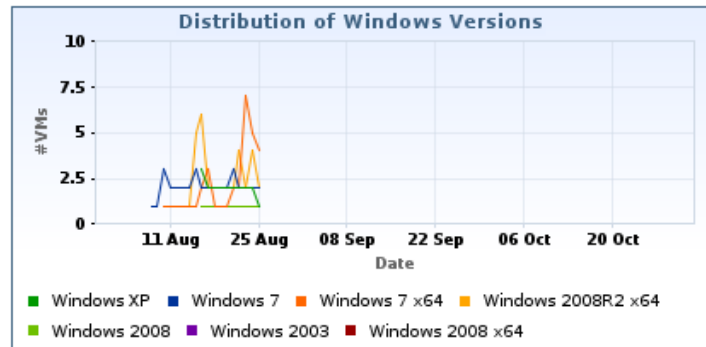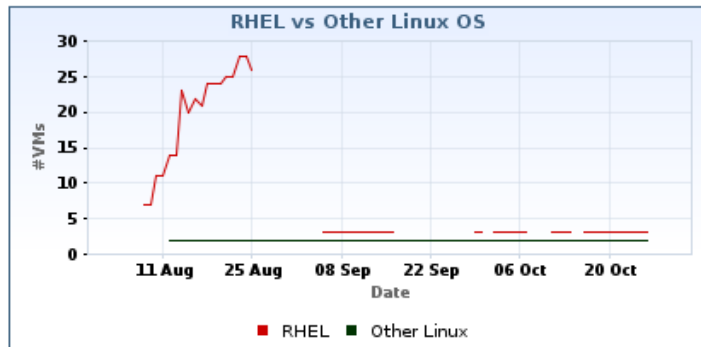
oVirt Reports
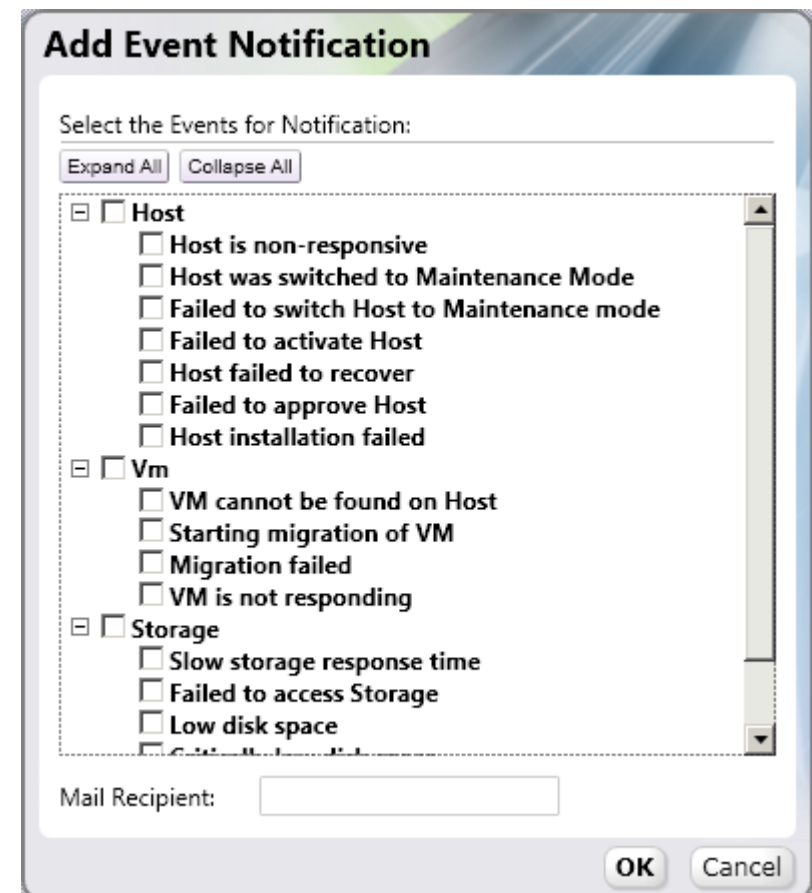
Notification Service

- oVirt allows registration to certain audit events

- The notification service sends emails per audit message to relevant users

- Also monitors engine itself

Hooks

- "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
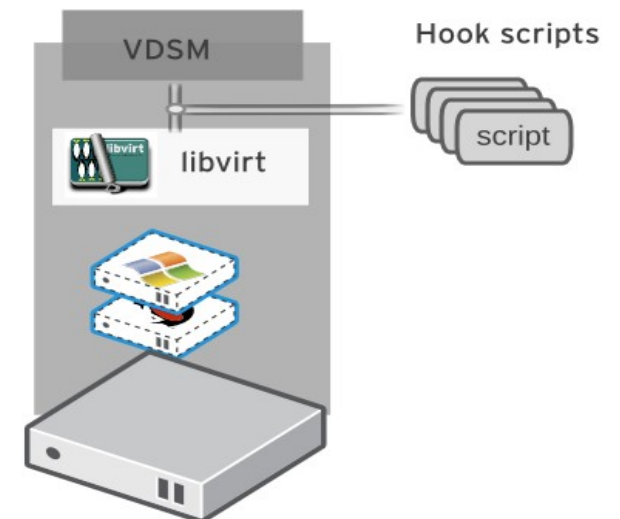
New and Planned Features

- 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

- Build from source

THANK YOU!

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