



# Intro to oVirt

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- oVirt Workshops

- Barcelona – 7-9 November 2012

- <http://kvmforumovirtworkshop2012.sched.org/>

- Wednesday – oVirt for Users
    - Thursday – oVirt for Integrators
    - Friday – oVirt for Developers
  - Sunnyvale, California - 22-24 January 2013  
(hosted by NetApp)

# What is oVirt?

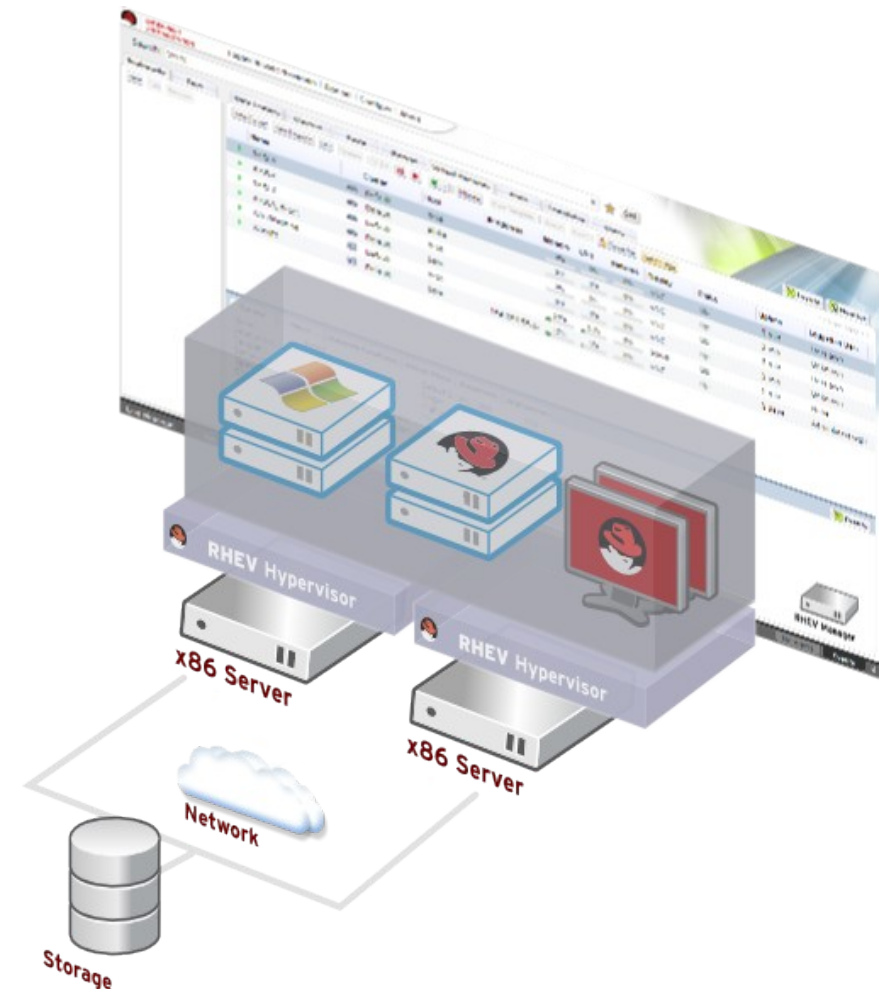
Large scale, centralized management for server and desktop virtualization

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



Search: Vms:

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

New Server New Desktop Edit Remove Run Once Migrate Cancel Migration Make Template Export Change CD Assign Tags Guide Me

1-14

**Tree**

Expand All Collapse All

- System
  - dc-30
  - dc-30-with-various-clusters
    - Storage
      - data5-dc-30-cluster-31
    - Networks
      - ovirtmgmt
      - Templates
    - Clusters
      - cluster-30-on-dc-30
        - Hosts
        - VMs
      - cluster-31-on-dc-30
      - cluster-32-on-dc-30
    - dc-30-with-vlan-51
    - dc-31
    - dc-31-vlan-ovirtmgmt
    - Default
    - demo-dc-32
    - test-net-on-31-dc
    - test-net-on-32-dc
    - test-vlan

Name	Host	IP Address	Cluster	Data Center	Memory	CPU	Network	Display	Status	Uptime	Logged-in User
demo-vm	zeus02		cluster-32	demo-dc-32	0%	6%	0%	Spice	Up	2 days	
demo-vm-2			Default	Default	0%	0%	0%		Down		
linux-vm			cluster-32	demo-dc-32	0%	0%	0%		Down		
nw-filter-vm-1			cluster-31	dc-31	0%	0%	0%		Down		
nwfilter-vm-32-rhel-6	zeus02	10.35.18.154	cluster-32	demo-dc-32	34%	0%	0%	Spice	Up	2 h	
rhel63-vm	zeus02		cluster-32	demo-dc-32	32%	6%	0%	Spice	Up	2 h	
vm-1-dc-30-cluster-3			cluster-30-on-dc-30	dc-30-with-various-cl	0%	0%	0%		Down		
vm-del-net-2			cluster-30	dc-30	0%	0%	0%		Down		
vm-del-net-bug			cluster-30	dc-30	0%	0%	0%		Down		
vm-tempalte-test-1			Default	Default	0%	0%	0%		Down		
vm-tempalte-test-2			Default	Default	0%	0%	0%		Down		
vm-tempalte-test-3			Default	Default	0%	0%	0%		Down		
vm-tempalte-test-4			Default	Default	0%	0%	0%		Down		
win2008			cluster-31	dc-31	0%	0%	0%		Down		

General Network Interfaces Disks Snapshots Applications Permissions Events

Name:	demo-vm	Defined Memory:	1024 MB	Origin:	oVirt
Description:		Physical Memory Guaranteed:	256 MB	Run On:	Any Host in Cluster
Template:	Blank	Number of CPU Cores:	1 (1 Socket(s), 1 Core(s) per Socket)	Custom Properties:	Not-Configured
Operating System:	Red Hat Enterprise Linux 6.x x64	Number of Monitors:	1	Cluster Compatibility Version:	3.2
Default Display Type:	Spice	USB Policy:	Disabled		

**Bookmarks**

**Tags**

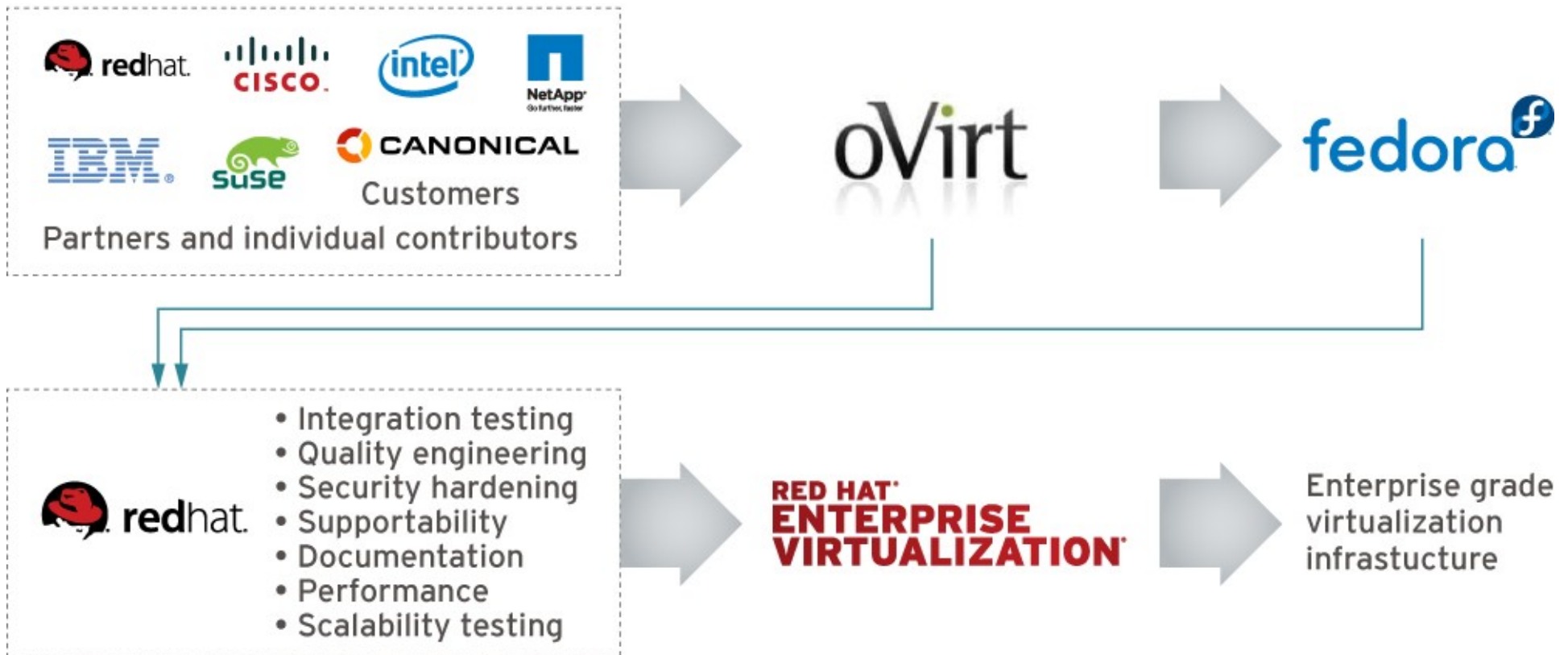
# Goals of the oVirt project

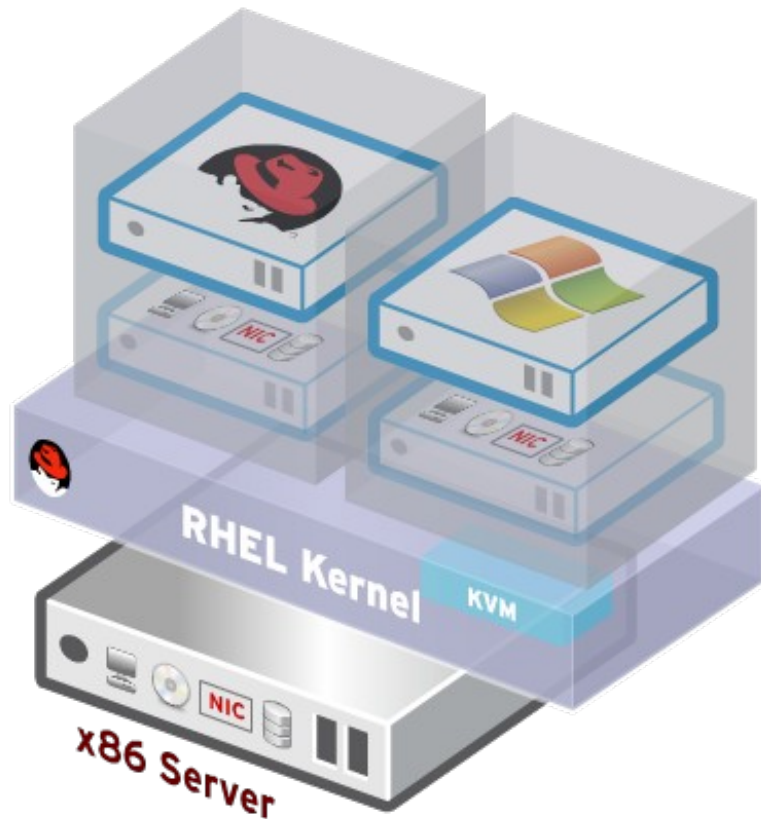
- Build a community around all levels of the virtualization stack – hypervisor, manager, GUI, API, etc.
- To deliver both a cohesive complete stack and discretely reusable components for open virtualization management
- Provide a release of the project on a well defined schedule
- Focus on management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

# Governance

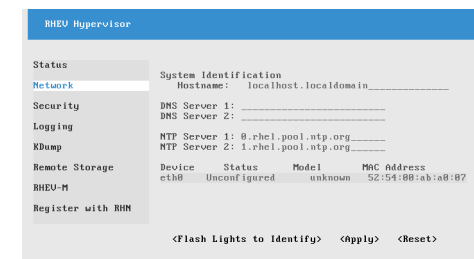
- Merit based, open governance model
- Built using the best concepts taken from Apache and Eclipse Foundations
- Governance split between board and projects
  - oVirt Board
  - Multiple projects under the oVirt brand

# OPEN VIRTUALIZATION MANAGEMENT





- 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





# 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

# How to Start?



- Build from source..
- Or, just install
  - yum install ovirt-engine
  - ./ovirt-setup
  - Add managed hosts
- Or, New: All-in-one live usb  
[http://wiki.ovirt.org/wiki/OVirt\\_Live](http://wiki.ovirt.org/wiki/OVirt_Live)

# Administration Console



Search: Vms:

Data Centers Clusters Hosts Storage Virtual Machines Pools Templates Users

Events

Tree

Expand All Collapse All

System

Default

ISCSI-RC-DC

Storage

Templates

Clusters

intel-cluster

Hosts

nott-vds2.qa.lab.tlv.r

nott-vds3.qa.lab.tlv.r

VMs

NFS-RC-DC

Storage

Templates

Clusters

Bookmarks

Tags

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
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	

# Search Auto Complete



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 = rebootinprogress

## 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

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	

General Network Interfaces Virtual Disks Snapshots Applications Permissions Events

### Installed Applications

Empty table area for installed applications.

# Search Results



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

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

**Tree**

Expand All Collapse All

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

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

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	

# Add Host As Simple As



Search: Host:

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

Tree

Expand All Collapse All

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

New Edit Remove Activate Maintenance Configure Local Storage Assign Tags

Name
nott-vds2.qa.lab.tlv.redhat.com
nott-vds3.qa.lab.tlv.redhat.com
nott-vdsa.qa.lab.tlv.redhat.com

### New Host

**General**

Data Center: Default

Host Cluster: Default

Name:

Address:

Root Password:

Override IP tables:

Power Management

OK Cancel

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

# Power Management



Search: Host:

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

Tree

Expand All Collapse All

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

Bookmarks

Tags

New Edit Remove Activate Maintenance Configure Local Storage Assign Tags

- Name
- nott-vds2.qa.lab.tlv.redhat.com
- nott-vds3.qa.lab.tlv.redhat.com
- nott-vdsa.qa.lab.tlv.redhat.com

### New Host

Enable Power Management

**Power Management**

Address

User Name

Password

Type

Port

Slot

Options

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

Secure

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

# Setup Networks: Dialog

● **Setup Host Networks**

**Drag to make changes**

Interfaces	Assigned Logical Networks	Unassigned Logical Networks
<div style="border: 1px solid gray; padding: 5px; margin-bottom: 5px;"> <span style="font-size: 0.8em;">🔌</span> bond0           </div> <div style="border: 1px solid gray; padding: 5px; margin-bottom: 5px;"> <span style="color: red;">●</span> eth1           </div> <div style="border: 1px solid gray; padding: 5px;"> <span style="color: green;">●</span> eth2           </div>	<div style="border: 1px solid gray; padding: 5px; margin-bottom: 5px;"> <span style="color: green;">▲</span> NOVMT_VLAN_MTU_5 (VLAN 500)           </div> <div style="border: 1px solid gray; padding: 5px; margin-bottom: 5px;"> <span style="color: green;">▲</span> VLAN_MTU_5000 (VLAN 222) <span style="font-size: 0.6em;">vm</span> </div> <div style="border: 1px solid gray; padding: 5px;"> <span style="color: green;">▲</span> VLAN_MTU_5000_2 (VLAN 52) <span style="font-size: 0.6em;">vm</span> </div>	<div style="background-color: #ccc; padding: 5px; margin-bottom: 5px; text-align: center;"><b>Required</b></div> <div style="border: 1px solid gray; padding: 5px; margin-bottom: 5px;"> <span style="color: green;">▲</span> NON_VM_MTU_5000           </div> <div style="background-color: #ccc; padding: 5px; margin-bottom: 5px; text-align: center;"><b>Non Required</b></div> <div style="border: 1px solid gray; padding: 5px; margin-bottom: 5px;"> <span style="color: green;">▲</span> NON_VM_MTU_9000           </div> <div style="border: 1px solid gray; padding: 5px; margin-bottom: 5px;"> <span style="color: green;">▲</span> NOVMT_VLAN_MTU_9 (VLAN 900)           </div> <div style="border: 1px solid gray; padding: 5px; margin-bottom: 5px;"> <span style="color: green;">▲</span> VLAN_MTU_9000 (VLAN 9) <span style="font-size: 0.6em;">vm</span> </div> <div style="border: 1px solid gray; padding: 5px;"> <span style="color: green;">▲</span> VLAN_MTU_9000_2 (VLAN 92) <span style="font-size: 0.6em;">vm</span> </div>
<div style="border: 1px solid gray; padding: 5px; margin-bottom: 5px;"> <span style="font-size: 0.8em;">🔌</span> bond1           </div> <div style="border: 1px solid gray; padding: 5px; margin-bottom: 5px;"> <span style="color: green;">●</span> eth3           </div> <div style="border: 1px solid gray; padding: 5px;"> <span style="color: green;">●</span> eth4           </div>	<div style="border: 1px dashed gray; padding: 20px 0;">no network assigned</div>	
<div style="border: 1px solid gray; padding: 5px;"> <span style="color: green;">●</span> eth0           </div>	<div style="border: 1px solid gray; padding: 5px;"> <span style="color: green;">▲</span> ovirtmgmt <span style="font-size: 0.6em;">vm</span> </div>	

Verify connectivity between Host and Engine ?

Save network configuration ?



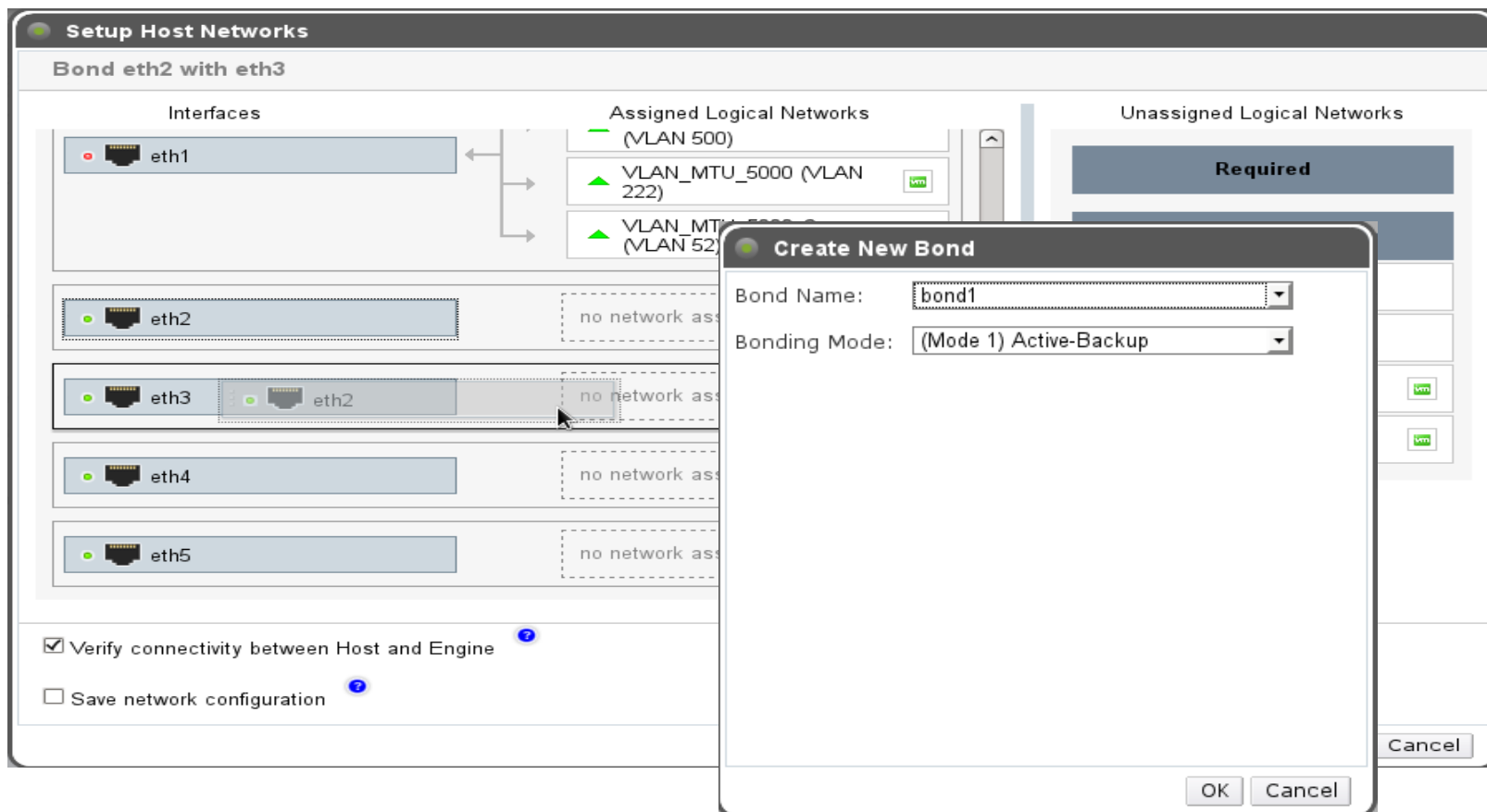
## Setup Networks: Create Bond

- Drag an interface on top of another interface to bond the interfaces or to extend an existing bond



# Setup Networks: Create Bond

- Drag an interface on top of another interface to bond the interfaces or to extend an existing bond



# Setup Networks: Edit Bond

- Click the pencil icon to edit bond configuration

The screenshot displays the 'Setup Host Networks' window in oVirt. The main interface is divided into three sections: 'Interfaces', 'Assigned Logical Networks', and 'Unassigned Logical Networks'. In the 'Interfaces' section, a bond interface named 'bond0' is shown, which is composed of two slave interfaces, 'eth2' and 'eth3'. A pencil icon next to 'bond0' is highlighted, indicating it is selected for editing. Below the bond name, the configuration is shown as 'bond0', 'Boot Protocol: None', and 'Bond Options: mode=1 miimon=100'. The 'Assigned Logical Networks' section is currently empty, showing 'no network assigned'. The 'Unassigned Logical Networks' section lists several networks, including 'MTU\_9000', 'VLAN\_MTU\_9000', 'MTU\_9000 (VLAN)', 'MTU\_9000\_2', and 'MTU\_9000\_2'. A dialog box titled 'Edit Bond Interface bond0' is open in the foreground, showing the following configuration: 'Bond Name: bond0', 'Bonding Mode: Custom:', and 'Custom mode: mode=1 miimon=100'. The dialog box has 'OK' and 'Cancel' buttons at the bottom.

## Setup Networks: Attach Network

- Drag a network from the unassigned networks list to the interface/bond to be attached



# Configure Storage Once for Entire Cluster

Activities Firefox Fri 22:18 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#storage-general

oVirt Open Virtualization Manager

Logged in user: admin@internal | Configure | Guide | About | Sign Out

Search: Storage:

**Edit Domain**

Name: hateya-ovirt-rc-1

Domain Function / Storage Type: Data / iSCSI

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

<input type="checkbox"/>	LUN ID	Dev Size	#path	Vendor ID	Product ID	Serial
<input checked="" type="checkbox"/>	1hateya-ovirt-rc11	75GB	0	IET	VIRTUAL-C SIET_VIRTUAL-DISK	
<input type="checkbox"/>	1hateya-ovirt-rc31	75GB	1	IET	VIRTUAL-C SIET_VIRTUAL-DISK	
<input type="checkbox"/>	1hateya-ovirt-rc41	75GB	1	IET	VIRTUAL-C SIET_VIRTUAL-DISK	

OK Cancel

System

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

Domain Name

- export\_test
- hateya-ovirt-rc-1
- hateya-ovirt-rc-2
- nfs-ovirt-rc-2
- nfs-ovirt-rc-4
- OvirtSharelso

General Data Center Vir

Size: 74 GB  
Available: 18 GB  
Used: 56 GB  
Over Allocation Ratio: 2100%

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

# 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

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

oVirt Open Virtualization Manager

Logged in user: admin@internal | Configure | Guide | About | Sign Out

Search: Storage:

**Edit Domain**

Name: hateya-ovirt-rc-1

Domain Function / Storage Type: Data / iSCSI

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

Discover Targets

Address:   User Authentication:

Port: 3260 CHAP username:  CHAP password:

Discover Login All

Target Name	Address	Port	
<input checked="" type="checkbox"/> hateya-ovirt-rc1	10.35.64.81	3260	Login
<input type="checkbox"/> LUN ID	Dev. Size	#path	Vendor ID
<input checked="" type="checkbox"/> 1hateya-ovirt-rc	75GB	0	IET
<input type="checkbox"/> hateya-ovirt-rc3	10.35.64.81	3260	Login
<input type="checkbox"/> hateya-ovirt-rc4	10.35.64.81	3260	Login

OK Cancel

Tree: System > ISCSI-RC-DC > Storage > Clusters > intel-cluster > Hosts > nott-vds2.qa.lab.tlv.r > nott-vds3.qa.lab.tlv.r > VMs > NFS-RC-DC > Storage > Templates > Clusters

Domain Name: export\_test, hateya-ovirt-rc-1, hateya-ovirt-rc-2, nfs-ovirt-rc-2, nfs-ovirt-rc-4, OvirtSharelso

General Data Center Vir

Size: 74 GB Available: 18 GB Used: 56 GB Over Allocation Ratio: 2100%

Cross Data-Center Status Free Space: Active 326 GB, Active 18 GB, Active 20 GB, Inactive 357 GB, Unattached < 1 GB, Active 29 GB

Bookmarks Tags

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

3 Alerts Events

# Guide Me Dialogs

- Data Centers
- Clusters
- Hosts
- Networks
- Storage
- Disks
- Virtual Machines
- Pools
- Templates
- Volumes
- Users

New Edit Remove Force Remove Guide Me

Name	Storage Type	Status	Compatibility Version	Description
▼ dc-30	NFS	Non-Responsive	3.1	
▼ dc-30-with-various-cluster	NFS	Non-Responsive	3.0	
▼ dc-30-with-vlan-51	NFS	Uninitialized	3.0	
▼ dc-31	NFS	N		
▼ dc-31-vlan-ovirtmgmt	NFS	U		
▼ Default	NFS	N		
▲ demo-dc-32	NFS	U		
▼ test-net-on-31-dc	NFS	U		
▼ test-net-on-32-dc	NFS	U		
▼ test-vlan	NFS	U		

### New Data Center - Guide Me

**There are still unconfigured entities:**

- [Configure Cluster](#)
- [Configure Host](#)
- [Configure Storage](#)
- [Attach Storage](#)

**Optional actions:**

- [+ Attach ISO Library](#)

[Configure Later](#)

There should be at least one active Host in the Data Center

- Storage
- Logical Networks
- Clusters
- Permissions

Attach Data Attach ISO Attach Export Detach Activate M

Domain Name	Domain Type	Status	Free Space	Used Space	Total Space
-------------	-------------	--------	------------	------------	-------------

# Add Servers or Desktops

- Data Centers
- Clusters
- Hosts
- Networks
- Storage
- Disks
- Virtual Machines**
- Pools
- Templates
- Volumes
- Users

New Server New Desktop Edit Remove Run Once Migrate Cancel Migration Make Template Export Change CD Assign Tags Guide Me

Name	Host
demo-vm	zeus02
demo-vm-2	
linux-vm	
nw-filter-vm-1	
nwfilter-vm-32-rhel-6: zeus02	
rhel63-vm	zeus02
vm-1-dc-30-cluster-3	
vm-del-net-2	
vm-del-net-bug	
vm-tempalte-test-1	
vm-tempalte-test-2	
vm-tempalte-test-3	
vm-tempalte-test-4	
win2008	

### New Server Virtual Machine

**General**

Data Center: demo-dc-32

Host Cluster: cluster-32

Host:

Name:

Description:

Based on Template: Blank

Memory Size: 512 MB

Total Virtual CPUs: 1

Advanced Parameters

Operating System: Unassigned

OK Cancel

**General** | Network Interfaces

Name: nwfilter-vm-1

Description:

Template: Blank

Operating System: Red Hat Ent

Default Display Type: Spice

Priority: Low

Status	Uptime	Logged-in User
Up	2 days	
Down		
Down		
Down		
Up	2 h	
Up	2 h	
Down		
Down		
Down		
Down		
Down		
Down		
Down		
Down		
Down		
Down		

Origin: oVirt

Run On: Any Host in Cluster

Custom Properties: Not-Configured

Cluster Compatibility Version: 3.2



# Even Windows via Sysprep

Navigation tabs: Data Centers, Clusters, Hosts, Networks, Storage, Disks, Virtual Machines, Pools, Templates, Volumes, Users

Actions: New Server, New Desktop, Edit, Remove, Run Once, Migrate, Cancel Migration, Make Template, Export, Change CD, Assign Tags, Guide Me

Name	Host	Status	Uptime	Logged-in User
demo-vm	zeus02	Up	2 days	
demo-vm-2		Down		
linux-vm		Down		
nw-filter-vm-1		Down		
nwfilter-vm-32-rhel-6: zeus02	zeus02	Up	2 h	
rhel63-vm	zeus02	Up	2 h	
vm-1-dc-30-cluster-3		Down		
vm-del-net-2		Down		
vm-del-net-bug		Down		
vm-tempalte-test-1		Down		
vm-tempalte-test-2		Down		
vm-tempalte-test-3		Down		
vm-tempalte-test-4		Down		
win2008		Down		

### New Server Virtual Machine

- General
- Initial Run**
- Console
- Host
- High Availability
- Resource Allocation
- Boot Options
- Custom Properties

**General**

Time Zone: (GMT-12:00) GMT-12:00

**Windows**

Domain: [ ]

OK Cancel

**General** | Network Interfaces

Name: nwfilter-vm-32-rhel-6: zeus02

Description:

Template: Blank

Operating System: Red Hat Enterprise Linux 6

Default Display Type: Spice

Priority: Low

Origin: oVirt

Run On: Any Host in Cluster

Custom Properties: Not-Configured

Cluster Compatibility Version: 3.2

# Console Details (SPICE or VNC)

Data Centers Clusters Hosts Networks Storage Disks Virtual Machines Pools Templates Volumes Users

New Server New Desktop Edit Remove Run Once Migrate Cancel Migration Make Template Export Change CD Assign Tags Guide Me

Name	Host
demo-vm	zeus02
demo-vm-2	
linux-vm	
nw-filter-vm-1	
nwfilter-vm-32-rhel-6: zeus02	
rhel63-vm	zeus02
vm-1-dc-30-cluster-3	
vm-del-net-2	
vm-del-net-bug	
vm-tempalte-test-1	
vm-tempalte-test-2	
vm-tempalte-test-3	
vm-tempalte-test-4	
win2008	

### New Server Virtual Machine

- General
- Initial Run
- Console**
- Host
- High Availability
- Resource Allocation
- Boot Options
- Custom Properties

Protocol: Spice

USB Support: Disabled

Smartcard enabled

OK Cancel

Status	Uptime	Logged-in User
Up	2 days	
Down		
Down		
Down		
Up	2 h	
Up	2 h	
Down		
Down		
Down		
Down		
Down		
Down		
Down		
Down		

General Network Interfaces

Name: nwfilter-vm-  
Description:  
Template: Blank  
Operating System: Red Hat Ent  
Default Display Type: Spice  
Priority: Low

Origin: oVirt  
Run On: Any Host in Cluster  
Custom Properties: Not-Configured  
Cluster Compatibility Version: 3.2

# Host Aspects

Name	Host
demo-vm	zeus02
demo-vm-2	
linux-vm	
nw-filter-vm-1	
nwfilter-vm-32-rhel-6	zeus02
rhel63-vm	zeus02
vm-1-dc-30-cluster-3	
vm-del-net-2	
vm-del-net-bug	
vm-tempalte-test-1	
vm-tempalte-test-2	
vm-tempalte-test-3	
vm-tempalte-test-4	
win2008	

### New Server Virtual Machine

**General**

**Initial Run**

**Console**

**Host**

**High Availability**

**Resource Allocation**

**Boot Options**

**Custom Properties**

**Run On:**

Any Host in Cluster

Specific

**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)

CPU Pinning topology

*Format: v#p[\_v#p]*  
*Examples:*

- 0#0 => pin vCPU 0 to pCPU 0
- 0#0\_1#3 => pin vCPU 0 to pCPU 0 and pin vCPU 1 to pCPU 3
- 1#1-4,^2 => pin vCPU 1 to pCPU set 1 to 4, excluding 2

OK Cancel

Status	Uptime	Logged-in User
Up	2 days	
Down		
Down		
Down		
Up	2 h	
Up	2 h	
Down		
Down		
Down		
Down		
Down		
Down		
Down		
Down		
Down		

**General** Network Interfaces

Name: nwfilter-vm-

Description:

Template: Blank

Operating System: Red Hat Ent

Default Display Type: Spice

Priority: Low

Origin: oVirt

Run On: Any Host in Cluster

Custom Properties: Not-Configured

Cluster Compatibility Version: 3.2

# High Availability

Data Centers Clusters Hosts Networks Storage Disks Virtual Machines Pools Templates Volumes Users

New Server New Desktop Edit Remove Run Once Migrate Cancel Migration Make Template Export Change CD Assign Tags Guide Me

Name	Host
demo-vm	zeus02
demo-vm-2	
linux-vm	
nw-filter-vm-1	
nwfilter-vm-32-rhel-6	zeus02
rhel63-vm	zeus02
vm-1-dc-30-cluster-3	
vm-del-net-2	
vm-del-net-bug	
vm-tempalte-test-1	
vm-tempalte-test-2	
vm-tempalte-test-3	
vm-tempalte-test-4	
win2008	

### New Server Virtual Machine

- General
- Initial Run
- Console
- Host
- High Availability**
- Resource Allocation
- Boot Options
- Custom Properties

Highly Available

**Priority for Run/Migration queue:**

- Low
- Medium
- High

OK Cancel

Status	Uptime	Logged-in User
Up	2 days	
Down		
Down		
Down		
Up	2 h	
Up	2 h	
Down		
Down		
Down		
Down		
Down		
Down		
Down		
Down		
Down		

**General** Network Interfaces

Name: nwfilter-vm-1

Description:

Template: Blank

Operating System: Red Hat Ent

Default Display Type: Spice

Priority: Low

Origin: oVirt

Run On: Any Host in Cluster

Custom Properties: Not-Configured

Cluster Compatibility Version: 3.2

# Control Allocated Resources (Disk, Memory)

Navigation tabs: Data Centers, Clusters, Hosts, Networks, Storage, Disks, Virtual Machines, Pools, Templates, Volumes, Users

Actions: New Server, New Desktop, Edit, Remove, Run Once, Migrate, Cancel Migration, Make Template, Export, Change CD, Assign Tags, Guide Me

Name	Host	Status	Uptime	Logged-in User
demo-vm	zeus02	Up	2 days	
demo-vm-2		Down		
linux-vm		Down		
nw-filter-vm-1		Down		
nwfilter-vm-32-rhel-6: zeus02		Up	2 h	
rhel63-vm	zeus02	Up	2 h	
vm-1-dc-30-cluster-3		Down		
vm-del-net-2		Down		
vm-del-net-bug		Down		
vm-tempalte-test-1		Down		
vm-tempalte-test-2		Down		
vm-tempalte-test-3		Down		
vm-tempalte-test-4		Down		
win2008		Down		

### New Server Virtual Machine

- General
- Initial Run
- Console
- Host
- High Availability
- Resource Allocation**
- Boot Options
- Custom Properties

**Memory Allocation:**  
Physical Memory Guaranteed:

**Storage Allocation:** (Available only when a template is selected)  
Template Provisioning:  Thin  Clone

OK Cancel

**General** | Network Interfaces

Name: nwfilter-vm-  
Description:  
Template: Blank  
Operating System: Red Hat Ent  
Default Display Type: Spice  
Priority: Low

Origin: oVirt  
Run On: Any Host in Cluster  
Custom Properties: Not-Configured  
Cluster Compatibility Version: 3.2

# Boot Devices

- Data Centers
- Clusters
- Hosts
- Networks
- Storage
- Disks
- Virtual Machines
- Pools
- Templates
- Volumes
- Users

New Server New Desktop Edit Remove Run Once Migrate Cancel Migration Make Template Export Change CD Assign Tags Guide Me

Name	Host
demo-vm	zeus02
demo-vm-2	
linux-vm	
nw-filter-vm-1	
nwfilter-vm-32-rhel-6: zeus02	
rhel63-vm	zeus02
vm-1-dc-30-cluster-3	
vm-del-net-2	
vm-del-net-bug	
vm-tempalte-test-1	
vm-tempalte-test-2	
vm-tempalte-test-3	
vm-tempalte-test-4	
win2008	

### New Server Virtual Machine

**General**

Initial Run: First Device

Console: Second Device

Host: Attach CD

High Availability

Resource Allocation

**Boot Options**

kernel path

initrd path

kernel parameters

Custom Properties

OK Cancel

Status	Uptime	Logged-in User
Up	2 days	
Down		
Down		
Down		
Up	2 h	
Up	2 h	
Down		
Down		
Down		
Down		
Down		
Down		
Down		
Down		
Down		

**General** | Network Interfaces

Name: nwfilter-vm-

Description:

Template: Blank

Operating System: Red Hat Ent

Default Display Type: Spice

Priority: Low

Origin: oVirt

Run On: Any Host in Cluster

Custom Properties: Not-Configured

Cluster Compatibility Version: 3.2

# Advanced Options via Custom Properties

Manager

Logged in user: admin@internal | Configure | Guide | About

Data Centers Clusters Hosts Networks Storage Disks Virtual Machines Pools Templates Volumes Users

New Server New Desktop Edit Remove Run Once Migrate Cancel Migration Make Template Export Change CD Assign Tags Guide Me

Name	Host
demo-vm	zeus02
demo-vm-2	
linux-vm	
nw-filter-vm-1	
nwfilter-vm-32-rhel-6: zeus02	
rhel63-vm	zeus02
vm-1-dc-30-cluster-3	
vm-del-net-2	
vm-del-net-bug	
vm-tempalte-test-1	
vm-tempalte-test-2	
vm-tempalte-test-3	
vm-tempalte-test-4	
win2008	

### New Server Virtual Machine

- General
- Initial Run
- Console
- Host
- High Availability
- Resource Allocation
- Boot Options
- Custom Properties**

sndbuf		+	-
sap_agent	true	+	-
vhost		+	-
Please select a key...		+	-

OK Cancel

Status	Uptime	Logged-in User
Up	2 days	
Down		
Down		
Down		
Up	2 h	
Up	2 h	
Down		
Down		
Down		
Down		
Down		
Down		
Down		
Down		
Down		

**General** Network Interfaces

Name: nwfilter-vm-1  
Description:  
Template: Blank  
Operating System: Red Hat Ent  
Default Display Type: Spice  
Priority: Low

Origin: oVirt  
Run On: Any Host in Cluster  
Custom Properties: Not-Configured  
Cluster Compatibility Version: 3.2

New Edit Remove

Name	Assigned VMs
rhel-pool-2-nics	0
sysprep-win-xp	0
vm-tempalte-test	4

### Edit Pool

- General**
- Pool
- Initial Run
- Console
- Host
- Resource Allocation
- Boot Options
- Custom Properties

Data Center: Default

Host Cluster: Default

Name: vm-tempalte-test

Description:

Prestarted VMs: 0 out of 4 VMs in pool

Increase number of VMs in pool by: 0 VMs

Based on Template: test-vm-pool

Memory Size: 512 MB

Total Virtual CPUs: 1

Advanced Parameters

Operating System: Unassigned

OK Cancel

Name: vm-tempalte-test  
Description:  
Template: test-vm-pool  
Operating System: Unassigned  
Default Display Type: Spice

Origin: oVirt  
Is Stateless: false  
Run On: Any Host in Cluster

Resides on Storage Domain: data3-default



# Assign Permissions to Objects by Roles



Search: Vms:

**Tree**

Expand All Collapse All

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

Bookmarks

Tags

### Configure

Roles

Show  All Roles  Administrator Roles  User Roles

New Edit Copy Remove

	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

Close

Events

Uptime	Logged-in User
1 day	
1 day	
1 day	
1 day	
1 day	
1 day	
1 day	

Events

# Define Your Own Roles

Activities Firefox Fri 22:21 en Itamar Heim

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#vms-application

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

Search: Vms:

**Configure**

Roles Show All Roles Administrator Roles User Roles

System Permissions

**New Role**

Name: \_\_\_\_\_ Description: \_\_\_\_\_

Account Type:  User  Admin

Check Boxes to Allow Action

Expand All Collapse All

- System
  - Configure System
    - Manipulate Users
    - Manipulate Permissions
    - Manipulate Roles
    - Generic Configuration
  - Data Center
    - Configure Data Center
  - Storage Domain
    - Configure Storage Domain
  - Cluster

OK Reset Cancel

Close

# Gluster Management



File Edit View History Bookmarks Tools Help

oVirt Engine Web Administrati... +

127.0.1.1:8080/webadmin/webadmin/WebAdmin.html#volumes

oVirt Open Virtualization Manager

Logged in user: admin@internal | Configure | Guide | About | Sign Out

Search: Volumes:

Clusters Hosts **Volumes** Users

Tree

- Expand All Collapse All
- System
  - Clusters
    - Default
      - Hosts
    - data
      - Hosts
        - server1
        - server2
      - Volumes

Create Volume Remove Start Stop

**Create Volume**

Volume Cluster: data

Name: data

Type: Distribute

Transport Type:  TCP

Bricks: [Add Bricks](#) (0 bricks selected)

**Access Protocols**

Gluster:

NFS:

CIFS:

Allow Access From: \*

(Comma separated list of IP addresses/hostnames)

OK Cancel

Bookmarks

Tags

Last Message: 2012-Aug-22, 16:55:53 Warning, Low disk space. Host server2 has less than 1000 MB of free space left on: /var/run/vdsm/.

0 Alerts Events Tasks (0)

# Create Volume – Add Bricks

The screenshot displays the oVirt Web Administration interface. The browser address bar shows the URL `127.0.1.1:8080/webadmin/webadmin/WebAdmin.html#volumes`. The page is titled "oVirt Open Virtualization Manager" and shows the user is logged in as `admin@internal`. The main navigation tabs include Clusters, Hosts, Volumes, and Users. The "Volumes" tab is active, and the "Add Bricks" dialog box is open.

The "Add Bricks" dialog box contains the following elements:

- Volume Type:** A text input field containing the word "Distribute".
- Bricks Section:**
  - Server:** A dropdown menu currently showing `10.16.159.18`, with an "Add" button to its right.
  - Brick Directory:** A text input field, with a "Clear" button to its right.
  - Table:** A table listing existing bricks with checkboxes for selection. The table has two columns: "Server" and "Brick Directory".

	Server	Brick Directory
<input type="checkbox"/>	10.16.159.228	/export/data
<input type="checkbox"/>	10.16.159.18	/export/data
  - Buttons:** "Move Up" and "Move Down" buttons are located to the right of the table.
  - Bottom Buttons:** "Remove" and "Remove All" buttons are located at the bottom left of the dialog.
  - Footer Buttons:** "OK" and "Cancel" buttons are located at the bottom right of the dialog.

At the bottom of the interface, a "Last Message" area shows a red error icon and the text: "2012-Aug-22, 17:51:03 Creation of Gluster Volume data failed." The system tray on the right includes "0 Alerts", "Events", and "Tasks (0)".

# User Portal



# Self Provisioning Portal



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

	<b>kaka</b>					CONSOLE ...
	<b>myVm1</b>					CONSOLE ...
	<b>repro</b>					CONSOLE ...
	<b>up-vm2</b>					CONSOLE ...

General | Network Interfaces | **Virtual Disks** | Snapshots | Permissions | Events | Applications | Monitor

Name:	kaka	Defined Memory:	1024 MB	Origin:	RHEV
Description:		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



**Virtual Machines:** 25%  
Defined VMs: 4  
Running VMs: 1

**Virtual CPUs:** 25%  
Defined vCPUs: 4  
Used vCPUs: 1

**Memory:** 7%  
Defined Memory: 3328MB  
Memory Usage: 256MB

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

Virtual Machine	Disks	Virtual Size	Actual Size	Snapshots
[-] <b>kaka</b>	1	10GB	1GB	1
Disk1		10GB	1GB	1
[-] <b>myVm1</b>	2	40GB	3GB	1
Disk1		10GB	2GB	1
Disk2		30GB	1GB	1
[-] <b>repro</b>	1	10GB	10GB	1
Disk1		10GB	10GB	1
[-] <b>up-vm2</b>	1	10GB	1GB	1
Disk1		10GB	1GB	1

# oVirt Reports



View Manage

## Folders

- root
  - Organizations
  - oVirt Reports
    - Reports
      - Executive**
      - Inventory
      - Service Level
      - Trend
    - Resources
    - temp
  - Themes
    - default
    - ovirt-reports-them

## Repository

Sort By: **Name** | Modified Date

Run Edit Open Copy Cut Paste Delete

<b>Active Virtual Machines by OS (BR18)</b> <a href="#">/organizations/ovirtreports/Reports/Executive/active_vms_by_os_br18</a>	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
<b>Cluster Capacity Vs Usage (BR19)</b> <a href="#">/organizations/ovirtreports/Reports/Executive/cluster_capacity_vs_usage_br19</a>	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
<b>Host OS Break Down (BR22)</b> <a href="#">/organizations/ovirtreports/Reports/Executive/host_os_break_down_BR22</a>	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
<b>Summary of Host Usage Resources (BR17)</b> <a href="#">/organizations/ovirtreports/Reports/Executive/summary_of_host_usage_resources_br17</a>	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

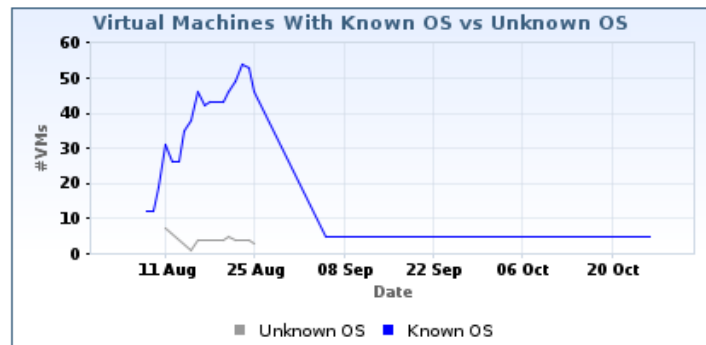
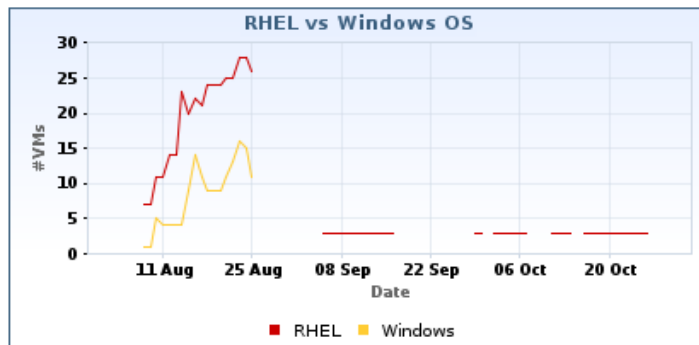
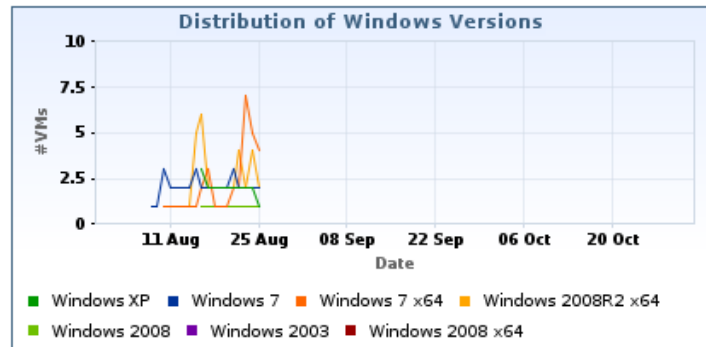
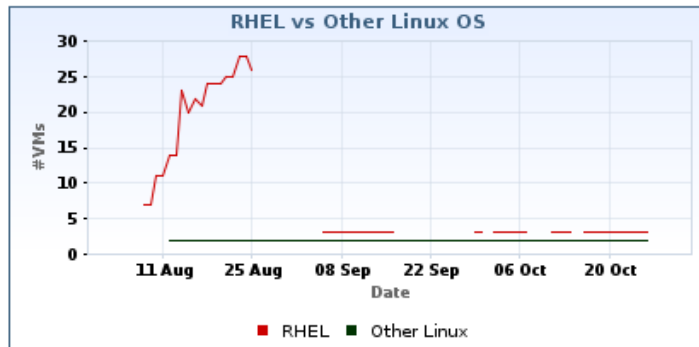


oVirt Reports

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?: 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

Apply OK Reset Cancel

# oVirt Guest Agent

- 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

# 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



```
Mozilla Firefox
File Edit View History Bookmarks Tools Help
http://10.35.1.171/rhev-api
http://10.35.1.171/rhev-api
- <api>
  <link rel="capabilities" href="/rhev-api/capabilities"/>
  <link rel="clusters" href="/rhev-api/clusters"/>
  <link rel="clusters/search" href="/rhev-api/clusters?search={query}"/>
  <link rel="datacenters" href="/rhev-api/datacenters"/>
  <link rel="datacenters/search" href="/rhev-api/datacenters?search={query}"/>
  <link rel="events" href="/rhev-api/events"/>
  <link rel="events/search" href="/rhev-api/events?search={query}"/>
  <link rel="hosts" href="/rhev-api/hosts"/>
  <link rel="hosts/search" href="/rhev-api/hosts?search={query}"/>
  <link rel="networks" href="/rhev-api/networks"/>
  <link rel="roles" href="/rhev-api/roles"/>
  <link rel="storagedomains" href="/rhev-api/storagedomains"/>
  <link rel="storagedomains/search" href="/rhev-api/storagedomains?search={query}"/>
  <link rel="tags" href="/rhev-api/tags"/>
  <link rel="templates" href="/rhev-api/templates"/>
  <link rel="templates/search" href="/rhev-api/templates?search={query}"/>
  <link rel="users" href="/rhev-api/users"/>
  <link rel="groups" href="/rhev-api/groups"/>
  <link rel="domains" href="/rhev-api/domains"/>
  <link rel="vmpools" href="/rhev-api/vmpools"/>
  <link rel="vmpools/search" href="/rhev-api/vmpools?search={query}"/>
  <link rel="vms" href="/rhev-api/vms"/>
  <link rel="vms/search" href="/rhev-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>
```

# Hosts Collection



```
Mozilla Firefox
File Edit View History Bookmarks Tools Help
http://10.35.1.171/rhev-api/hosts
http://10.35.1.1...rhev-api/hosts
- <hosts>
- <host id="15896dce-edd0-415c-a524-c9b02f278895" href="/rhev-api/hosts/15896dce-edd0-415c-a524-c9b02f278895">
  <name>nari11</name>
  - <actions>
    <link rel="install" href="/rhev-api/hosts/15896dce-edd0-415c-a524-c9b02f278895/install"/>
    <link rel="activate" href="/rhev-api/hosts/15896dce-edd0-415c-a524-c9b02f278895/activate"/>
    <link rel="fence" href="/rhev-api/hosts/15896dce-edd0-415c-a524-c9b02f278895/fence"/>
    <link rel="deactivate" href="/rhev-api/hosts/15896dce-edd0-415c-a524-c9b02f278895/deactivate"/>
    <link rel="approve" href="/rhev-api/hosts/15896dce-edd0-415c-a524-c9b02f278895/approve"/>
    <link rel="iscsilogin" href="/rhev-api/hosts/15896dce-edd0-415c-a524-c9b02f278895/iscsilogin"/>
    <link rel="iscsidiscover" href="/rhev-api/hosts/15896dce-edd0-415c-a524-c9b02f278895/iscsidiscover"/>
    <link rel="commitnetconfig" href="/rhev-api/hosts/15896dce-edd0-415c-a524-c9b02f278895/commitnetconfig"/>
  </actions>
  <link rel="storage" href="/rhev-api/hosts/15896dce-edd0-415c-a524-c9b02f278895/storage"/>
  <link rel="nics" href="/rhev-api/hosts/15896dce-edd0-415c-a524-c9b02f278895/nics"/>
  <link rel="tags" href="/rhev-api/hosts/15896dce-edd0-415c-a524-c9b02f278895/tags"/>
  <link rel="permissions" href="/rhev-api/hosts/15896dce-edd0-415c-a524-c9b02f278895/permissions"/>
  <link rel="statistics" href="/rhev-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="/rhev-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>
  <target/>
</iscsi>
</host>
Done
```

# Host networks collection



Firefox browser window showing the URL `http://10.35.1.171/rhev-api/hosts/15896dce-edd0-415c-a524-c9b02f278895/nics`. The page content is an XML document tree representing host network information.

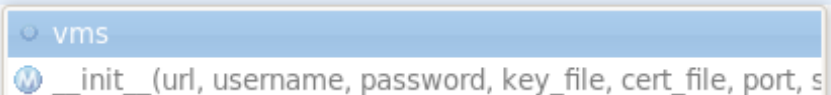
```
-<host_nics>
- <host_nic id="dbb39d06-3aef-468c-83e6-88eae0a3f346" href="/rhev-api/hosts/15896dce-edd0-415c-a524-c9b02f278895/nics/dbb39d06-3aef-468c-83e6-88eae0a3f346">
  <name>eth0</name>
  -<actions>
    <link rel="attach" href="/rhev-api/hosts/15896dce-edd0-415c-a524-c9b02f278895/nics/dbb39d06-3aef-468c-83e6-88eae0a3f346/attach"/>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

Done

- Creating the proxy
- Listing all collections
- 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.

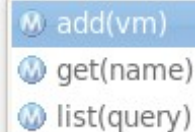
```
#create proxy
api = API(url='http://localhost:8080', username='user@domain', password='password')
```

```
api.
```



```
o vms
M __init__(url, username, password, key_file, cert_file, port, s
```

```
api.vms.
```



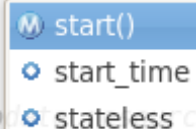
```
M add(vm)
M get(name)
M list(query)
```

```
#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
```



```
M start()
start_time
stateless ce
```

## 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        storedomain  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          os-type
cluster-name       high_availability-priority        placement_policy-affinity
cpu-topology-cores memory                             stateless
cpu-topology-sockets name                               template-id
custom_properties-custom_property--LIST origin                             template-name
description         os-boot-dev                       timezone
display-monitors   os-cmdline                         type
display-type       os-initRd                           usb-enabled
domain-name        os-kernel
[oVirt shell (connected)]#
[oVirt shell (connected)]#
[oVirt shell (connected)]#
[oVirt shell (connected)]#
[oVirt shell (connected)]# create nic
host vm
```

# CLI - Smart Help



```
[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
```

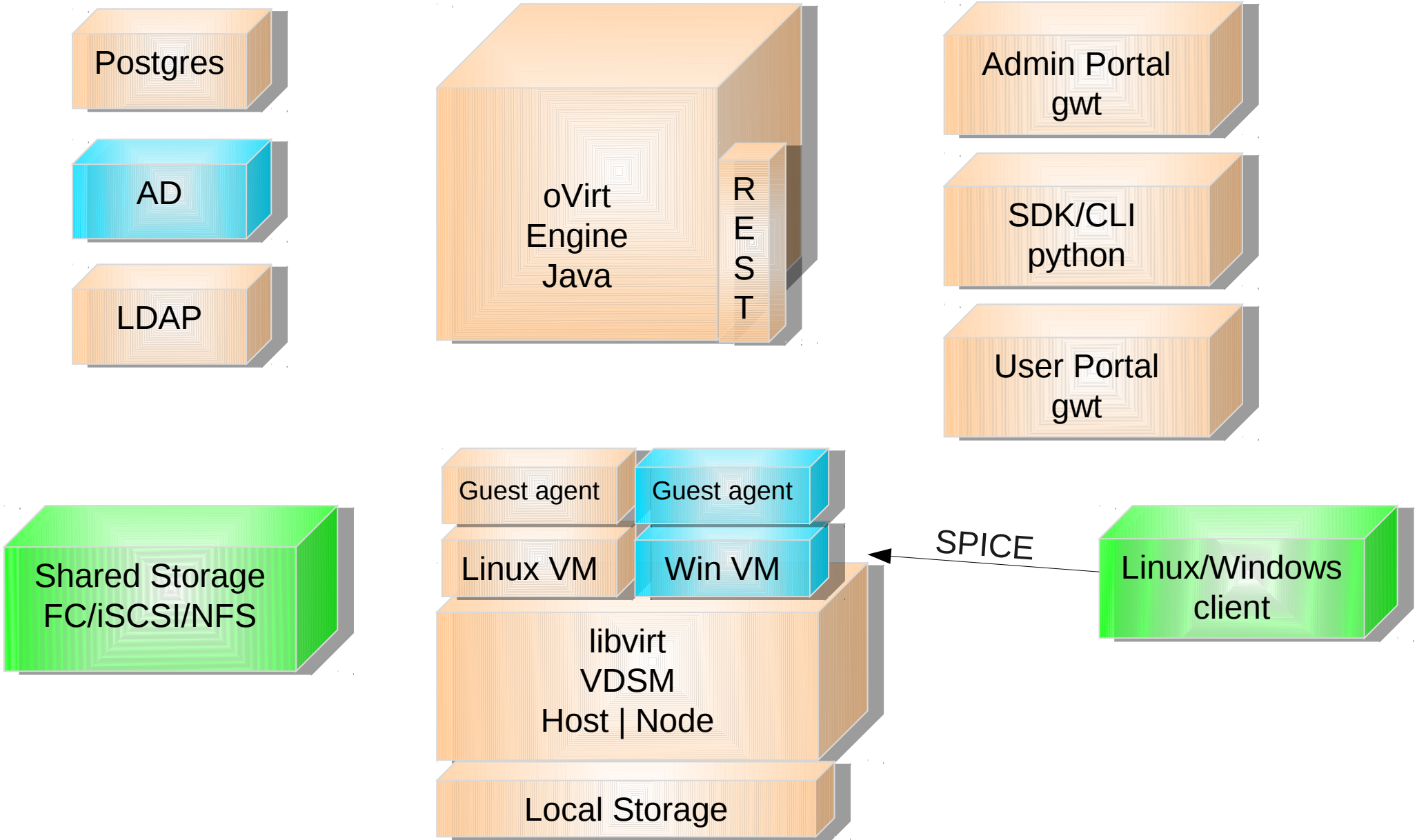
id	name	description
80eed02c-ac7d-11e0-b702-0bf21e6d33af	b	
7073b1ac-ef46-11e0-aa7c-d3e6f6b5731d	bb	
82b1c018-ac7d-11e0-ac42-5b8d8dcd7c92	c	
63bc09b0-8b8b-11e0-bdc2-4356942887b3	Default_iscsi	
99408929-82cf-4dc7-a532-9d998063fa95	Default_nfs	The default server cluster
ffb2d112-8cf0-11e0-b34b-7f61455e6a71	Test_iscsi	
ada1672a-8cf1-11e0-9d3e-b75c5a33ec19	Test_nfs	
ad9bd996-a893-11e0-b174-e3232e67a091	Test_vlans	

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

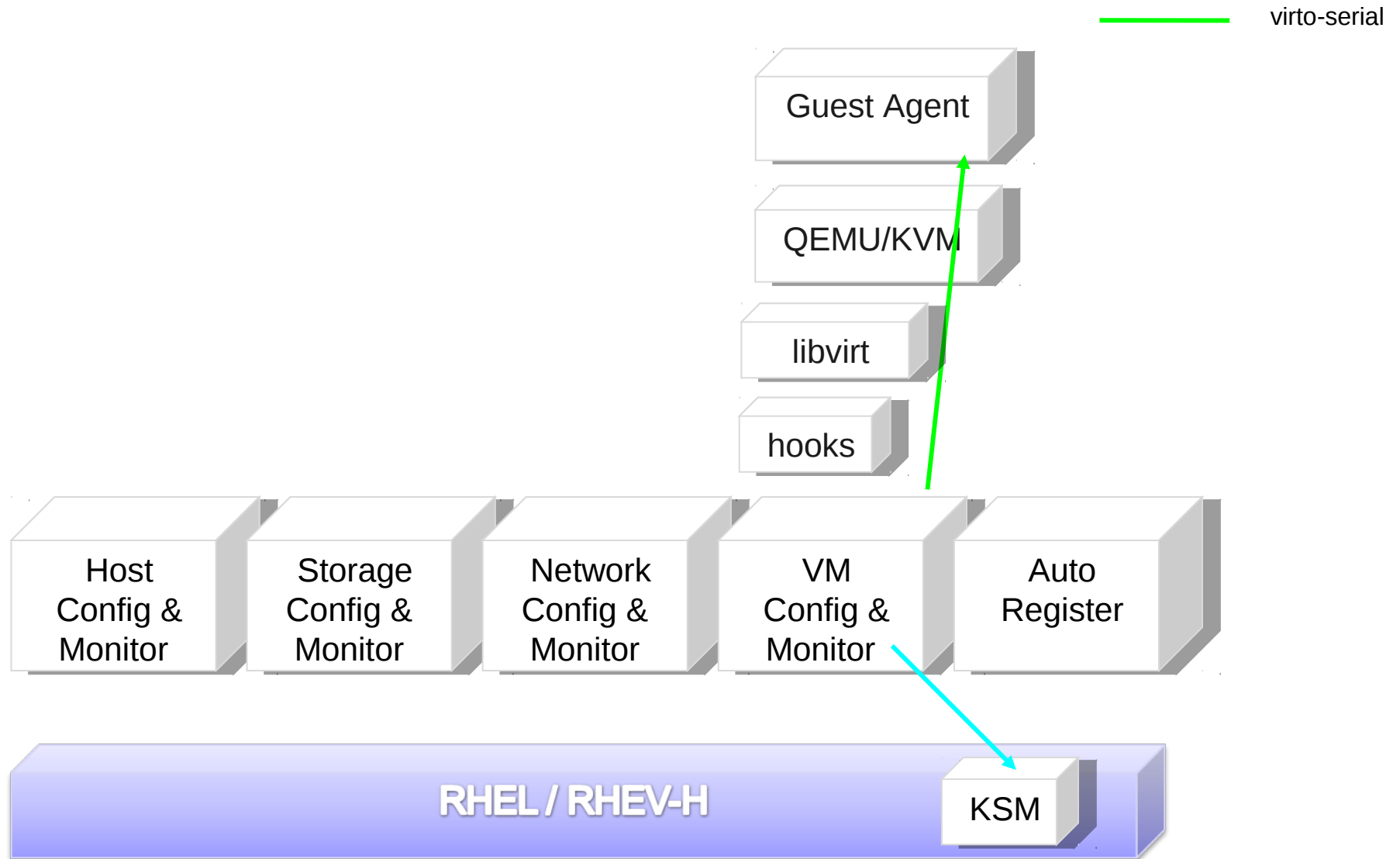
```
(oVirt cli) > list clusters
```

id	name	description
80eed02c-ac7d-11e0-b702-0bf21e6d33af	b	
82b1c018-ac7d-11e0-ac42-5b8d8dcd7c92	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 High Level Architecture



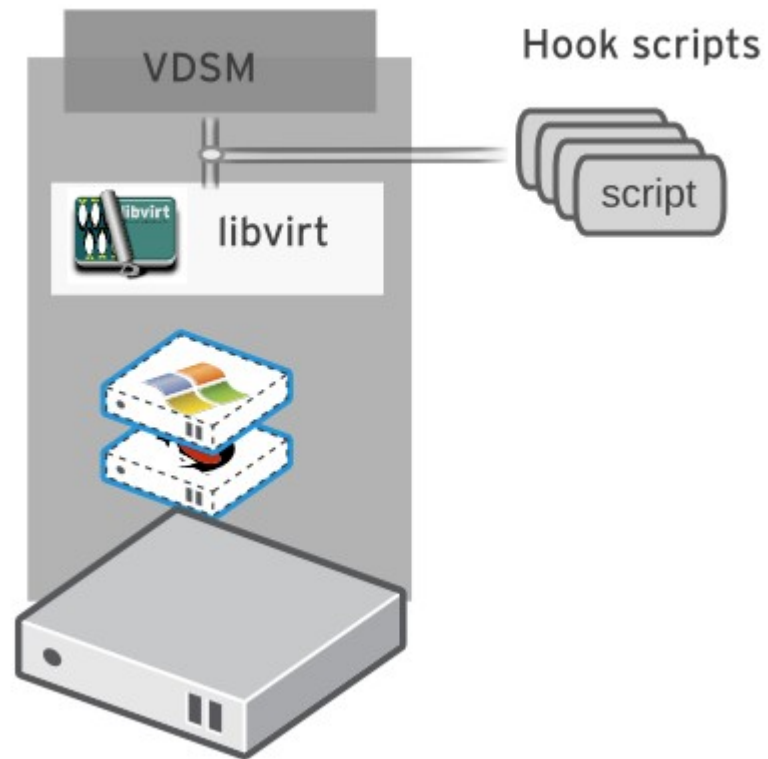
# oVirt Host Agent - VDSM



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



# 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

Name	Host
demo-vm	zeus02
demo-vm-2	
linux-vm	
nw-filter-vm-1	
nwfilter-vm-32-rhel-6: zeus02	
rhel63-vm	zeus02
vm-1-dc-30-cluster-3	
vm-del-net-2	
vm-del-net-bug	
vm-tempalte-test-1	
vm-tempalte-test-2	
vm-tempalte-test-3	
vm-tempalte-test-4	
win2008	

### New Server Virtual Machine

- General
- Initial Run
- Console
- Host
- High Availability
- Resource Allocation
- Boot Options
- Custom Properties**

sndbuf  + -

sap\_agent  + -

vhost  + -

Please select a key... + -

OK Cancel

Status	Uptime	Logged-in User
Up	2 days	
Down		
Down		
Down		
Up	2 h	
Up	2 h	
Down		
Down		
Down		
Down		
Down		
Down		
Down		
Down		
Down		

**General** Network Interfaces

Name: nwfilter-vm-1

Description:

Template: Blank

Operating System: Red Hat Ent

Default Display Type: Spice

Priority: Low

Origin: oVirt

Run On: Any Host in Cluster

Custom Properties: Not-Configured

Cluster Compatibility Version: 3.2

# 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_dehibernate
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_dehibernate
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]#
```

Host Hooks				
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 vdsm 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)
```

- 02/2012 – oVirt 3.0 released
- 08/2012 – oVirt 3.1 released
- 12/2012 – oVirt 3.2 planned
  
- oVirt Workshops
  - Barcelona – 7-9 November 2012
    - Wednesday – oVirt for Users
    - Thursday – oVirt for Integrators
    - Friday – oVirt for Developers
  - California - 22-24 January 2013

# 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

oVirt

**THANK YOU !**

<http://www.ovirt.org>