



# oVirt Introduction

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# Agenda



- What is oVirt?
- What does it do?
- Architecture
- How To Contribute

## What is oVirt?

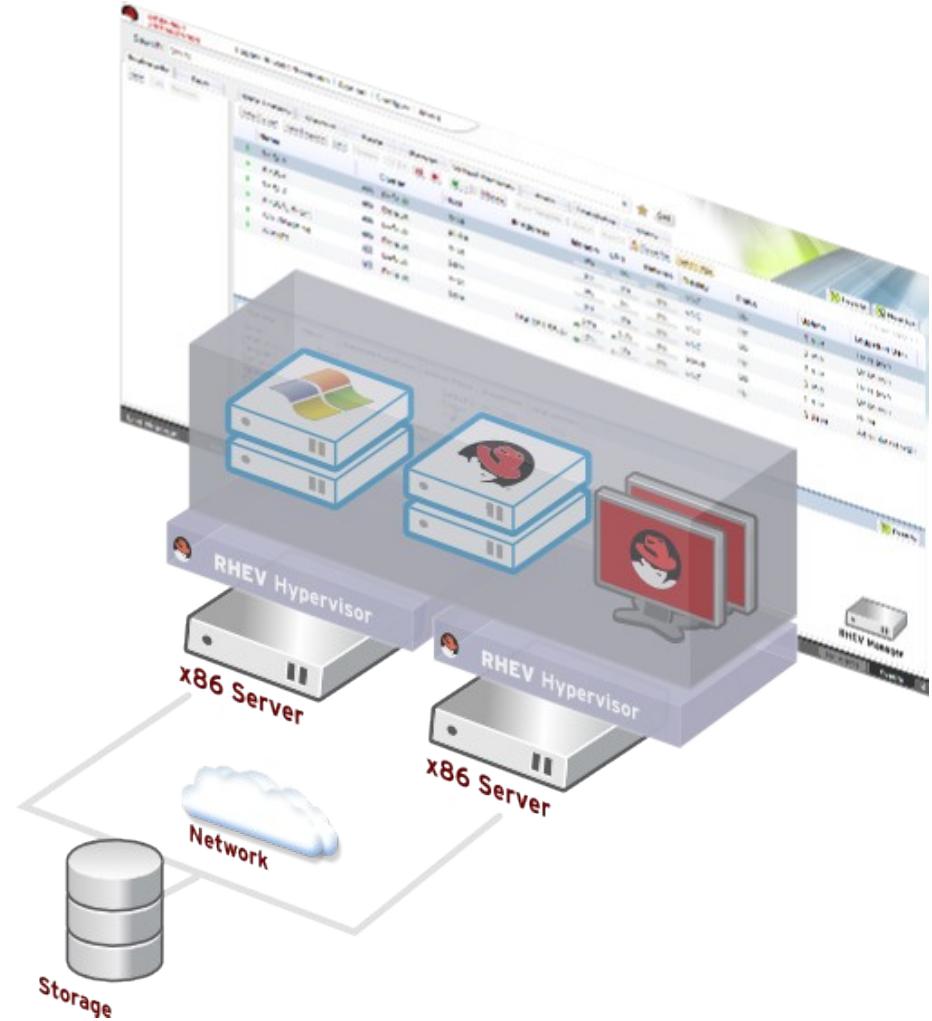
Large scale, centralized management for server and desktop virtualization

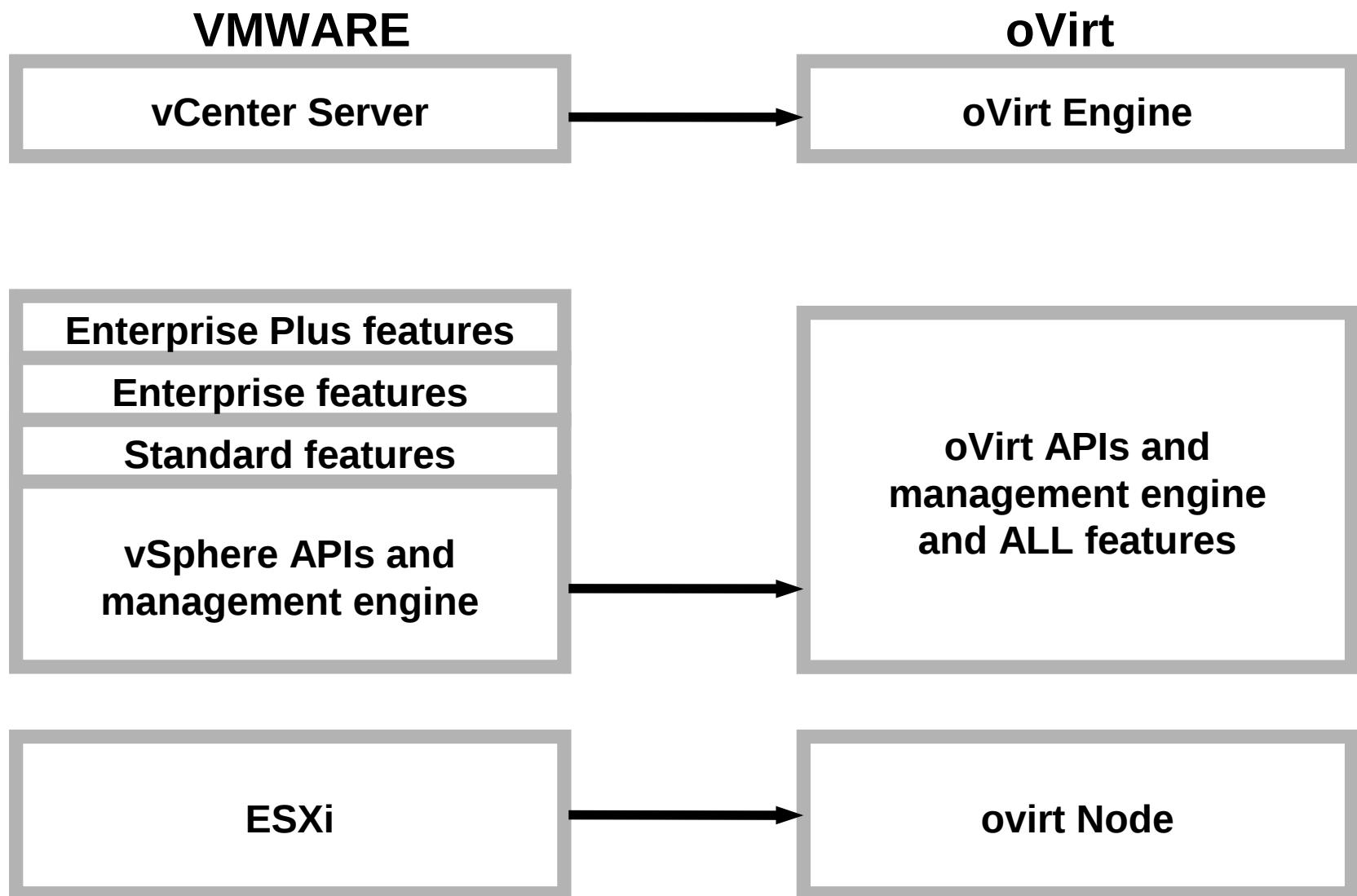
Based on leading performance, scalability and security infrastructure technologies

Provide an open source alternative to vCenter/vSphere

Two key components

- Hypervisor -> oVirt Node
- Management Server  
->oVirt Engine





Activities Firefox Fri 22:13 Itamar Heim

File Edit View History Bookmarks Tools Help

oVirt Enterprise Virtualization Engine Web Administration - Mozilla Firefox

oVirt Enterprise Virtualization E... + hateya-fed16.qa.lab.tlv.redhat.com:8080/webadmin/webadmin/WebAdmin.html#vms Google

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

Search: Vms: Events

Virtual Machines												
		Name	Cluster	Host	IP Address	Memory	CPU	Network	Display	Status	Uptime	Logged-in User
New Server	New Desktop	Edit	Remove	Run Once	Migrate	Make Template	Export	Move	Change CD	Assign Tags	<span style="float: right;">Events</span>	
<span style="float: right;">&lt;&lt; Prev Next &gt;&gt;</span>												
■ 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		

Tree Expand All Collapse All

- 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

Bookmarks Tags

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# Goals of the oVirt project

- Build a community around all levels of the virtualization stack – hypervisor, manager, GUI, API, etc.
- To deliver both a cohesive complete stack and discretely reusable components for open virtualization management
- Provide a release of the project on a well defined schedule
- Focus on management of the KVM hypervisor, with exceptional guest support beyond Linux
- Provide a venue for user and developer communication and coordination

# Governance



- Merit based, open governance model
- Built using the best concepts taken from Apache and Eclipse Foundations
- Governance split between board and projects
  - oVirt Board
  - Multiple projects under the oVirt brand

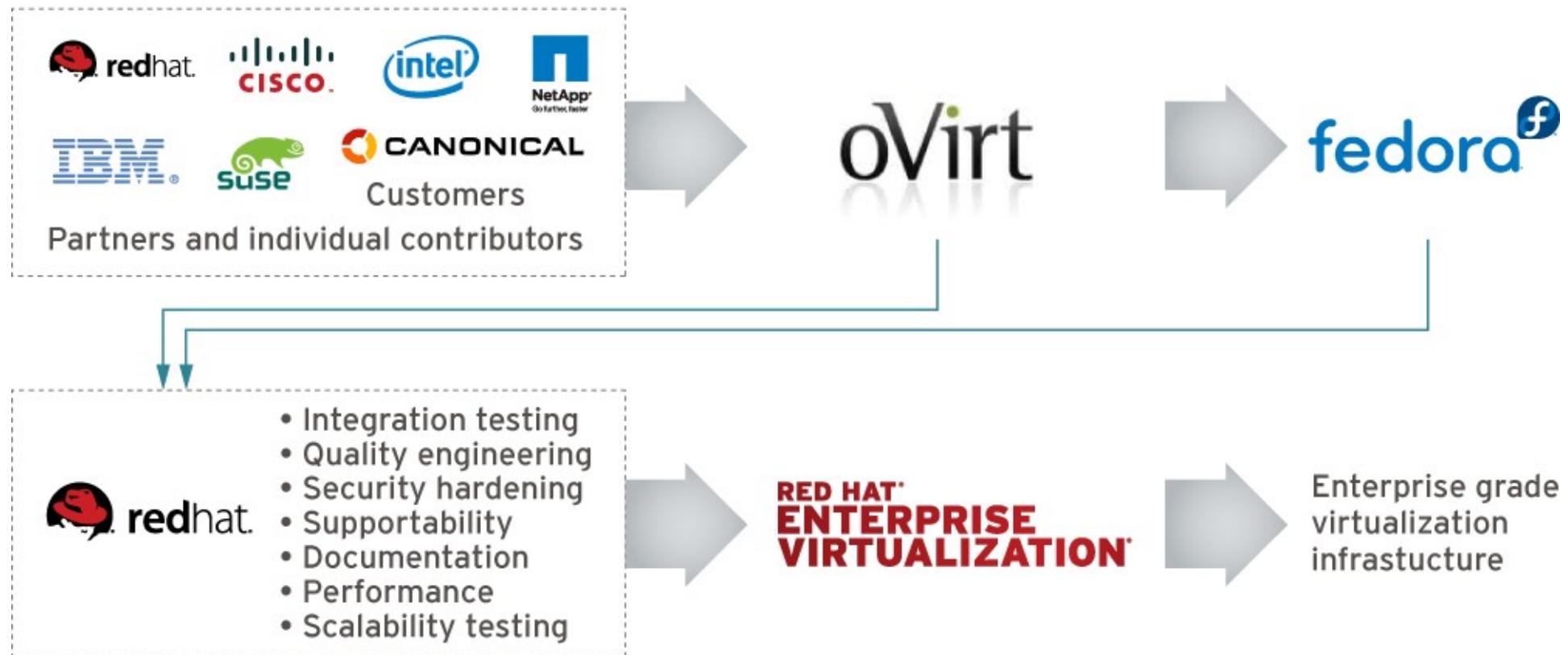
# Governance (oVirt Board)



- Initial board
  - Canonical, Cisco, IBM, Intel, NetApp & SUSE
  - A few domain leaders from sub-projects
  - Mentors
  - There is no limit to the number of board seats
  - Additional seats are voted based on merit

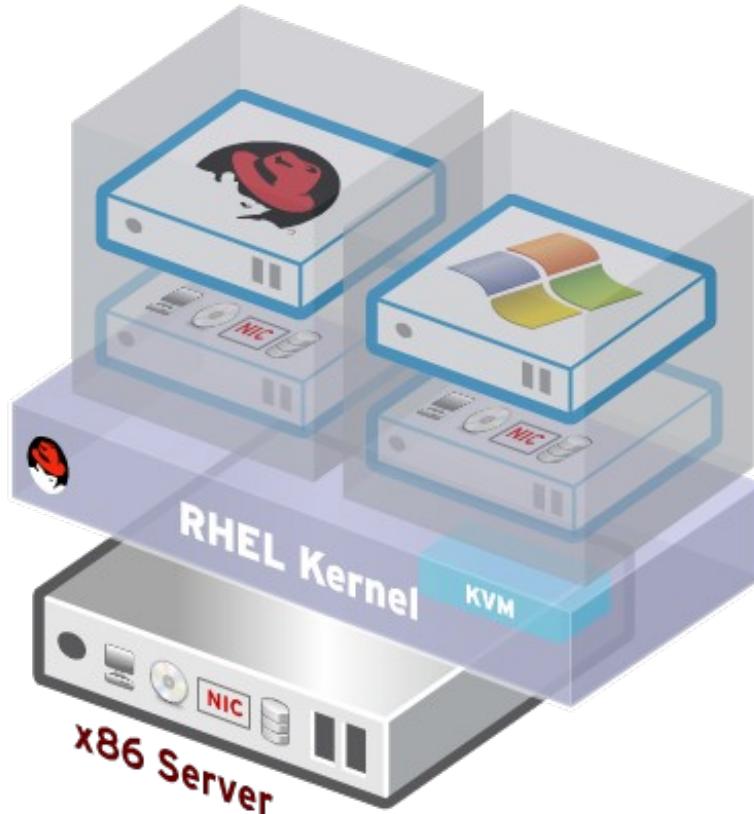
# OPEN VIRTUALIZATION MANAGEMENT

oVirt

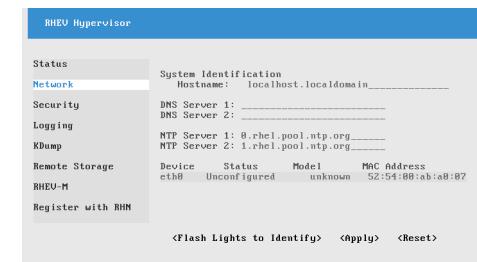


# oVirt Node

oVirt



- Standalone hypervisor
  - Small footprint ~ 170MB
  - Customized 'spin' of Fedora + KVM
  - 'Just enough' Fedora to run virtual machines
  - Runs on all RHEL hardware with Intel VT/AMD-V CPUs
- Easy to install, configure and upgrade
  - PXE boot, USB boot, CD or Hard drive



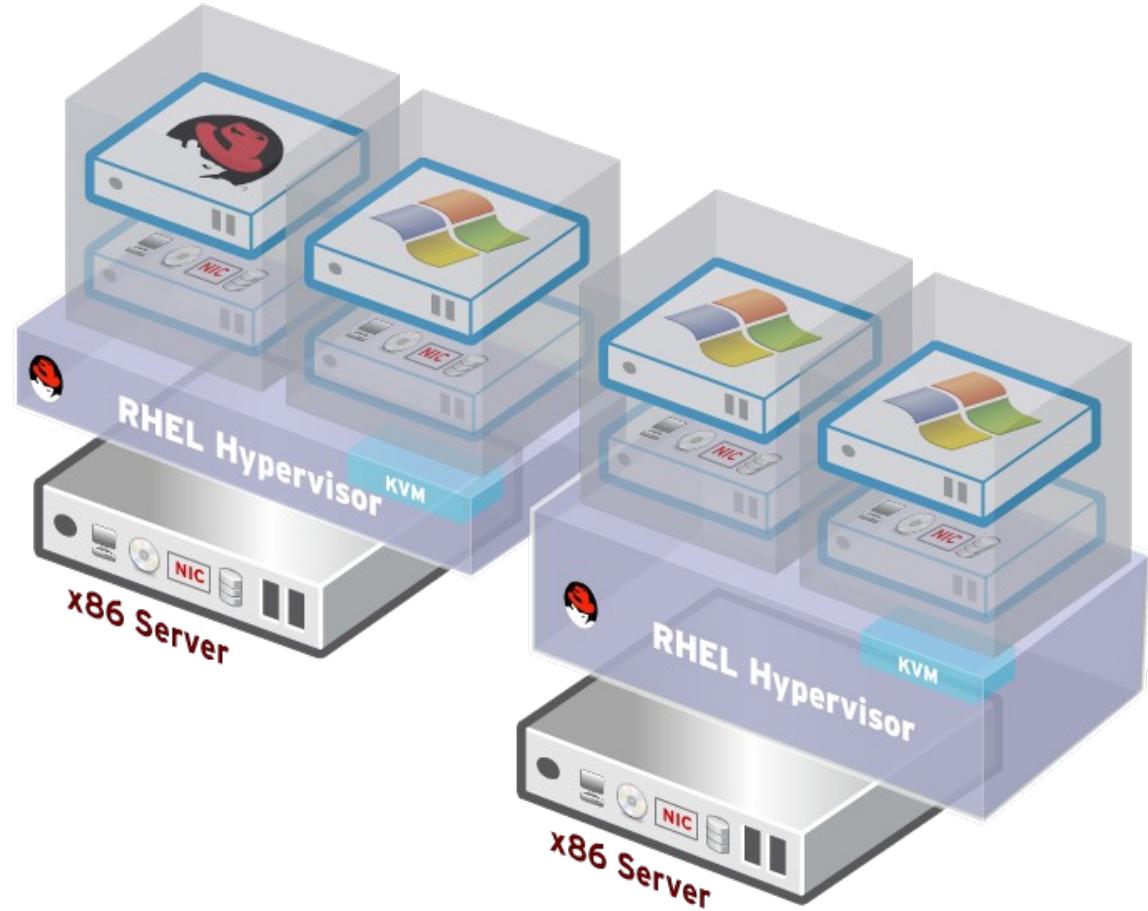
## oVirt Node vs. Full Host

### oVirt Node

- Small footprint
- Pre-configured, no Linux skills needed.

### Full Host

- Flexible
- Add monitoring agents, scripts etc. Leverage existing Fedora infrastructure.
- Hybrid mode capable



# Management Features

Feature	Description
High Availability	Restart guest VMs from failed hosts automatically on other hosts
Live Migration	Move running VM between hosts with zero downtime
System Scheduler	Continuously load balance VMs based on resource usage/policies
Power Saver	Concentrate virtual machines on fewer servers during off-peak hours
Maintenance Manager	No downtime for virtual machines during planned maintenance windows. Hypervisor patching
Image Management	Template based provisioning, thin provisioning and snapshots
Monitoring & Reporting	For all objects in system – VM guests, hosts, networking, storage etc.
OVF Import/Export	Import and export VMs and templates using OVF files
V2V & P2V	Convert Physical servers or VMs from Vmware and Xen
VDI	Virtual Desktop Infrastructure for Windows and Linux
Power User Portal	Self Service Portal

# Administration Console

oVirt

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Search: Vms: Events

Data Centers Clusters Hosts Storage Virtual Machines Pools Templates Users

New Server New Desktop Edit Remove Run Once Migrate Make Template Export Move Change CD Assign Tags Events

Tree

Expand All Collapse All Events

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 Events

Bookmarks

Tags

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	

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# Search Auto Complete

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Search: Vms: name = my\* and status =

Vms: name = my\* and status = unassigned  
Vms: name = my\* and status = down  
Vms: name = my\* and status = up  
Vms: name = my\* and status = poweringup  
Vms: name = my\* and status = powereddown  
Vms: name = my\* and status = paused  
Vms: name = my\* and status = migratingfrom  
Vms: name = my\* and status = migratingto  
Vms: name = my\* and status = unknown  
Vms: name = my\* and status = notresponding  
Vms: name = my\* and status = waitforlaunch  
Vms: name = my\* and status = reboatinprogress

Tree

- Expand All
- Collapse
- System
  - Default
  - iSCSI-RC
    - Storage
    - Templ
  - Clusters
    - intel-cluster
      - Hosts
        - nott-vds2.qa.lab.tlv.r
        - nott-vds3.qa.lab.tlv.r
  - VMs
- NFS-RC-DC
  - Storage
  - Templates
  - Clusters

Events

Work	Display	Status	Uptime	Logged-in User
0%		Down		
0%	Spice	Up	1 day	
0%	Spice	Up	1 day	
0%	Spice	Up	1 day	
0%	Spice	Up	1 day	
0%	Spice	Up	1 day	
0%	Spice	Up	1 day	
0%	Spice	Up	1 day	
0%	Spice	Up	1 day	
0%	Spice	Up	1 day	
0%	Spice	Up	1 day	
0%	Spice	Up	1 day	

General Network Interfaces Virtual Disks Snapshots Applications Permissions Events

Installed Applications

Bookmarks Tags

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# Search Results

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

Search: Vms: name = my\* and status = up

Data Centers Clusters Hosts Storage **Virtual Machines** Pools Templates Users Events

New Server New Desktop Edit Remove Run Once Migrate Make Template Export Move Change CD Assign Tags <> Prev Next >>

Name	Cluster	Host	IP Address	Memory	CPU	Network	Display	Status	Uptime	Logged-in User
myVm1	intel-cluster	nott-vds2.qa.lab.tlv.red		0%	0%	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%	6%	0%	Spice	Up	1 day	
myVm12	intel-cluster	nott-vds2.qa.lab.tlv.red		0%	6%	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	

Tree

Expand All Collapse All

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

Bookmarks

Tags

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# Add Host As Simple As

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Search: Host: Events

Data Centers Clusters Hosts Storage Virtual Machines Pools Templates Users

**New Host**

**General**

Name: nott-vds2.qa.lab.tlv.redhat.com

Data Center: Default

Host Cluster: Default

Name: (empty)

Address: (empty)

Root Password: (empty)

Override IP tables:

OK Cancel

Tree

Expand All Collapse All

System

- Default
- iSCSI-RC-DC
  - Storage
  - Templates
- Clusters
  - intel-cluster
    - Hosts
      - nott-vds2.qa.lab.tlv.redhat.com
      - nott-vds3.qa.lab.tlv.redhat.com
- VMs

NFS-RC-DC

- Storage
- Templates

- Clusters

Events

	Memory	CPU	Network	SpmStatus
8 VMs	25%	0%	0%	SPM
0 VMs	0%	0%	0%	None
0 VMs	0%	0%	0%	None

Bookmarks Tags

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# Power Management

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Search: Host: Events

Data Centers Clusters Hosts Storage Virtual Machines Pools Templates Users

**Tree**

New Edit Remove Activate Maintenance Configure Local Storage Assign Tags

Name

Hosts

Address

User Name

Password

Type

Port

Slot

Options

Please use a comma-separated list of 'key=value' or 'key'

Secure

Test

OK Cancel

Memory CPU Network SpmStatus

8 VMs 25% 0% 0% SPM

0 VMs 0% 0% 0% None

0 VMs 0% 0% 0% None

Events

System

Default

iSCSI-RC-DC

Storage

Templates

Clusters

intel-cluster

Hosts

nott-vds2.qa.lab.tlv.redhat.com

nott-vds3.qa.lab.tlv.redhat.com

nott-vdsa.qa.lab.tlv.redhat.com

VMs

NFS-RC-DC

Storage

Templates

Clusters

Bookmarks

Tags

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# Configure Storage Once for Entire Cluster

oVirt

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oVirt Enterprise Virtualization E... +

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

Google

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Search: Storage

Data Centers Clusters

New Domain Import Domain Edit

Tree

Expand All Collapse All

System

- Default
- iSCSI-RC-DC
  - Storage
  - Templates
- Clusters
  - hateya-ovirt-rc-1
    - export\_test
    - hateya-ovirt-rc-2
    - nfs-ovirt-rc-2
      - nfs-ovirt-rc-4
    - OvirtShareIso
- Hosts
  - nott-vds2.qa.lab.tlv.redhat.com
  - nott-vds3.qa.lab.tlv.redhat.com
- VMs
- NFS-RC-DC
  - Storage
  - Templates
- Clusters

General Data Center Vir

Targets > LUNs

LUNs > Targets

Edit Domain

Name: hateya-ovirt-rc-1

Domain Function / Storage Type: Data / iSCSI

Use Host: nott-vds2.qa.lab.tlv.redhat.com

LUN ID	Dev. Size	#path	Vendor ID	Product ID	Serial
1hateya-ovirt-rc11	75GB	0	IET	VIRTUAL-C SIET_VIRTUAL-DISK	
1hateya-ovirt-rc31	75GB	1	IET	VIRTUAL-C SIET_VIRTUAL-DISK	
1hateya-ovirt-rc41	75GB	1	IET	VIRTUAL-C SIET_VIRTUAL-DISK	

OK Cancel

Cross Data-Center Status Free Space

Status	Free Space
Active	326 GB
Active	18 GB
Active	20 GB
Inactive	357 GB
Unattached	< 1 GB
Active	29 GB

Events

Events

# Extend with More LUNs as Needed

Activities Firefox Fri 22:18 oVirt Enterprise Virtualization Engine Web Administration - Mozilla Firefox

File Edit View History Bookmarks Tools Help

oVirt Enterprise Virtualization E... +

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

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Search: Storage

Data Centers Clusters

New Domain Import Domain Edit

Tree

Expand All Collapse All

System

Default

iSCSI-RC-DC

Storage Templates

Clusters

intel-cluster

Hosts

nott-vds2.qa.lab.tlv.redhat.com

nott-vds3.qa.lab.tlv.redhat.com

VMS

NFS-RC-DC

Storage Templates

Clusters

Targets > LUNS

Discover Targets

Address: Port: 3260

User Authentication:

CHAP username: CHAP password:

Discover

Target Name Address Port

hateya-ovirt-rc1 10.35.64.81 3260

LUN ID Dev. Size #path Vendor ID Product ID Serial

1hateya-ovirt-rc 75GB 0 IET VIRTUAL-DISK SIET\_VIRTL

hateya-ovirt-rc3 10.35.64.81 3260

hateya-ovirt-rc4 10.35.64.81 3260

OK Cancel

Cross Data-Center Status Free Space

Active 326 GB

Active 18 GB

Active 20 GB

Inactive 357 GB

Unattached < 1 GB

Active 29 GB

Events

Events

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The screenshot shows the oVirt Web Administration interface. A modal dialog titled 'Edit Domain' is open for the domain 'hateya-ovirt-rc-1'. In the 'Domain Function / Storage Type' section, 'Data / iSCSI' is selected. The 'Use Host' dropdown is set to 'nott-vds2.qa.lab.tlv.redhat.com'. The 'Discover Targets' section is expanded, showing fields for 'Address' (empty), 'Port' (3260), and checkboxes for 'User Authentication' (unchecked) and 'CHAP username' (empty). Below this is a 'Discover' button. To the right is a table of targets:

Target Name	Address	Port
hateya-ovirt-rc1	10.35.64.81	3260
1hateya-ovirt-rc	75GB	0
IET	VIRTUAL-DISK	SIET_VIRTL
hateya-ovirt-rc3	10.35.64.81	3260
hateya-ovirt-rc4	10.35.64.81	3260

At the bottom of the dialog are 'OK' and 'Cancel' buttons. The background of the main interface shows a tree view of storage resources under 'System' and 'Clusters', with details for 'nott-vds2.qa.lab.tlv.redhat.com' like size (74 GB), available space (18 GB), and used space (56 GB). A summary at the bottom indicates an over allocation ratio of 2100%.

# Add Servers or Desktops

oVirt

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Data Centers Clusters Hosts Storage Virtual Machines Pools Templates Users

New Server New Desktop Edit Remove Run Once Migrate Make Template Export Move Change CD Assign Tags

Tree

Expand All Collapse All

System

- Default
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  - intel-cluster
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      - nott-vds2.qa.lab.tlv.redhat.com
      - nott-vds3.qa.lab.tlv.redhat.com
- VMs
- NFS-RC-DC
  - Storage
  - Templates
- Clusters

New Server Virtual Machine

General

Data Center: iSCSI-RC-DC

Host Cluster: intel-cluster

Name: (empty)

Description: (empty)

Based on Template: Blank

Memory Size: 512 MB

Total Cores: 2

CPU Sockets: 1

Operating System: Windows 2008 R2

OK Cancel

work	Display	Status	Uptime	Logged-in User
0%	Spice	Up	1 day	
0%	Spice	Up	1 day	
0%	Spice	Up	1 day	
0%	Spice	Up	1 day	
0%	Spice	Up	1 day	
0%	Spice	Up	1 day	
0%	Spice	Up	1 day	
0%	Spice	Up	1 day	
0%	Spice	Up	1 day	
0%	Spice	Up	1 day	
0%	Spice	Up	1 day	
0%	Spice	Up	1 day	
0%	Spice	Up	1 day	
0%	Spice	Up	1 day	
0%	Spice	Up	1 day	
0%	Spice	Up	1 day	
0%	Spice	Up	1 day	
0%	Spice	Paused	5 days	
0%	Spice	Paused	5 days	
0%	Spice	Paused	5 days	
0%	Spice	Paused	5 days	
0%	Spice	Paused	5 days	

Bookmarks Tags

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# Even Windows via Sysprep

oVirt

Activities Firefox Fri 22:20 Itamar Heim

File Edit View History Bookmarks Tools Help

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oVirt Enterprise Virtualization E... + hateya-fed16.qa.lab.tlv.redhat.com:8080/webadmin/webadmin/WebAdmin.html#vms Google

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

Search: Vms: Events

Data Centers Clusters Hosts Storage **Virtual Machines** Pools Templates Users

New Server New Desktop Edit Remove Run Once Migrate Make Template Export Move Change CD Assign Tags

Tree

Expand All Collapse All System

- Default
- iSCSI-RC-DC
  - Storage
  - Templates
- Clusters
  - intel-cluster
    - Hosts
      - nott-vds2.qa.lab.tlv.redhat.com
      - nott-vds3.qa.lab.tlv.redhat.com
- VMs
- NFS-RC-DC
  - Storage
  - Templates
- Clusters

New Server Virtual Machine

General Domain  
Windows Sysprep

Console Time Zone  
(GMT) GMT Standard Time

Host

High Availability

Resource Allocation

Boot Options

Custom Properties

OK Cancel

Name	Work	Display	Status	Uptime	Logged-in User
kaka	0%	Spice	Up	1 day	
myVm1	0%	Spice	Up	1 day	
myVm10	0%	Spice	Up	1 day	
myVm11	0%	Spice	Up	1 day	
myVm12	0%	Spice	Up	1 day	
myVm13	0%	Spice	Up	1 day	
myVm15	0%	Spice	Up	1 day	
myVm16	0%	Spice	Up	1 day	
myVm17	0%	Spice	Up	1 day	
myVm18	0%	Spice	Up	1 day	
myVm19	0%	Spice	Up	1 day	
myVm2	0%	Spice	Up	1 day	
myVm20	0%	Spice	Up	1 day	
myVm21	0%	Spice	Up	1 day	
myVm22	0%	Spice	Up	1 day	
myVm23	0%	Spice	Up	1 day	
myVm24	0%	Spice	Paused	5 days	
myVm25	0%	Spice	Paused	5 days	
myVm26	0%	Spice	Paused	5 days	
myVm27	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.

# SPICE or VNC

oVirt

Activities Firefox Fri 22:20 Itamar Heim

File Edit View History Bookmarks Tools Help

oVirt Enterprise Virtualization Engine Web Administration - Mozilla Firefox

oVirt Enterprise Virtualization E... +

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

Google

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

Search: Vms: Events

Data Centers Clusters Hosts Storage **Virtual Machines** Pools Templates Users

New Server New Desktop Edit Remove Run Once Migrate Make Template Export Move Change CD Assign Tags

Tree

Expand All Collapse All

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

New Server Virtual Machine

Protocol: Spice

USB Policy: Enabled

Console (highlighted)

Host

High Availability

Resource Allocation

Boot Options

Custom Properties

OK Cancel

Name	Work	Display	Status	Uptime	Logged-in User
kaka	0%		Down		
myVm1	0%	Spice	Up	1 day	
myVm10	0%	Spice	Up	1 day	
myVm11	0%	Spice	Up	1 day	
myVm12	0%	Spice	Up	1 day	
myVm13	0%	Spice	Up	1 day	
myVm15	0%	Spice	Up	1 day	
myVm16	0%	Spice	Up	1 day	
myVm17	0%	Spice	Up	1 day	
myVm18	0%		Down		
myVm19	0%		Down		
myVm2	0%		Down		
myVm20	0%		Down		
myVm21	0%		Down		
myVm22	0%		Down		
myVm23	0%		Down		
myVm24	0%	Spice	Paused	5 days	
myVm25	0%	Spice	Paused	5 days	
myVm26	0%	Spice	Paused	5 days	
myVm27	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.

Activities Firefox Fri 22:20 Itamar Heim

File Edit View History Bookmarks Tools Help

oVirt Enterprise Virtualization Engine Web Administration - Mozilla Firefox

oVirt Enterprise Virtualization E... + hateya-fed16.qa.lab.tlv.redhat.com:8080/webadmin/webadmin.html#vms Google

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

Search: Vms: Events

Data Centers Clusters Hosts Storage Virtual Machines Pools Templates Users

New Server New Desktop Edit Remove Run Once Migrate Make Template Export Move Change CD Assign Tags

Events << Prev Next >>

**Tree**

Expand All Collapse All

System

- Default
- iSCSI-RC-DC
  - Storage
  - Templates
- Clusters
  - intel-cluster
    - Hosts
      - nott-vds2.qa.lab.tlv.redhat.com
      - nott-vds3.qa.lab.tlv.redhat.com
- VMs
- NFS-RC-DC
  - Storage
  - Templates
- Clusters

**New Server Virtual Machine**

**General**

**Run On:**

Any Host in Cluster  Specific nott-vds2.qa.lab.tlv.redhat.com

**Run/Migration Options:**

Run VM on the selected host (no migration allowed)

Allow VM migration only upon Administrator specific request  
(system will not trigger automatic migration of this VM)

**Host**

OK Cancel

work	Display	Status	Uptime	Logged-in User
0%		Down		
0%	Spice	Up	1 day	
0%	Spice	Up	1 day	
0%	Spice	Up	1 day	
0%	Spice	Up	1 day	
0%	Spice	Up	1 day	
0%	Spice	Up	1 day	
0%	Spice	Up	1 day	
0%	Spice	Up	1 day	
0%	Spice	Up	1 day	
0%	Spice	Up	1 day	
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0%	Spice	Up	1 day	
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0%	Spice	Up	1 day	
0%	Spice	Up	1 day	
0%	Spice	Up	1 day	
0%	Spice	Up	1 day	
0%	Spice	Up	1 day	
0%	Spice	Paused	5 days	
0%	Spice	Paused	5 days	
0%	Spice	Paused	5 days	
0%	Spice	Paused	5 days	
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.

# Highly Available?

oVirt

Activities Firefox Fri 22:20 Itamar Heim

File Edit View History Bookmarks Tools Help

oVirt Enterprise Virtualization Engine Web Administration - Mozilla Firefox

oVirt Enterprise Virtualization E... + hateya-fed16.qa.lab.tlv.redhat.com:8080/webadmin/webadmin/WebAdmin.html#vms Google

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

Search: Vms: Events

Data Centers Clusters Hosts Storage Virtual Machines Pools Templates Users

New Server New Desktop Edit Remove Run Once Migrate Make Template Export Move Change CD Assign Tags

Tree

Expand All Collapse All System

- Default
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  - Storage
  - Templates
- Clusters
  - intel-cluster
    - Hosts
      - nott-vds2.qa.lab.tlv.redhat.com
      - nott-vds3.qa.lab.tlv.redhat.com
- NFS-RC-DC
  - Storage
  - Templates
- Clusters

VMS

New Server Virtual Machine

Name: kaka

General

Highly Available

Priority for Run/Migration queue:

Low

Medium

High

Resource Allocation

Boot Options

Custom Properties

OK Cancel

work	Display	Status	Uptime	Logged-in User
0%		Down		
0%	Spice	Up	1 day	
0%	Spice	Up	1 day	
0%	Spice	Up	1 day	
0%	Spice	Up	1 day	
0%	Spice	Up	1 day	
0%	Spice	Up	1 day	
0%	Spice	Up	1 day	
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0%	Spice	Up	1 day	
0%	Spice	Up	1 day	
0%	Spice	Up	1 day	
0%	Spice	Up	1 day	
0%	Spice	Paused	5 days	
0%	Spice	Paused	5 days	
0%	Spice	Paused	5 days	
0%	Spice	Paused	5 days	
0%	Spice	Paused	5 days	

Bookmarks Tags

Last Message: 2012-Jan-31, 23:18:41 User admin@internal logged in. 3 Alerts Events

# Control Allocated Resources (Disk, Memory)

Activities Firefox Fri 22:20 oVirt Enterprise Virtualization Engine Web Administration - Mozilla Firefox Itamar Heim

File Edit View History Bookmarks Tools Help

oVirt Enterprise Virtualization E... + hateya-fed16.qa.lab.tlv.redhat.com:8080/webadmin/webadmin/WebAdmin.html#vms Google

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

Search: Vms: Events

Data Centers Clusters Hosts Storage Virtual Machines Pools Templates Users

New Server New Desktop Edit Remove Run Once Migrate Make Template Export Move Change CD Assign Tags

**Tree**

Expand All Collapse All System Default iSCSI-RC-DC Storage Templates Clusters intel-cluster Hosts nott-vds2.qa.lab.tlv.redhat.com nott-vds3.qa.lab.tlv.redhat.com VMs NFS-RC-DC Storage Templates Clusters

**New Server Virtual Machine**

**General**

**Storage Allocation:** (Available only when a template is selected)

Storage Domain: Intel Cluster

Provisioning: Clone

**Memory Allocation:**

Physical Memory Guaranteed: 256 MB

**Resource Allocation**

Boot Options Custom Properties

OK Cancel

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

Bookmarks Tags

Last Message: 2012-Jan-31, 23:18:41 User admin@internal logged in. 3 Alerts Events

# Boot Devices

oVirt

Activities Firefox Fri 22:20 Itamar Heim

File Edit View History Bookmarks Tools Help

oVirt Enterprise Virtualization Engine Web Administration - Mozilla Firefox

oVirt Enterprise Virtualization E... + hateya-fed16.qa.lab.tlv.redhat.com:8080/webadmin/webadmin/WebAdmin.html#vms Google

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

Search: Vms: Events

Data Centers Clusters Hosts Storage Virtual Machines Pools Templates Users

New Server New Desktop Edit Remove Run Once Migrate Make Template Export Move Change CD Assign Tags Events << Prev Next >>

**Tree**

Expand All Collapse All

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

Vms:

Name	Work	Display	Status	Uptime	Logged-in User
kaka	0%	Spice	Up	1 day	
myVm1	0%	Spice	Up	1 day	
myVm10	0%	Spice	Up	1 day	
myVm11	0%	Spice	Up	1 day	
myVm12	0%	Spice	Up	1 day	
myVm13	0%	Spice	Up	1 day	
myVm15	0%	Spice	Up	1 day	
myVm16	0%	Spice	Up	1 day	
myVm17	0%	Spice	Up	1 day	
myVm18	0%	Spice	Up	1 day	
myVm19	0%	Spice	Up	1 day	
myVm2	0%	Spice	Down		
myVm20	0%	Spice	Down		
myVm21	0%	Spice	Down		
myVm22	0%	Spice	Down		
myVm23	0%	Spice	Down		
myVm24	0%	Spice	Paused	5 days	
myVm25	0%	Spice	Paused	5 days	
myVm26	0%	Spice	Paused	5 days	
myVm27	0%	Spice	Paused	5 days	

**New Server Virtual Machine**

General Windows Sysprep Console Host High Availability Resource Allocation **Boot Options** Custom Properties

First Device Hard Disk  
Second Device [None]  
 Attach CD

OK Cancel

# Advanced Options via Custom Properties

# oVirt

The screenshot shows a Firefox browser window with the oVirt Enterprise Virtualization Engine Web Administration interface. The title bar reads "oVirt Enterprise Virtualization Engine Web Administration – Mozilla Firefox". The top menu bar includes File, Edit, View, History, Bookmarks, Tools, and Help. A toolbar above the main content area has icons for back, forward, search, and other navigation functions. The main content area features a navigation bar with tabs: Data Centers, Clusters, Hosts, Storage, Virtual Machines (which is currently selected), Pools, Templates, and Users. Below the navigation bar is a search field with the placeholder "Search: Vms:" and a search icon. To the right of the search field are a star icon and a magnifying glass icon. On the left side, there is a tree view labeled "Tree" with sections for System, iSCSI-RC-DC, NFS-RC-DC, and Clusters. Under Clusters, there is an "intel-cluster" entry. The main workspace displays a list of virtual machines on the left and a detailed view of a selected VM on the right. A modal dialog box titled "New Server Virtual Machine" is open in the center. The dialog has tabs for General, Windows Sysprep, Console, Host, High Availability, Resource Allocation, Boot Options, and Custom Properties. The "Custom Properties" tab is currently selected. At the bottom of the dialog are "OK" and "Cancel" buttons. The background table lists various virtual machines with columns for Name, Work, Display, Status, Uptime, and Logged-in User. The status column shows values like 0%, Spice, Up, 1 day, and Down.

# Assign Permissions to Objects by Roles

The oVirt logo consists of the word "oVirt" in a bold, black, sans-serif font. The letter "o" is lowercase and has a blue gradient fill. The letter "V" has a green dot at its top right corner.

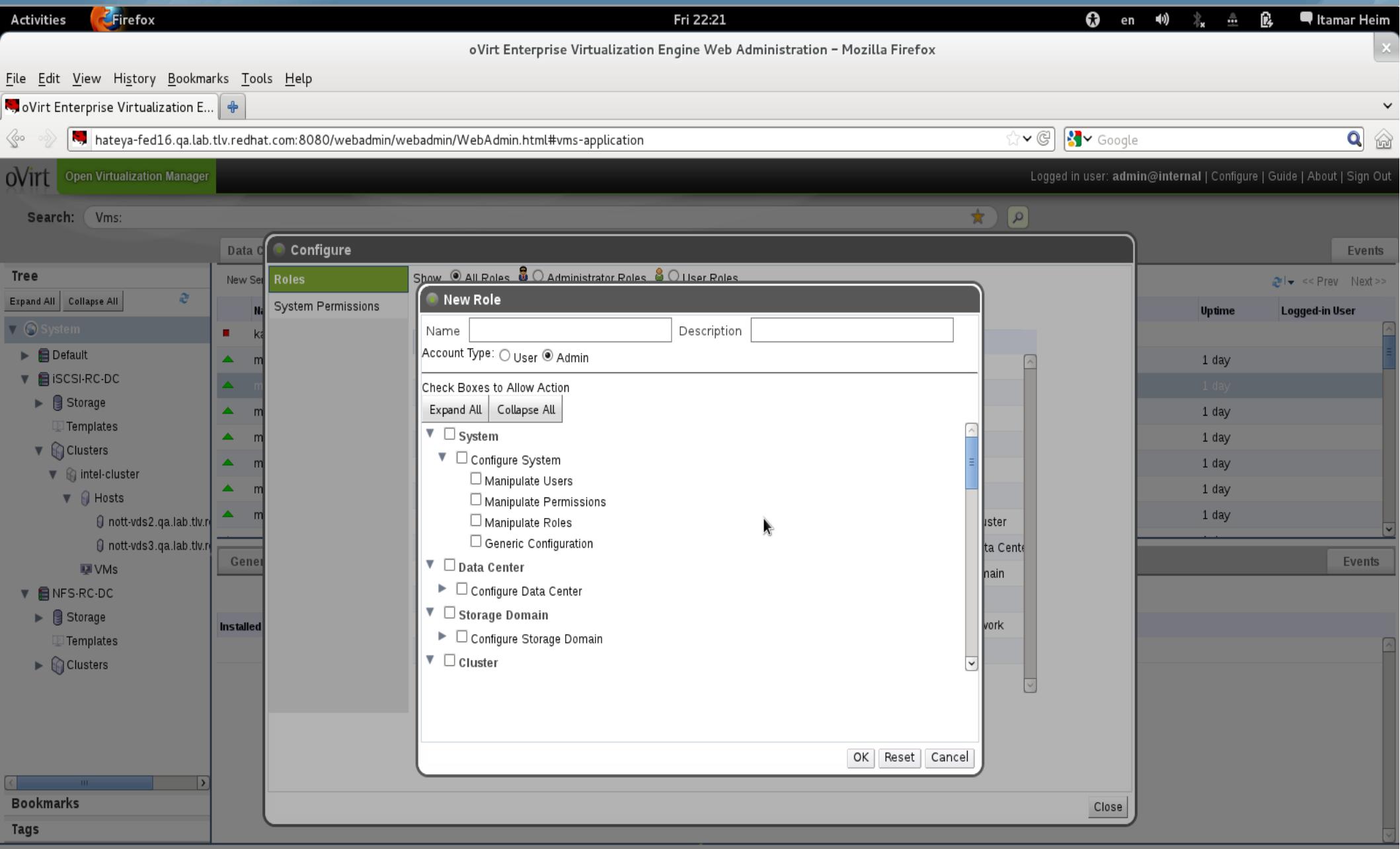
The screenshot shows the oVirt Enterprise Virtualization Engine Web Administration interface. The main window displays a list of system roles with their descriptions. The 'Roles' tab is selected in the dialog. The list includes:

Name	Description
UserRole	Standard User Role
PowerUserRole	User Role, allowed to create/manage Vms and Templates
UserVmManager	User Role, with permission for any operation on Vms
TemplateAdmin	Administrator Role, permission for all operations on a specific Template
UserTemplateBasedVm	User Role, with permissions only to use Templates
SuperUser	System Administrators with permission for all operations
ClusterAdmin	Administrator Role, permission for all the objects underneath a specific Cluster
DataCenterAdmin	Administrator Role, permission for all the objects underneath a specific Data Center
StorageAdmin	Administrator Role, permission for all operations on a specific Storage Domain
HostAdmin	Administrator Role, permission for all operations on a specific Host
NetworkAdmin	Administrator Role, permission for all operations on a specific Logical Network
VmPoolAdmin	Administrator Role, permission for all operations on a specific VM Pool

The background shows the oVirt interface with a sidebar containing a tree view of system components like System, iSCSI-RC-DC, NFS-RC-DC, and Clusters. The top status bar shows the date and time as Fri 22:21 and the user as Itamar Heim.

# Define Your Own Roles

# oVirt



# Gluster Management

oVirt

**New Cluster**

**General**

Data Center: Production

**Add Bricks**

Volume Type: Distribute

**Bricks**

Server: 10.16.159.159   Add

Brick Directory:

**Create Volume**

Server: 10.16.159.159   Volume Cluster: data

10.16.159.159   10.16.159.161

Name:   Type: Distribute

Transport Types:  TCP  RDMA

Bricks: Add Bricks (0 bricks selected)

**Access Protocols**

Remove Remove All Gluster

NFS

Allow Access From: \* [Comma separated list of IP addresses/hostnames]

OK Cancel

# User Portal

oVirt

The screenshot shows a Firefox browser window displaying the oVirt User Portal. The title bar reads "Sat 11:27 oVirt User Portal - Mozilla Firefox". The main content area shows four virtual machines: "kaka" (Machine is Down), "myVm1" (Machine is Ready), "repro" (Machine is Down), and "up-vm2" (Machine is Down). A detailed configuration window is open for "kaka", showing the following settings:

Setting	Value
Operating System :	Unassigned
Defined Memory :	1GB
Number of Cores :	1 (1 Socket(s), 1 Core(s) per Socket)
Drives :	Disk 1: 10GB
Console :	Spice (Edit)

# Self Provisioning Portal

oVirt

Activities Firefox Sat 11:27 Itamar Heim

File Edit View History Bookmarks Tools Help

oVirt User Portal Mozilla Firefox

oVirt User Portal redhat.com https://hateya-fed16.qa.lab.tlv.redhat.com:8443/UserPortal/org.ovirt.engine.ui.userportal.UserPortal/UserPortal.html Google

oVirt User Portal Basic Extended

New Server | New Desktop | Edit | Remove | Run Once | Change CD | Make Template

**Virtual Machines**

Icon	Name	Actions
	kaka	
	myVm1	
	repro	
	up-vm2	

**Templates**

**Resources**

General Network Interfaces Virtual Disks Snapshots Permissions Events Applications Monitor

Name: kaka	Defined Memory: 1024 MB	Origin: RHEV
Description: fed16	Physical Memory Guaranteed: 512 MB	Run On: Any Host in Cluster
Template: fed16	Number of CPU Cores: 1 (1 Socket(s), 1 Core(s) per Socket)	Custom Properties: Not-Configured
Operating System: Unassigned	Highly Available: false	
Default Display Type: Spice	USB Policy: Enabled	
Priority: Low	Resides on Storage Domain: hateya-ovirt-rc-1	

# User Resource View

oVirt

Activities Firefox Sat 11:27 oVirt User Portal - Mozilla Firefox Itamar Heim

File Edit View History Bookmarks Tools Help

oVirt User Portal redhat.com https://hateya-fed16.qa.lab.tlv.redhat.com:8443/UserPortal/org.ovirt.engine.ui.userportal.UserPortal.html Google

oVirt User Portal Basic Extended

**Virtual Machines:**  
Defined VMs: 4  
Running VMs: 1

**Virtual CPUs:**  
Defined vCPUs: 4  
Used vCPUs: 1

**Memory:**  
Defined Memory: 3328MB  
Memory Usage: 256MB

**Storage:**  
Total Size: 70GB  
Number of Snapshots: 5  
Total Size of Snapshots: 15GB

Virtual Machine	Disk	Virtual Size	Actual Size	Snapshots
kaka	Disk1	10GB	1GB	1
myVm1	Disk1	40GB	3GB	1
repro	Disk1	10GB	10GB	1
up-vm2	Disk1	10GB	1GB	1

# oVirt Reports

oVirt

oVirt Reports



ovirt-admin | Log Out

View ▾ Manage ▾

Folders

- root
- Organizations
- oVirt Reports
- Reports
  - Executive
  - Inventory
  - Service Level
  - Trend
- Resources
- temp

Themes

default

oVirt-reports-theme

Repository

Run Edit Open Copy Cut Paste Delete

Sort By: Name | Modified Date

**Active Virtual Machines by OS (BR18)**  
[/organizations/ovirtreports/Reports/Executive/active\\_vms\\_by\\_os\\_br18](/organizations/ovirtreports/Reports/Executive/active_vms_by_os_br18)

The report contains comparative measurements number of running virtual machines and OS usage in for a selected cluster and a selected virtual machine's type within the requested period.

Report

October 18

**Cluster Capacity Vs Usage (BR19)**  
[/organizations/ovirtreports/Reports/Executive/cluster\\_capacity\\_vs\\_usage\\_br19](/organizations/ovirtreports/Reports/Executive/cluster_capacity_vs_usage_br19)

This report contains charts displaying host's resources usage measurements (CPU core; physical Memory) and charts displaying virtual machine's resources usage measurements (virtual machine's total vCPU; Virtual Memory size) for a selected cluster.

Report

October 18

**Host OS Break Down (BR22)**  
[/organizations/ovirtreports/Reports/Executive/host\\_os\\_break\\_down\\_BR22](/organizations/ovirtreports/Reports/Executive/host_os_break_down_BR22)

This report contains a table and a chart displaying the number of hosts for each OS version for a selected cluster within a requested period.

Report

October 18

**Summary of Host Usage Resources (BR17)**  
[/organizations/ovirtreports/Reports/Executive/summary\\_of\\_host\\_usage\\_resources\\_br17](/organizations/ovirtreports/Reports/Executive/summary_of_host_usage_resources_br17)

The report contains a scattered chart of CPU and memory usage data within a requested period and for a selected cluster.

Report

October 18

# oVirt Reports

oVirt



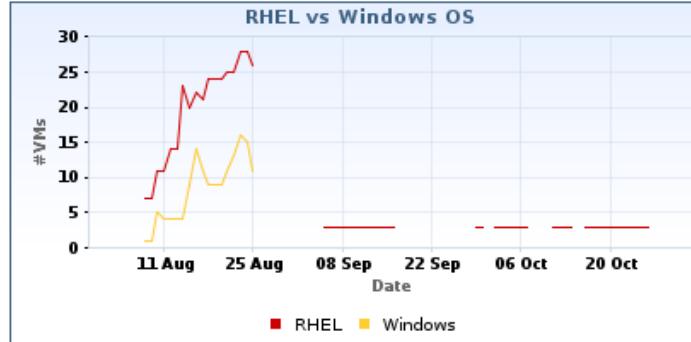
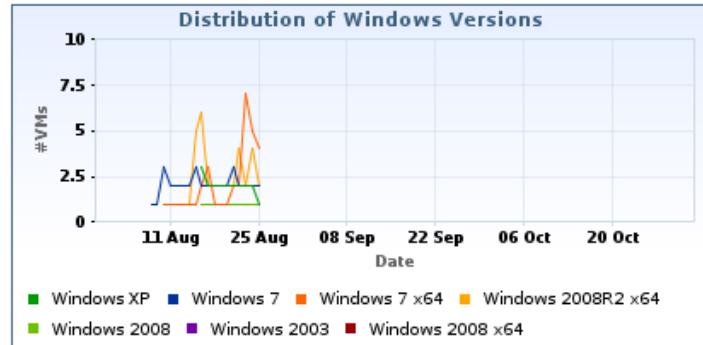
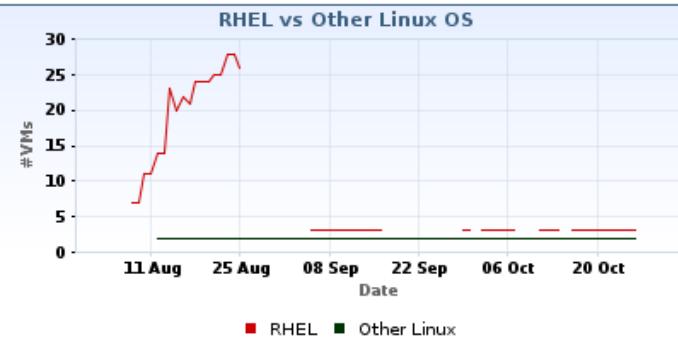
oVirt Reports

Oct 31, 2011

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

**Criteria:** Datacenter: Default  
Cluster: All

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



**Input Controls**

\* Show Deleted Entities?: Yes

\* Data Center: RHEVM-3

\* Cluster: RHEVM-3

\* VM Type: Server

\* Period Range: Monthly

\* Select Month: August 2011

\* Start Date: 2011-08-01

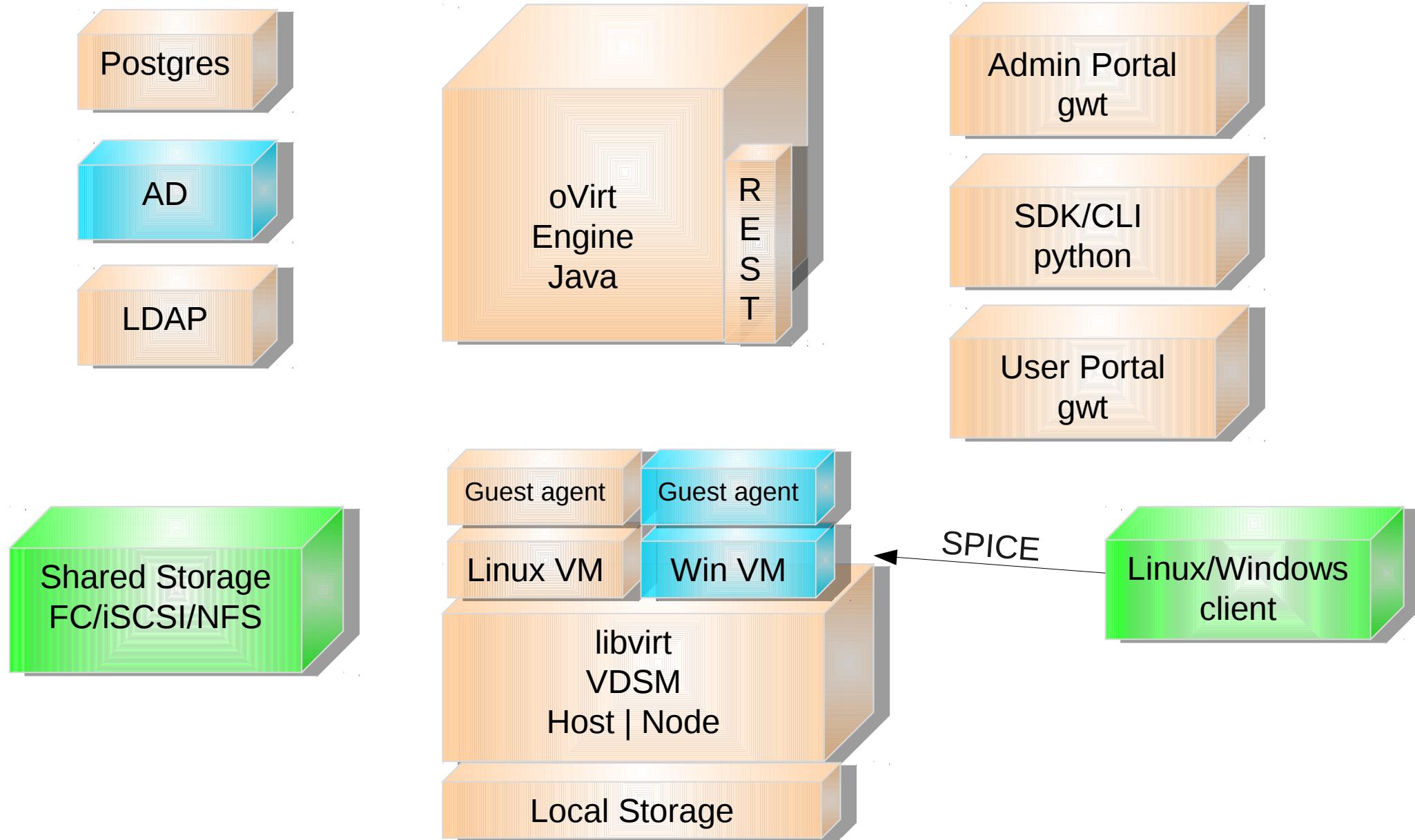
\* End Date: 2011-08-31

**Buttons:** Apply, OK, Reset, Cancel

- The guest agent provides additional information to oVirt Engine, such as guest memory usage, guest ip address, installed applications and sso.
- Python code, available for both linux and windows guests
- Communication is done over virtio-serial
- SSO for windows is based on a gina module for XP and a credential provider for windows 7
- SSO for Linux is based on a PAM module with support for both KDE and Gnome

# oVirt High Level Architecture

oVirt



# Authentication

- Builtin user `admin@internal`
- AD, IPA, RHDS, ITDS integration
  - Kerberos authentication
  - LDAP - user info, group membership
  - Multiple domains, trusts, etc.
  - Cached for searches, not for login
- Next
  - Open LDAP (patch ready)
  - Internal users (picketlink?)
  - Linux users?

# Database

- Postgres
- JDBC based
- Next
  - Hibernate
  - Scheme upgrade management

# RESTful Web Service

- Stands for Representational State Transfer
- Modeling entity actions around HTTP verbs
  - GET
  - PUT
  - POST
  - DELETE
- Still uses 'actions' for some state changes
- Self describes – entity navigation and actions

# REST API

oVirt

Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://10.35.1.171/rhevm-api

http://10.35.1.171/rhevm-api

```
-<api>
<link rel="capabilities" href="/rhevm-api/capabilities"/>
<link rel="clusters" href="/rhevm-api/clusters"/>
<link rel="clusters/search" href="/rhevm-api/clusters?search={query}"/>
<link rel="datacenters" href="/rhevm-api/datacenters"/>
<link rel="datacenters/search" href="/rhevm-api/datacenters?search={query}"/>
<link rel="events" href="/rhevm-api/events"/>
<link rel="events/search" href="/rhevm-api/events?search={query}"/>
<link rel="hosts" href="/rhevm-api/hosts"/>
<link rel="hosts/search" href="/rhevm-api/hosts?search={query}"/>
<link rel="networks" href="/rhevm-api/networks"/>
<link rel="roles" href="/rhevm-api/roles"/>
<link rel="storagedomains" href="/rhevm-api/storagedomains"/>
<link rel="storagedomains/search" href="/rhevm-api/storagedomains?search={query}"/>
<link rel="tags" href="/rhevm-api/tags"/>
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<link rel="templates/search" href="/rhevm-api/templates?search={query}"/>
<link rel="users" href="/rhevm-api/users"/>
<link rel="groups" href="/rhevm-api/groups"/>
<link rel="domains" href="/rhevm-api/domains"/>
<link rel="vmpools" href="/rhevm-api/vmpools"/>
<link rel="vmpools/search" href="/rhevm-api/vmpools?search={query}"/>
<link rel="vms" href="/rhevm-api/vms"/>
<link rel="vms/search" href="/rhevm-api/vms?search={query}"/>
<system_version revision="428" build="0" minor="6" major="4"/>
-<summary>
-<vms>
  <total>22</total>
  <active>5</active>
</vms>
-<hosts>
  <total>6</total>
  <active>5</active>
</hosts>
-<users>
  <total>2</total>
</users>
```

Done

# Hosts Collection



Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://10.35.1.171/rhevm-api/hosts

http://10.35.1.171/rhevm-api/hosts +

```
--<hosts>
- <host id="15896dce-edd0-415c-a524-c9b02f278895" href="/rhevm-api/hosts/15896dce-edd0-415c-a524-c9b02f278895">
  <name>nari11</name>
  -<actions>
    <link rel="install" href="/rhevm-api/hosts/15896dce-edd0-415c-a524-c9b02f278895/install"/>
    <link rel="activate" href="/rhevm-api/hosts/15896dce-edd0-415c-a524-c9b02f278895/activate"/>
    <link rel="fence" href="/rhevm-api/hosts/15896dce-edd0-415c-a524-c9b02f278895/fence"/>
    <link rel="deactivate" href="/rhevm-api/hosts/15896dce-edd0-415c-a524-c9b02f278895/deactivate"/>
    <link rel="approve" href="/rhevm-api/hosts/15896dce-edd0-415c-a524-c9b02f278895/approve"/>
    <link rel="iscsilogin" href="/rhevm-api/hosts/15896dce-edd0-415c-a524-c9b02f278895/iscsilogin"/>
    <link rel="iscsidiscover" href="/rhevm-api/hosts/15896dce-edd0-415c-a524-c9b02f278895/iscsidiscover"/>
    <link rel="commitnetconfig" href="/rhevm-api/hosts/15896dce-edd0-415c-a524-c9b02f278895/commitnetconfig"/>
  </actions>
  <link rel="storage" href="/rhevm-api/hosts/15896dce-edd0-415c-a524-c9b02f278895/storage"/>
  <link rel="nics" href="/rhevm-api/hosts/15896dce-edd0-415c-a524-c9b02f278895/nics"/> // This link is circled in red
  <link rel="tags" href="/rhevm-api/hosts/15896dce-edd0-415c-a524-c9b02f278895/tags"/>
  <link rel="permissions" href="/rhevm-api/hosts/15896dce-edd0-415c-a524-c9b02f278895/permissions"/>
  <link rel="statistics" href="/rhevm-api/hosts/15896dce-edd0-415c-a524-c9b02f278895/statistics"/>
  <address>nari11.eng.lab.tlv.redhat.com</address>
  <status>UP</status>
  <cluster id="4a5baf0e-7c6d-4d75-9aba-d60f3a188d0b" href="/rhevm-api/clusters/4a5baf0e-7c6d-4d75-9aba-d60f3a188d0b"/>
  <port>54321</port>
  <storage_manager>false</storage_manager>
  -<power_management>
    <enabled>false</enabled>
    <options/>
  </power_management>
  -<ksm>
    <enabled>false</enabled>
  </ksm>
  -<transparent_hugepages>
    <enabled>true</enabled>
  </transparent_hugepages>
  -<iscsi>
    <initiator>iqn.1994-05.com.redhat:a7afc41a35b0</initiator>
  </iscsi>
</host>
```

Done

# Host networks collection



Mozilla Firefox

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http://10.35.1.171/rhevm-api/hosts/15896dce-edd0-415c-a524-c9b02f278895/nics

http://10.35.1.1...b02f278895/nics +

This XML file does not appear to have any style information associated with it. The document tree is shown below.

```
<-<host_nics>
-<host_nic id="dbb39d06-3aef-468c-83e6-88eae0a3f346" href="/rhevm-api/hosts/15896dce-edd0-415c-a524-c9b02f278895/nics/dbb39d06-3aef-468c-83e6-88eae0a3f346">
  <name>eth0</name>
  --<actions>
    <link rel="attach" href="/rhevm-api/hosts/15896dce-edd0-415c-a524-c9b02f278895/nics/dbb39d06-3aef-468c-83e6-88eae0a3f346/attach"/>
    <link rel="detach" href="/rhevm-api/hosts/15896dce-edd0-415c-a524-c9b02f278895/nics/dbb39d06-3aef-468c-83e6-88eae0a3f346/detach"/>
  --<actions>
    <link rel="statistics" href="/rhevm-api/hosts/15896dce-edd0-415c-a524-c9b02f278895/nics/dbb39d06-3aef-468c-83e6-88eae0a3f346/statistics"/>
  <host id="15896dce-edd0-415c-a524-c9b02f278895" href="/rhevm-api/hosts/15896dce-edd0-415c-a524-c9b02f278895"/>
  --<network>
    <name>rhevm</name>
  --<network>
    <mac address="78:E7:D1:E4:8E:92"/>
    <ip netmask="255.255.252.0" address="10.35.16.151"/>
  --</host_nic>
-<host_nic id="0d98b08c-9b42-45a4-a226-b7dd3f0854cf" href="/rhevm-api/hosts/15896dce-edd0-415c-a524-c9b02f278895/nics/0d98b08c-9b42-45a4-a226-b7dd3f0854cf">
  <name>eth1</name>
  --<actions>
    <link rel="attach" href="/rhevm-api/hosts/15896dce-edd0-415c-a524-c9b02f278895/nics/0d98b08c-9b42-45a4-a226-b7dd3f0854cf/attach"/>
    <link rel="detach" href="/rhevm-api/hosts/15896dce-edd0-415c-a524-c9b02f278895/nics/0d98b08c-9b42-45a4-a226-b7dd3f0854cf/detach"/>
  --<actions>
    <link rel="statistics" href="/rhevm-api/hosts/15896dce-edd0-415c-a524-c9b02f278895/nics/0d98b08c-9b42-45a4-a226-b7dd3f0854cf/statistics"/>
  <host id="15896dce-edd0-415c-a524-c9b02f278895" href="/rhevm-api/hosts/15896dce-edd0-415c-a524-c9b02f278895"/>
  <mac address="78:E7:D1:E4:8E:93"/>
  <ip netmask="" address="" />
  --</host_nic>
-</host_nics>
```

Done

# Python SDK



- Creating the proxy
- Listing all collections

```
#create proxy
api = API(url='http://localhost:8080', username='user@domain', password='password')

api.
```



The screenshot shows an IntelliJ IDEA code editor with a code completion dropdown open over the line 'api.'. The dropdown contains two items: 'vms' (preceded by a blue circular icon) and '\_\_init\_\_(url, username, password, key\_file, cert\_file, port, s' (preceded by a blue square icon). The 'vms' item is highlighted with a blue background.

- Listing collection's methods.

- Querying collection with oVirt search engine.
- Querying collection by custom constraint.
- Querying collection for specific resource.
- Accessing resource methods and properties.

```
api.vms.|
```



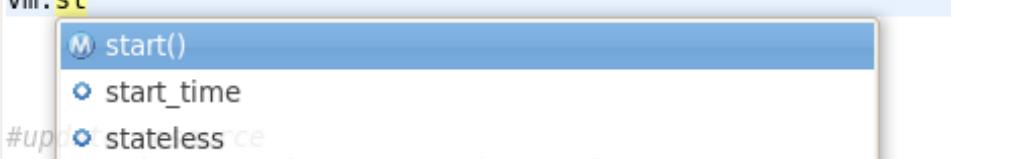
The screenshot shows an IntelliJ IDEA code editor with a code completion dropdown open over the line 'api.vms.'. The dropdown contains three items: 'add(vm)' (preceded by a blue circle icon), 'get(name)' (preceded by a blue circle icon), and 'list(query)' (preceded by a blue circle icon). The 'add(vm)' item is highlighted with a blue background.

```
#list by query
vms = api.vms.list(query = 'name=python_vm')

#search vms by property constraint
vms = api.vms.list(memory=1073741824)

#get by constraints
vm = api.vms.get(id = '02f0f4a4-9738-4731-83c4-293f3f734782')

vm.st|
```



The screenshot shows an IntelliJ IDEA code editor with a code completion dropdown open over the line 'vm.st'. The dropdown contains three items: 'start()' (preceded by a blue circle icon), 'start\_time' (preceded by a blue circle icon), and 'stateless' (preceded by a blue circle icon). The 'start()' item is highlighted with a blue background.

# oVirt CLI



## 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 be in the user@domain format. |
| * password | - The password to use.   |

# CLI - Smart Auto Completion

```
[oVirt shell (connected)]#  
EOF      connect    create    disconnect  exit      list      shell      status  
action    console    delete    echo       help      ping      show      update  
[oVirt shell (connected)]#  
[oVirt shell (connected)]#  
[oVirt shell (connected)]# create  
cdrom      datacenter   group     network     permission   role      storagedomain  template    vm  
cluster    disk        host      nic         permit      snapshot   tag       user      vmpool  
[oVirt shell (connected)]#  
[oVirt shell (connected)]#  
[oVirt shell (connected)]# create vm  
cluster-id           high_availability-enabled  
cluster-name         high_availability-priority  
cpu-topology-cores  memory  
cpu-topology-sockets name  
custom_properties-custom_property--LIST origin  
description          os-boot-dev  
display-monitors    os-cmdline  
display-type         os-initRd  
domain-name          os-kernel  
os-type  
placement_policy-affinity  
stateless  
template-id  
template-name  
timezone  
type  
usb-enabled  
[oVirt shell (connected)]#  
[oVirt shell (connected)]#  
[oVirt shell (connected)]#  
[oVirt shell (connected)]#  
[oVirt shell (connected)]# create nic  
host  vm
```

# CLI - Smart Help

oVirt

```
[oVirt shell (connected)]# help create host
```

```
create <type> [base identifiers] [attribute options]
```

## DESCRIPTION

Create a new object with type host. See 'help create' for generic help on creating objects.

## ATTRIBUTE OPTIONS

The following options are available for objects with type host:

```
* --name: string  
* --address: string  
* --root_password: string  
* --cluster-id: string  
* [--port: int]  
* [--storage_manager-priority: int]  
* [--power_management-type: string]  
* [--power_management-enabled: boolean]  
* [--power_management-address: string]  
* [--power_management-user_name: string]  
* [--power_management-password: string]  
* [--power_management-options-option--LIST: {name:string,value:string}]
```

## RETURN VALUES

```
* 002 (COMMAND_ERROR)  
* 003 (INTERRUPTED)  
* 011 (NOT_FOUND)  
* 000 (OK)  
* 010 (REMOTE_ERROR)  
* 001 (SYNTAX_ERROR)  
* 004 (UNKNOWN_ERROR)
```

```
[oVirt shell (connected)]# help create vm
```

```
create <type> [base identifiers] [attribute options]
```

## DESCRIPTION

Create a new object with type vm. See 'help create' for generic help on creating objects.

## ATTRIBUTE OPTIONS

The following options are available for objects with type vm:

```
* --name: string  
* --template-id|name: string  
* --cluster-id|name: string  
* [--timezone: string]  
* [--os-boot-dev: string]  
* [--custom_properties-custom_property--LIST: {name:string,value:string}]  
* [--os-type: string]  
* [--usb-enabled: boolean]  
* [--type: string]  
* [--os-initRd: string]  
* [--display-monitors: int]  
* [--display-type: string]  
* [--os-cmdline: string]  
* [--cpu-topology-cores: int]  
* [--memory: long]  
* [--high_availability-priority: int]  
* [--high_availability-enabled: boolean]  
* [--domain-name: string]  
* [--description: string]  
* [--stateless: boolean]  
* [--cpu-topology-sockets: int]  
* [--placement_policy-affinity: string]
```

# CLI – Create

## USAGE

```
create <type> [base identifiers] [attribute options]
```

## DESCRIPTION

Create a new object with type vm. See 'help create' for generic help on creating objects.

## ATTRIBUTE OPTIONS

The following options are available for objects with type vm:

```
* --name: string
* --template-id|name: string
* --cluster-id|name: string
* [--timezone: string]
* [--os-boot-dev: string]
* [--custom_properties-custom_property--LIST: {name:string,value:string}]
* [--os-type: string]
* [--usb-enabled: boolean]
* [--type: string]
* [--os-initRd: string]
* [--display-monitors: int]
* [--display-type: string]
* [--os-cmdline: string]
* [--cpu-topology-cores: int]
* [--memory: long]
* [--high_availability-priority: int]
* [--high_availability-enabled: boolean]
* [--domain-name: string]
* [--description: string]
* [--stateless: boolean]
* [--cpu-topology-sockets: int]
* [--placement_policy-affinity: string]
```

:■

# CLI – Update

```
[oVirt shell (connected)]# update vm iscsi_desktop --description myvm  
  
id : f4a51ae1-4f31-45ee-ab6d-d5965e3bcf71  
name : iscsi_desktop  
description : myvm  
cluster-id : e8861726-0b88-11e1-bd8c-27fb0a7aaa76  
cpu-topology-cores : 1  
cpu-topology-sockets : 1  
creation_time : 2012-01-04T13:27:05.266+02:00  
display-monitors : 4  
display-type : spice  
high_availability-enabled : True  
high_availability-priority: 7  
memory : 1073741824  
memory_policy-guaranteed : 1073741824  
origin : rhev  
os-boot-dev : hd  
os-type : unassigned  
placement_policy-affinity : migratable  
start_time : 2012-02-27T15:40:57.480Z  
stateless : False  
status-state : down  
template-id : 9c42b69e-daa3-48d7-bf97-779603892f15  
type : desktop  
usb-enabled : True
```



# CLI – Delete

```
(oVirt cli) > list clusters
```

id	name	description
80eed02c-ac7d-11e0-b702-0bf21e6d33af	b	
7073b1ac-ef46-11e0-aa7c-d3e6f6b5731d	bb	
82b1c018-ac7d-11e0-ac42-5b8d8dc7c92	c	
63bc09b0-8b8b-11e0-bdc2-4356942887b3	Default_iscsi	
99408929-82cf-4dc7-a532-9d998063fa95	Default_nfs	The default server cluster
ffb2d112-8cf0-11e0-b34b-7f61455e6a71	Test_iscsi	
ada1672a-8cf1-11e0-9d3e-b75c5a33ec19	Test_nfs	
ad9bd996-a893-11e0-b174-e3232e67a091	Test_vlans	

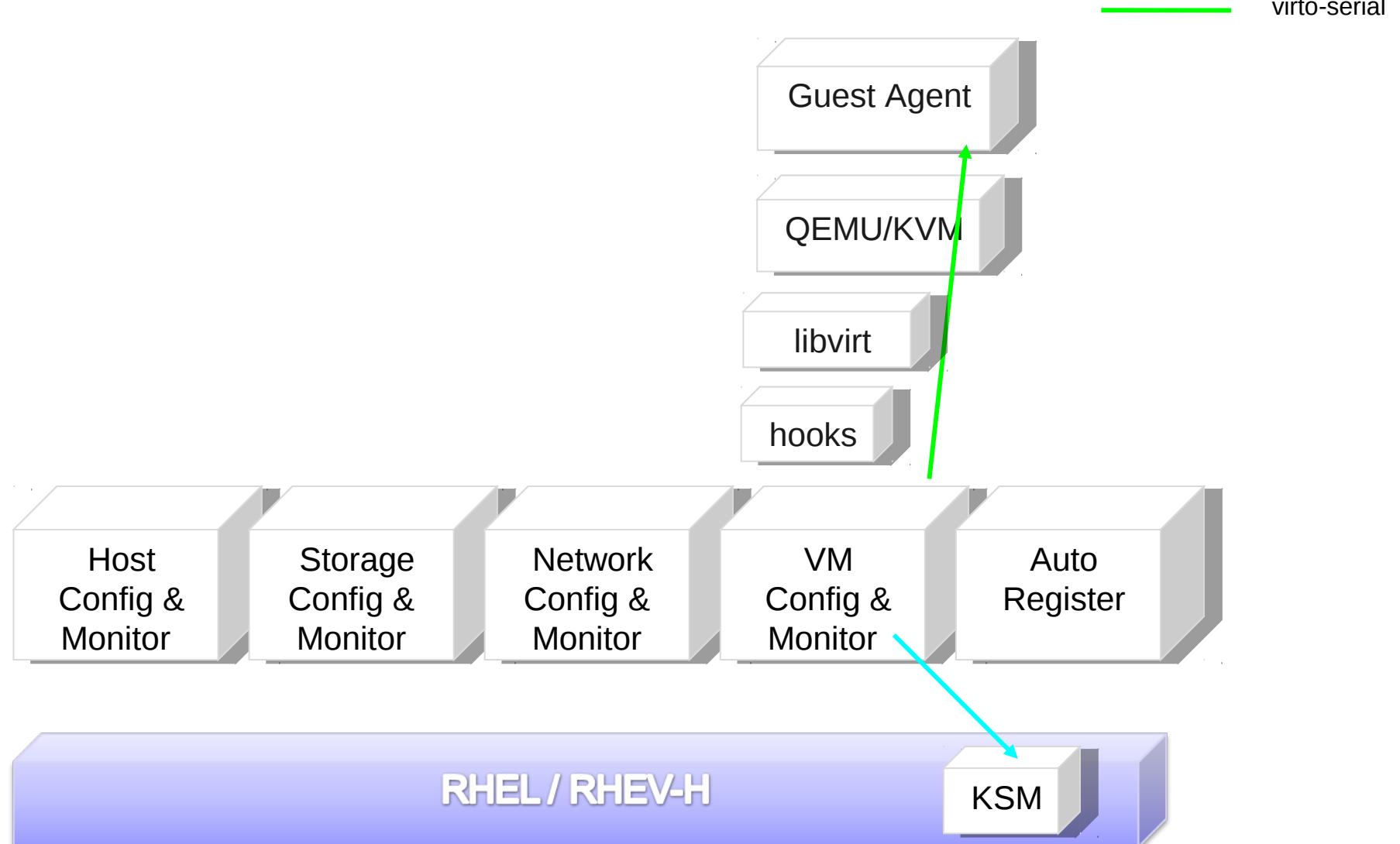
```
(oVirt cli) > delete cluster bb
```

```
(oVirt cli) > list clusters
```

id	name	description
80eed02c-ac7d-11e0-b702-0bf21e6d33af	b	
82b1c018-ac7d-11e0-ac42-5b8d8dc7c92	c	
63bc09b0-8b8b-11e0-bdc2-4356942887b3	Default_iscsi	
99408929-82cf-4dc7-a532-9d998063fa95	Default_nfs	The default server cluster
ffb2d112-8cf0-11e0-b34b-7f61455e6a71	Test_iscsi	
ada1672a-8cf1-11e0-9d3e-b75c5a33ec19	Test_nfs	
ad9bd996-a893-11e0-b174-e3232e67a091	Test_vlans	

# oVirt Host Agent - VDSM

oVirt

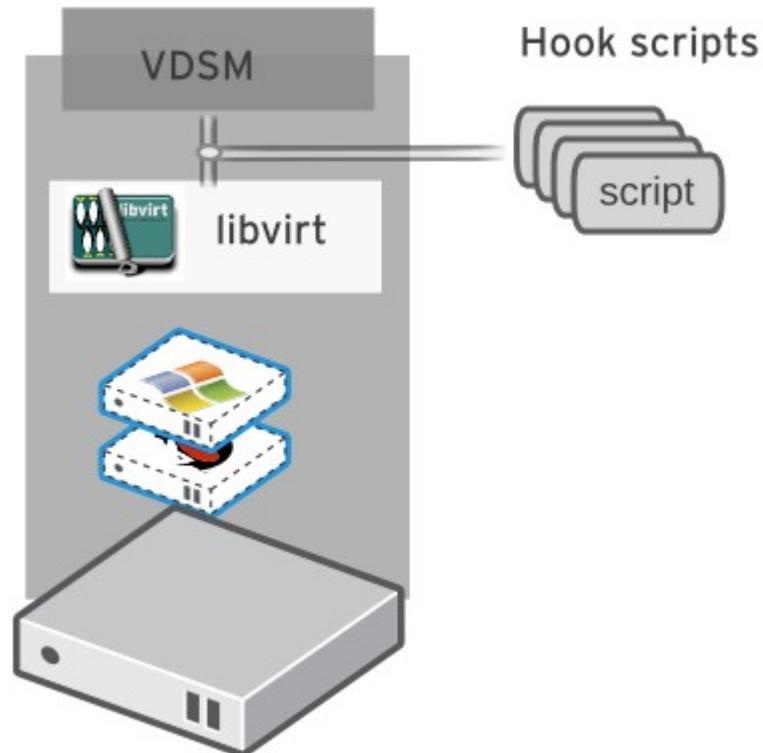


# Hooks



- “Hook” mechanism for customization
  - Allows administrator to define scripts to modify VM operation
    - eg. Extend or modify VM configuration

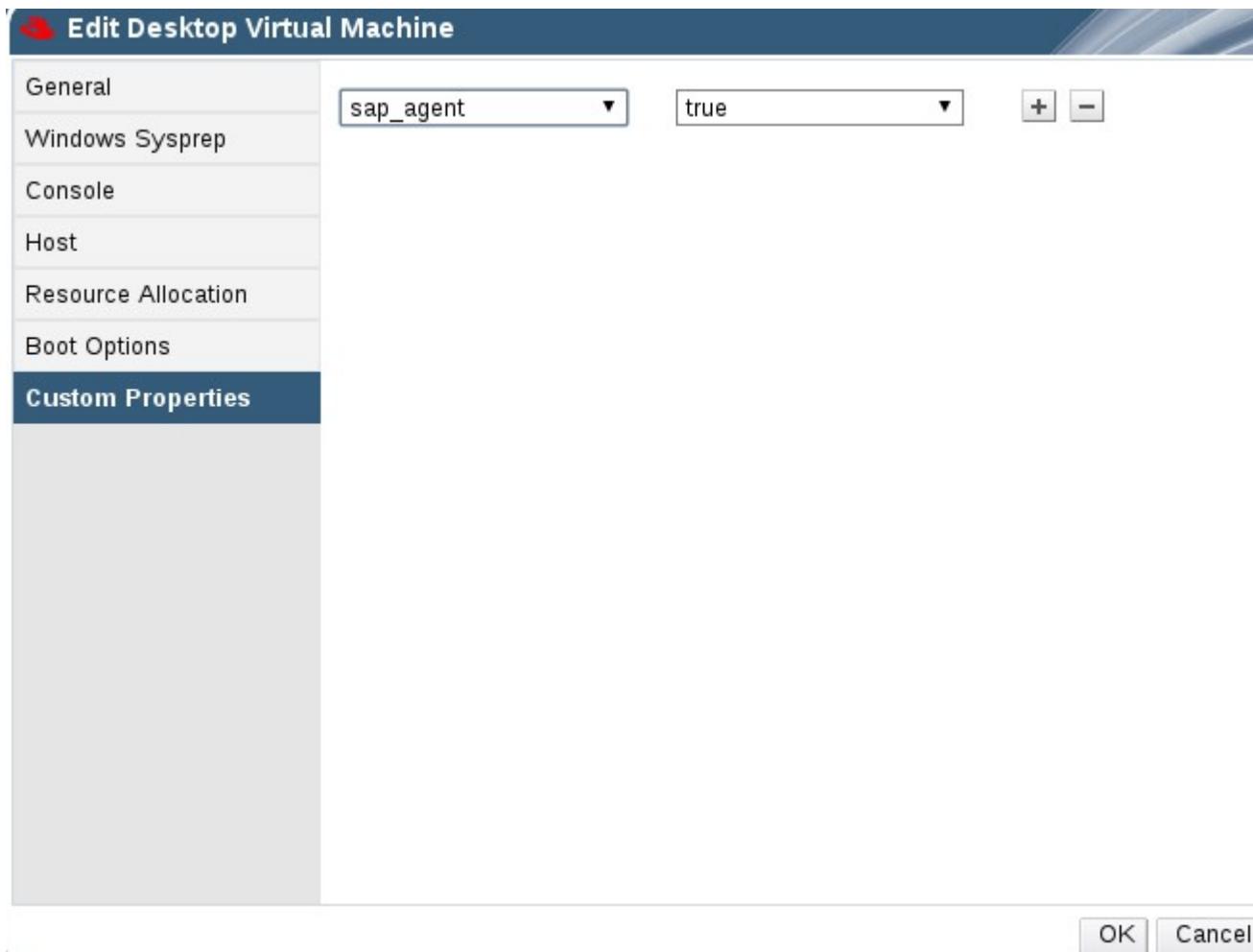
## Hooks



# Hooks

- Hook scripts are called at specific VM lifecycle events
  - VDSM (management agent) Start
  - Before VM start
  - After VM start
  - Before VM migration in/out
  - After VM migration in/out
  - Before and After VM Pause
  - Before and After VM Continue
  - Before and After VM Hibernate
  - Before and After VM resume from hibernate
  - Before and After VM set ticket New in 3.1
  - On VM stop
  - On VDSM Stop
- Hooks can modify a virtual machines XML definition before VM start
- Hooks can run system commands – eg. Apply firewall rule to VM

# Hooks



# Hooks

## Hooks installed in /usr/libexec/vdsm/hooks

```
[root@host1 ~]# cd /usr/libexec/vdsm/hooks/
[root@host1 hooks]# ls -l
total 68
drwxr-xr-x. 2 root root 4096 Apr 12 03:55 after_vdsm_stop
drwxr-xr-x. 2 root root 4096 Apr 12 03:55 after_vm_cont
drwxr-xr-x. 2 root root 4096 Apr 12 03:55 after_vm_de.hibernate
drwxr-xr-x. 2 root root 4096 Apr 12 03:55 after_vm_destroy
drwxr-xr-x. 2 root root 4096 Apr 12 03:55 after_vm_hibernate
drwxr-xr-x. 2 root root 4096 Apr 12 03:55 after_vm_migrate_destination
drwxr-xr-x. 2 root root 4096 Apr 12 03:55 after_vm_migrate_source
drwxr-xr-x. 2 root root 4096 Apr 12 03:55 after_vm_pause
drwxr-xr-x. 2 root root 4096 Apr 12 03:55 after_vm_start
drwxr-xr-x. 2 root root 4096 Apr 12 03:55 before_vdsm_start
drwxr-xr-x. 2 root root 4096 Apr 12 03:55 before_vm_cont
drwxr-xr-x. 2 root root 4096 Apr 12 03:55 before_vm_de.hibernate
drwxr-xr-x. 2 root root 4096 Apr 12 03:55 before_vm_hibernate
drwxr-xr-x. 2 root root 4096 Apr 12 03:55 before_vm_migrate_destination
drwxr-xr-x. 2 root root 4096 Apr 12 03:55 before_vm_migrate_source
drwxr-xr-x. 2 root root 4096 Apr 12 03:55 before_vm_pause
drwxr-xr-x. 2 root root 4096 Apr 12 03:55 before_vm_start
[root@host1 hooks]#
```

General	Virtual Machines	Network Interfaces	Host Hooks	Permissions
Event Name	Script Name	Property Name	Property Value	
before_vm_start	10_faqemu	md5	2c352c04ecf994	

# Hooks



```
1 #!/usr/bin/python
2
3 import os
4 import sys
5 import hooking
6 import traceback
7 from xml.dom import minidom
8
9 '''
10 watchdog vdsd hook
11 adding to domain xml
12 <watchdog model='i6300esb' action='reset' />
13 '''
14
15 if os.environ.has_key('watchdog'):
16     try:
17         sys.stderr.write('watchdog: adding watchdog support\n')
18         domxml = hooking.read_domxml()
19
20         devices = domxml.getElementsByTagName('devices')[0]
21         card = domxml.createElement('watchdog')
22         card.setAttribute('model', 'i6300esb')
23         card.setAttribute('action', 'reset')
24
25         devices.appendChild(card)
26
27         hooking.write_domxml(domxml)
28     except:
29         sys.stderr.write('watchdog: [unexpected error]: %s\n' % traceback.format_exc())
30         sys.exit(2)
```

# In the works (engine-devel@ovirt.org)

- Storage Live Migration
- Storage array integration
- SLA Manager
- Network Types
- Backup API
- NetStack/Quantum
- Libguestfs integration
- virt-resize, pv-resize

.....

# How To Contribute or Download



- **Website and Repository:**
  - <http://www.ovirt.org>
  - <http://www.ovirt.org/wiki>
  - <http://www.ovirt.org/project/subprojects/>
- **Mailing lists:**
  - <http://lists.ovirt.org/mailman/listinfo>
- **IRC:**
  - #ovirt on OFTC



# THANK YOU !

<http://www.ovirt.org>