Introduction to oVirt

James Rankin

What is oVirt?

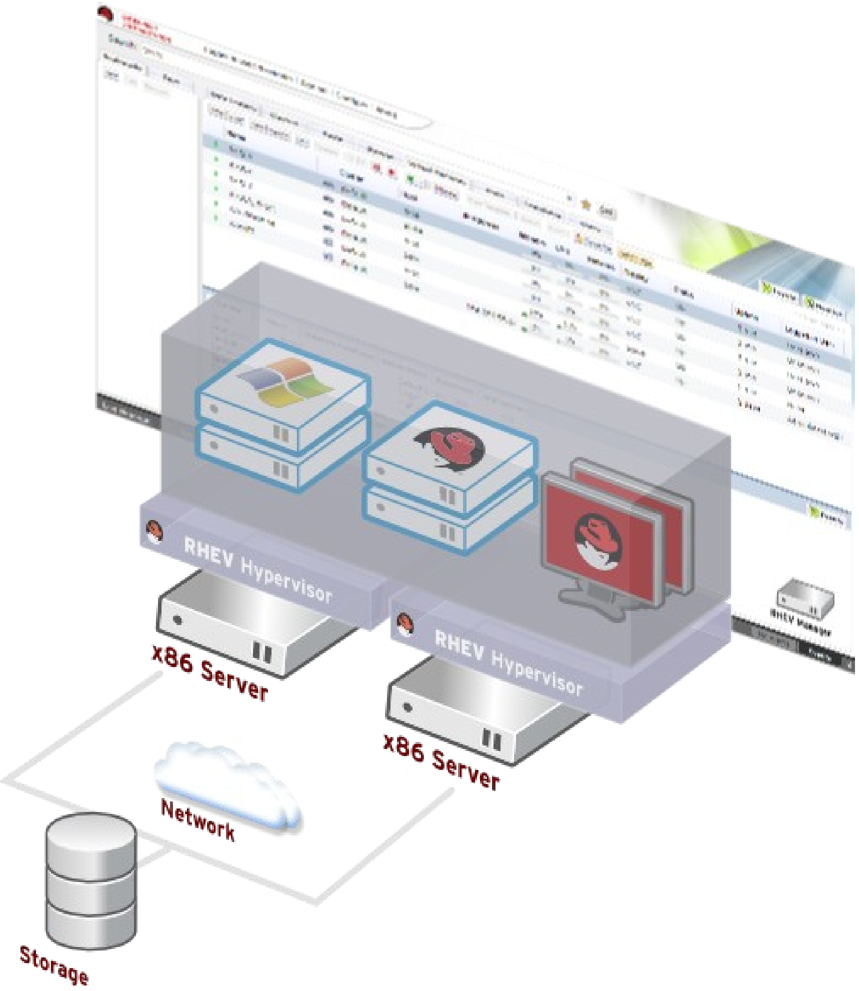
Large scale, centralized management for server and desktop virtualization

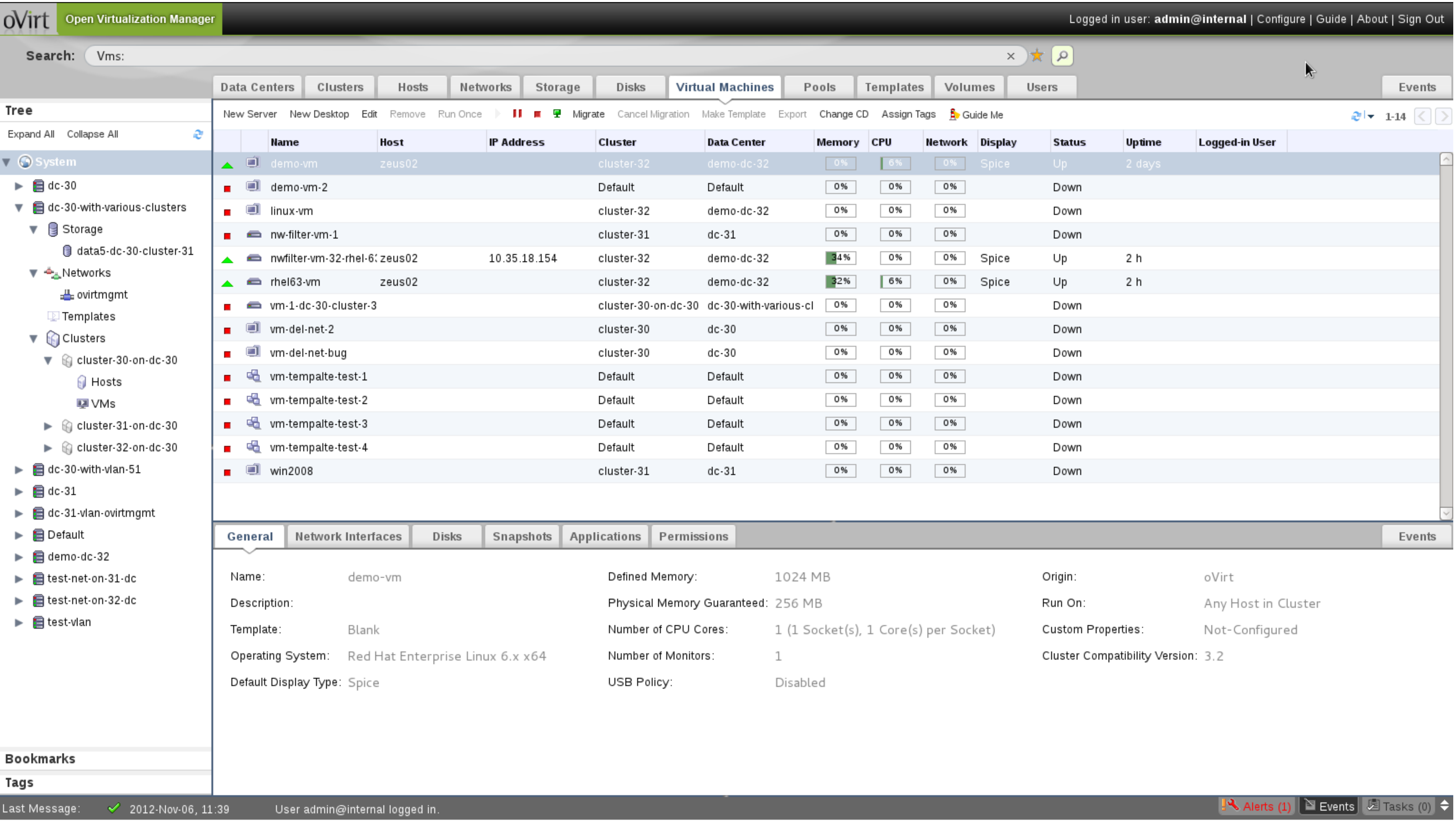
Based on leading performance, scalability and security infrastructure technologies

Provide an open source alternative to vCenter/vSphere

Two key components

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


RHEV Hypervisor
RHEV Hypervisor
x86 Server
x86 Server
RHEV Manager
Network
Storage


oVirt
Open Virtualization Manager
Logged in user: admin@internal | Configure | Guide | About | Sign Out
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
Bookmarks
Tags
General
Network Interfaces
Disks
Snapshots
Applications
Permissions
Events
Alerts (1)
Events
Tasks (0)

	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		

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

Last Message: ✓ 2012-Nov-06, 11:39 User admin@internal logged in.

Virtualization Management the oVirt way

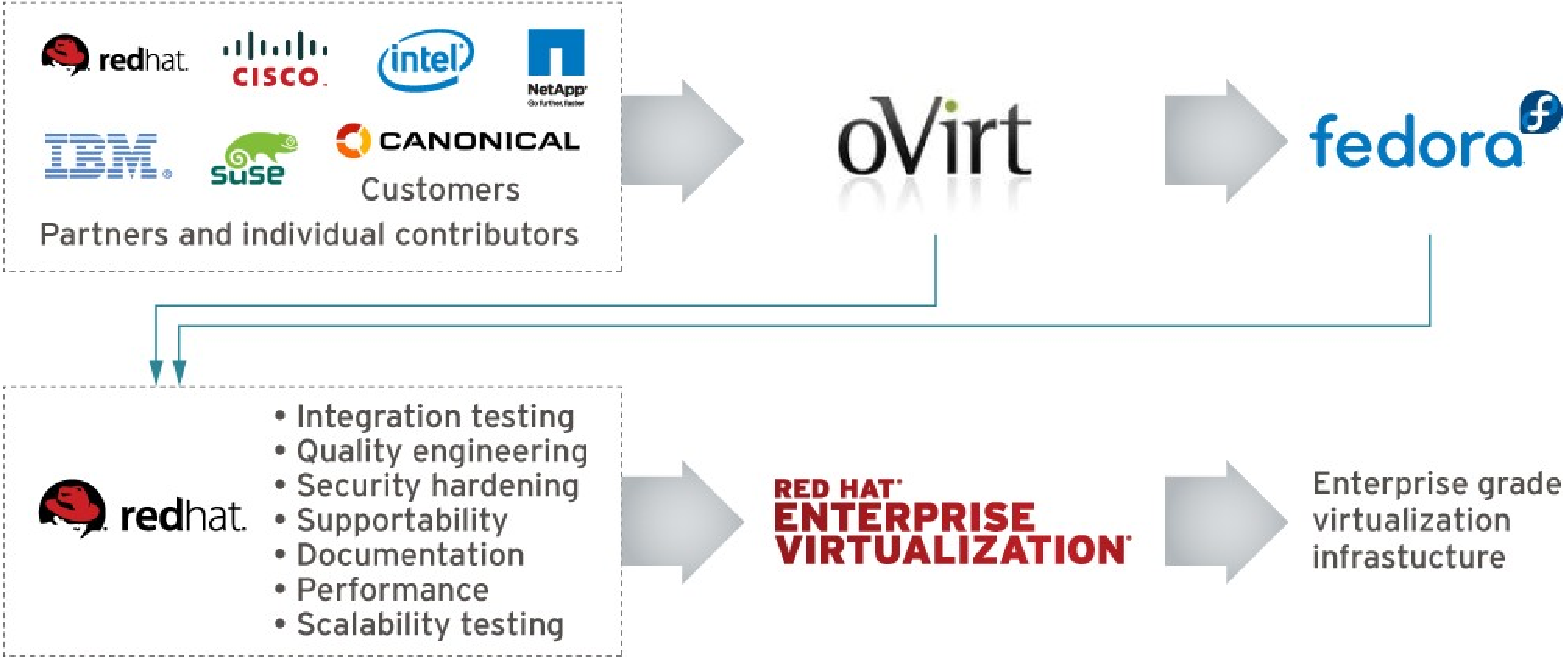
Goals of the oVirt project

- 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


redhat.
CISCO
intel
NetApp
IBM
SUSE
CANONICAL
oVirt
fedora
redhat.
RED HAT ENTERPRISE VIRTUALIZATION

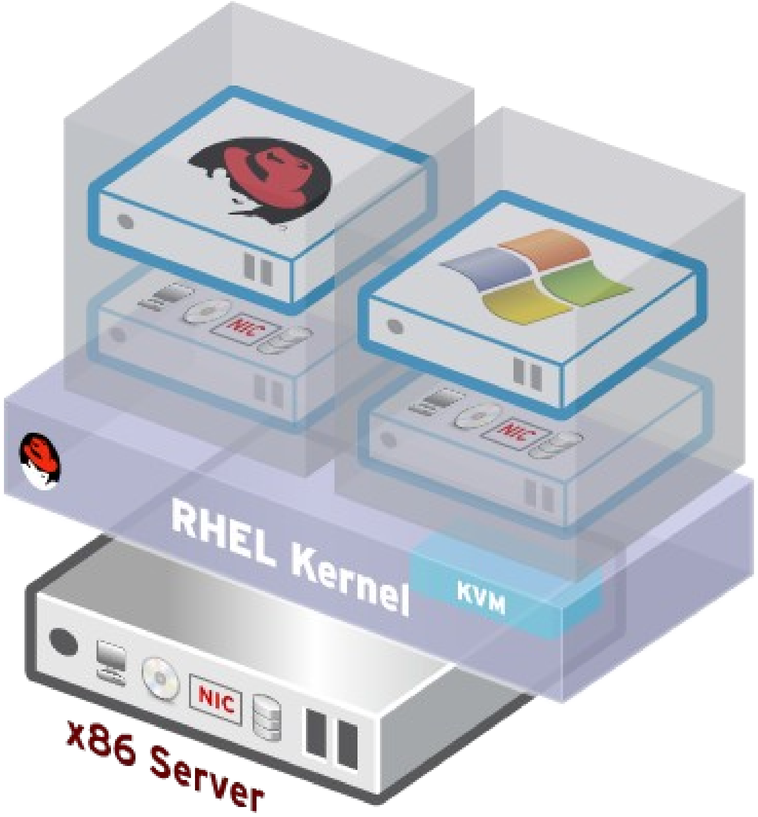
Customers

Partners and individual contributors

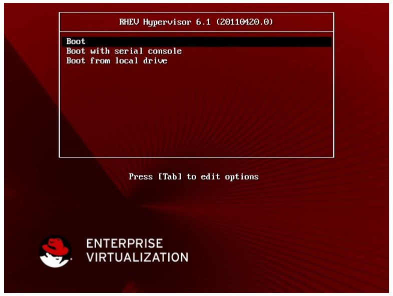
- Integration testing
- Quality engineering
- Security hardening
- Supportability
- Documentation
- Performance
- Scalability testing

Enterprise grade virtualization infrastucture

oVirt Node



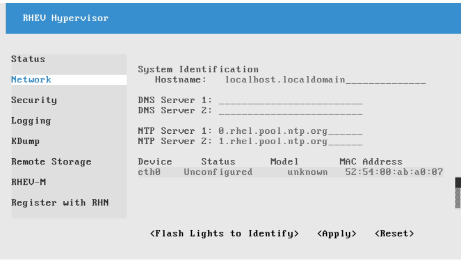
- Standalone hypervisor
  - Small footprint ~ 170MB
    - Customized 'spin' of Fedora + KVM
    - 'Just enough' Fedora to run virtual machines
    - Runs on all RHEL hardware with Intel VT/AMD-V CPUs
  - Easy to install, configure and upgrade
    - PXE boot, USB boot, CD or Hard drive



```
RHEV Hypervisor 6.1 (20110420.0)

Boot
Boot with serial console
Boot from local drive

Press [Tab] to edit options
```



```
RHEV Hypervisor

Status
Network              System Identification
                        Hostname:   localhost.localdomain______________
Security
                     DNS Server 1: _________________________
Logging              DNS Server 2: _________________________

KDump                NTP Server 1: 0.rhel.pool.ntp.org______
                     NTP Server 2: 1.rhel.pool.ntp.org______
Remote Storage
                     Device     Status      Model      MAC Address
RHEV-M               eth0    Unconfigured     unknown   52:54:00:ab:a0:07

Register with RHN

                       <Flash Lights to Identify>   <Apply>   <Reset>
```

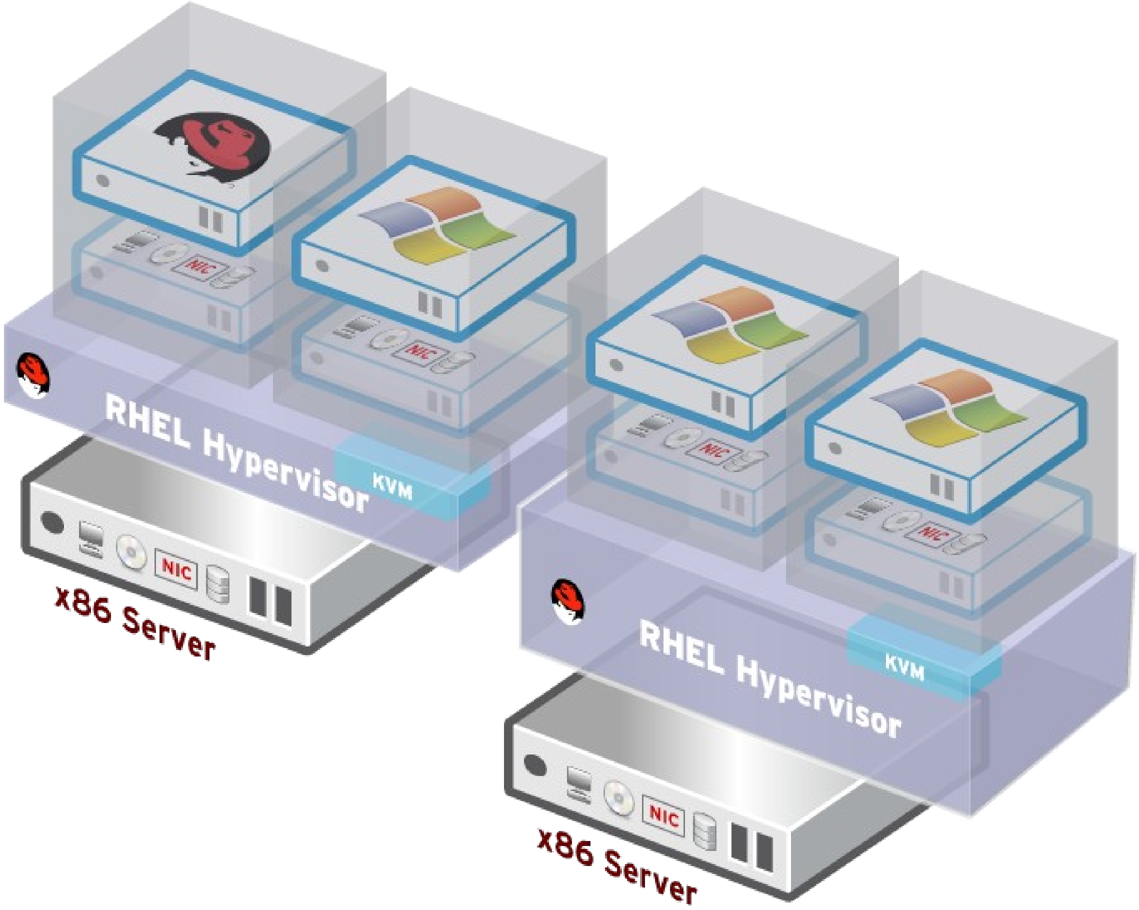
oVirt Node vs. Full Host

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


NIC
NIC
RHEL Hypervisor
KVM
NIC
x86 Server
NIC
NIC
RHEL Hypervisor
KVM
NIC
x86 Server

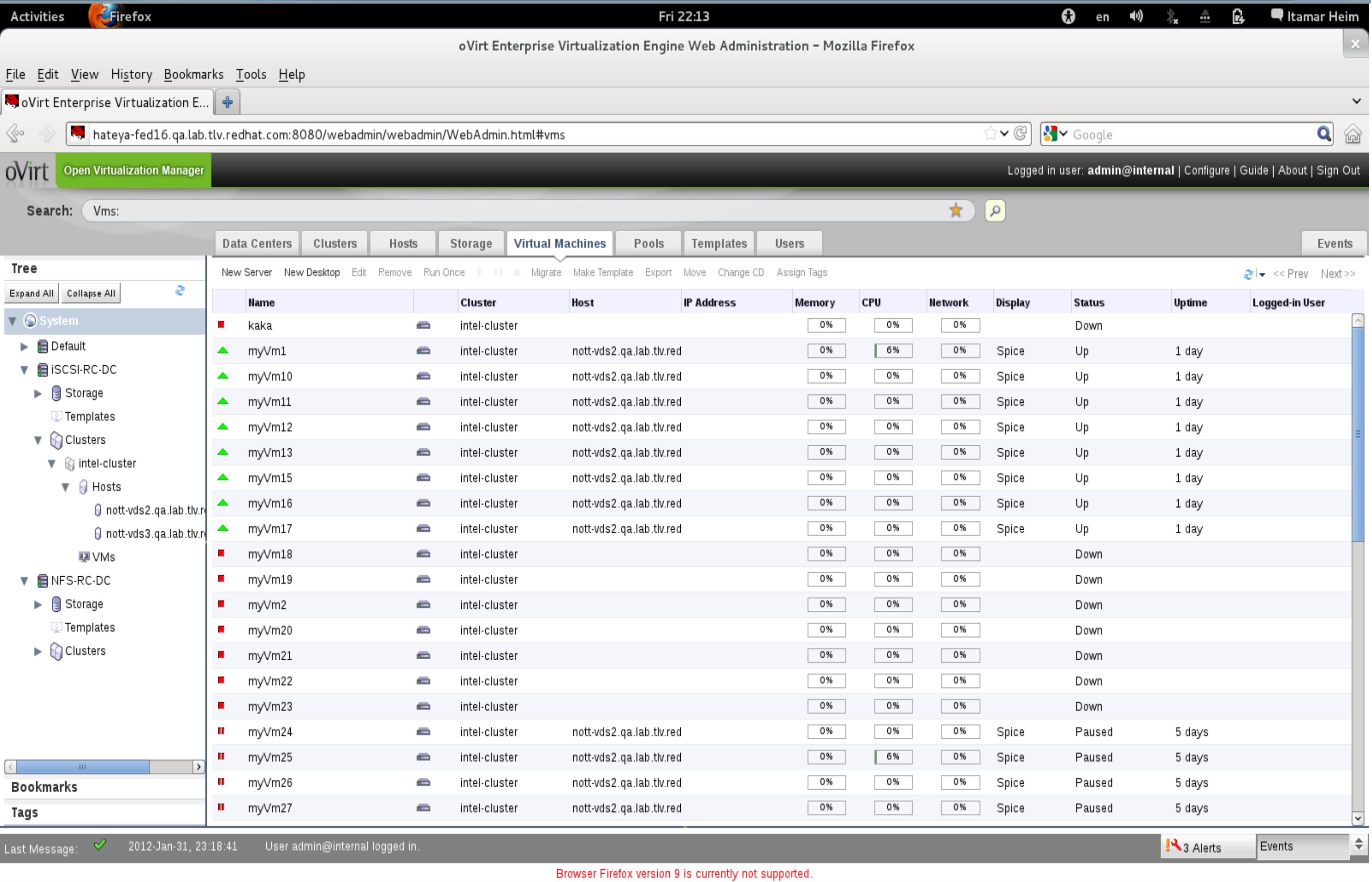
Management Features

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

Administration Console

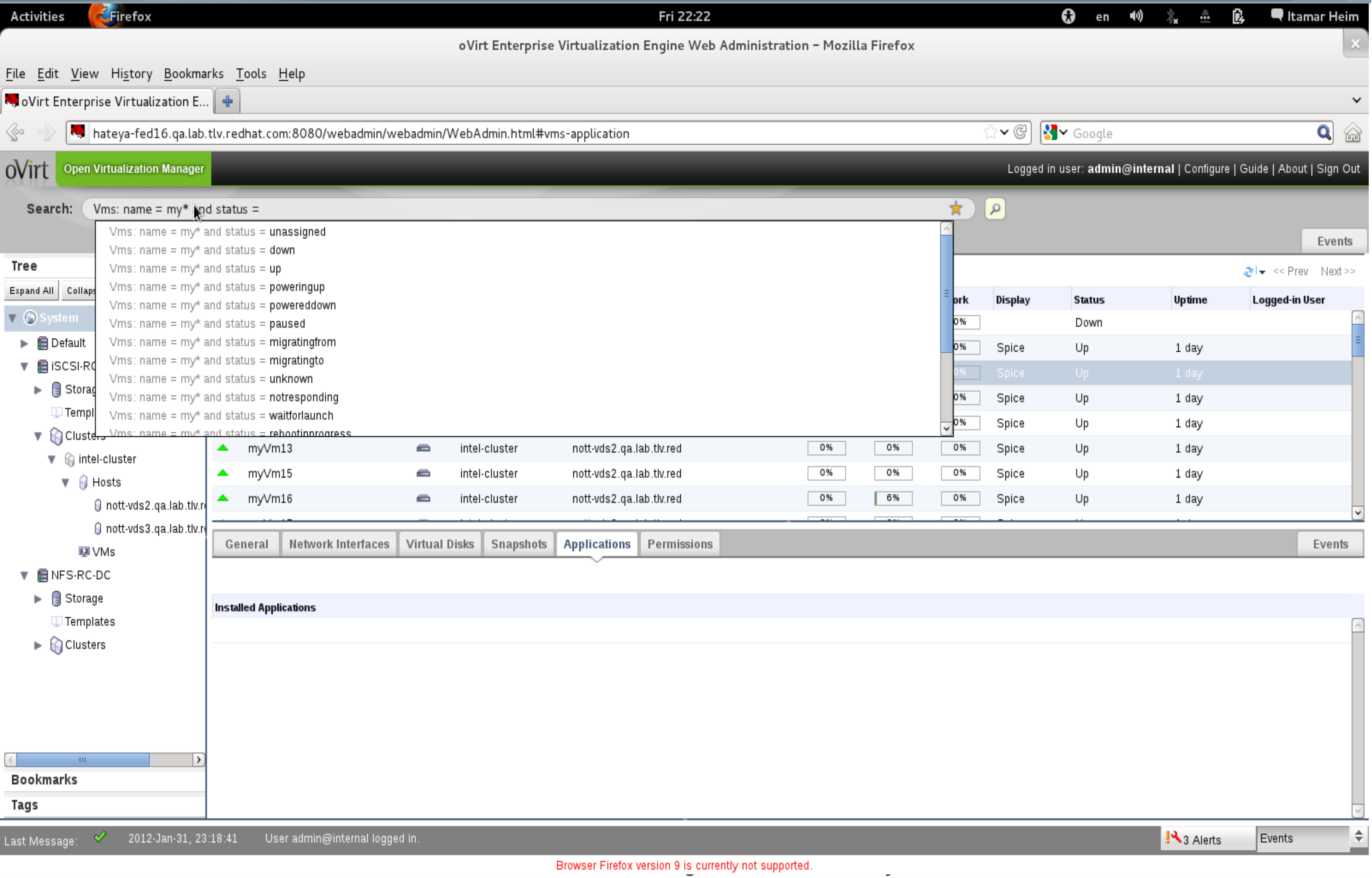

Activities
Firefox
Fri 22:13
en
Itamar Heim
oVirt Enterprise Virtualization Engine Web Administration - Mozilla Firefox
File Edit View History Bookmarks Tools Help
oVirt Enterprise Virtualization E...
hateya-fed16.qa.lab.tlv.redhat.com:8080/webadmin/webadmin/WebAdmin.html#vms
Google
oVirt
Open Virtualization Manager
Logged in user: admin@internal | Configure | Guide | About | Sign Out
Search:
Vms:
Data Centers
Clusters
Hosts
Storage
Virtual Machines
Pools
Templates
Users
Events
Tree
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 >>
3 Alerts
Events

	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	

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

Browser Firefox version 9 is currently not supported.

Search Auto Complete


Activities
Firefox
Fri 22:22
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
Google
oVirt
Open Virtualization Manager
Logged in user: admin@internal | Configure | Guide | About | Sign Out
Events
Tree
Expand All
Collaps
System
Default
iSCSI-RC
Storag
Templ
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
<< Prev
Next >>
General
Network Interfaces
Virtual Disks
Snapshots
Applications
Permissions
Events
3 Alerts
Events

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

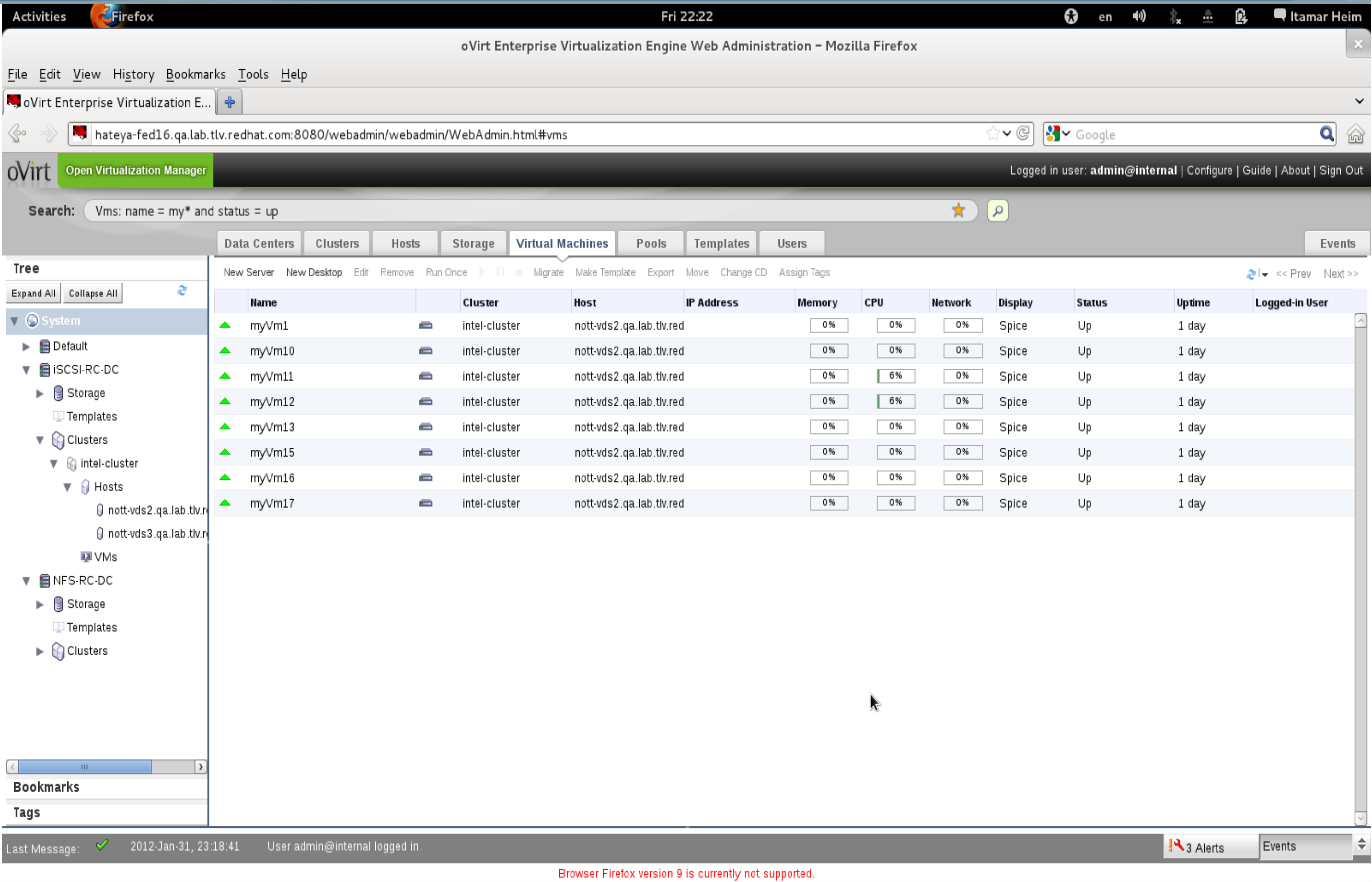
						rk	Display	Status	Uptime	Logged-in User
						0%		Down		
						0%	Spice	Up	1 day	
						0%	Spice	Up	1 day	
						0%	Spice	Up	1 day	
						0%	Spice	Up	1 day	
myVm13		intel-cluster	nott-vds2.qa.lab.tlv.red	0%	0%	0%	Spice	Up	1 day	
myVm15		intel-cluster	nott-vds2.qa.lab.tlv.red	0%	0%	0%	Spice	Up	1 day	
myVm16		intel-cluster	nott-vds2.qa.lab.tlv.red	0%	6%	0%	Spice	Up	1 day	

Installed Applications

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

Browser Firefox version 9 is currently not supported.

Search Results


Activities
Firefox
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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
Google
oVirt
Open Virtualization Manager
Logged in user: admin@internal | Configure | Guide | About | Sign Out
Data Centers
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Storage
Virtual Machines
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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 >>
3 Alerts
Events

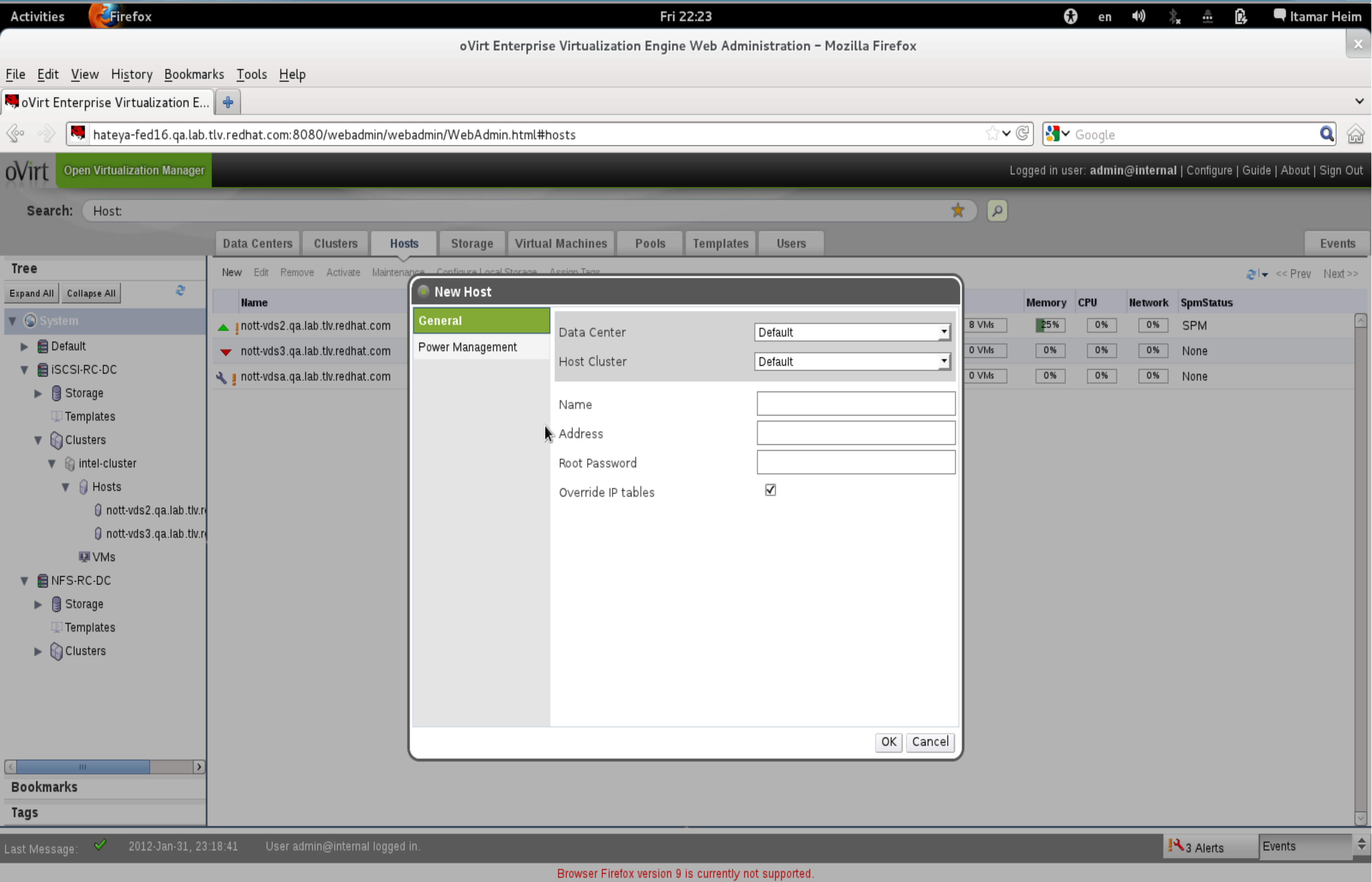
Search: Vms: name = my* and status = up

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	

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

Browser Firefox version 9 is currently not supported.

Add Host As Simple As


Activities
Firefox
Fri 22:23
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#hosts
Open Virtualization Manager
Logged in user: admin@internal | Configure | Guide | About | Sign Out
Data Centers
Clusters
Hosts
Storage
Virtual Machines
Pools
Templates
Users
Events
New
Edit
Remove
Activate
Maintenance
Configure Local Storage
Assign Tags
Tree
Expand All
Collapse All
Bookmarks
Tags
OK
Cancel
General
Power Management

Search: Host:

Name		Memory	CPU	Network	SpmStatus
nott-vds2.qa.lab.tlv.redhat.com	8 VMs	25%	0%	0%	SPM
nott-vds3.qa.lab.tlv.redhat.com	0 VMs	0%	0%	0%	None
nott-vdsa.qa.lab.tlv.redhat.com	0 VMs	0%	0%	0%	None

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 Host

Data Center: Default

Host Cluster: Default

Name:

Address:

Root Password:

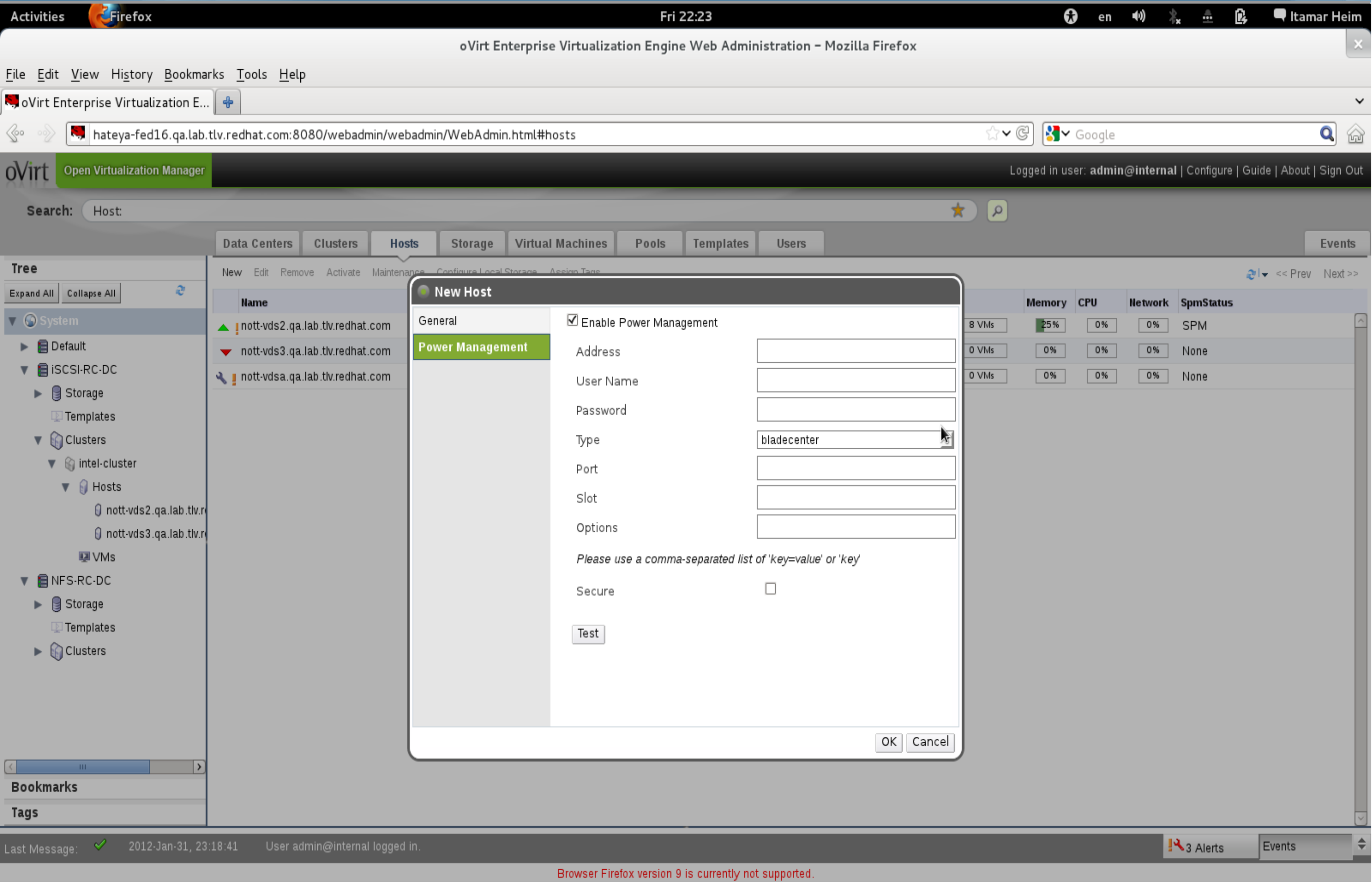
Override IP tables ☑

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

3 Alerts

Browser Firefox version 9 is currently not supported.

Power Management


Activities
Firefox
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File
Edit
View
History
Bookmarks
Tools
Help
oVirt Enterprise Virtualization E...
hateya-fed16.qa.lab.tlv.redhat.com:8080/webadmin/webadmin/WebAdmin.html#hosts
Google
oVirt
Open Virtualization Manager
Logged in user: admin@internal | Configure | Guide | About | Sign Out
Search:
Host:
Data Centers
Clusters
Hosts
Storage
Virtual Machines
Pools
Templates
Users
Events
Tree
Expand All
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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
<< Prev
Next >>
General
Power Management
Test
OK
Cancel
3 Alerts
Events

Name		Memory	CPU	Network	SpmStatus
nott-vds2.qa.lab.tlv.redhat.com	8 VMs	25%	0%	0%	SPM
nott-vds3.qa.lab.tlv.redhat.com	0 VMs	0%	0%	0%	None
nott-vdsa.qa.lab.tlv.redhat.com	0 VMs	0%	0%	0%	None

New Host

☑ Enable Power Management

Address:
User Name:
Password:
Type: bladecenter
Port:
Slot:
Options:

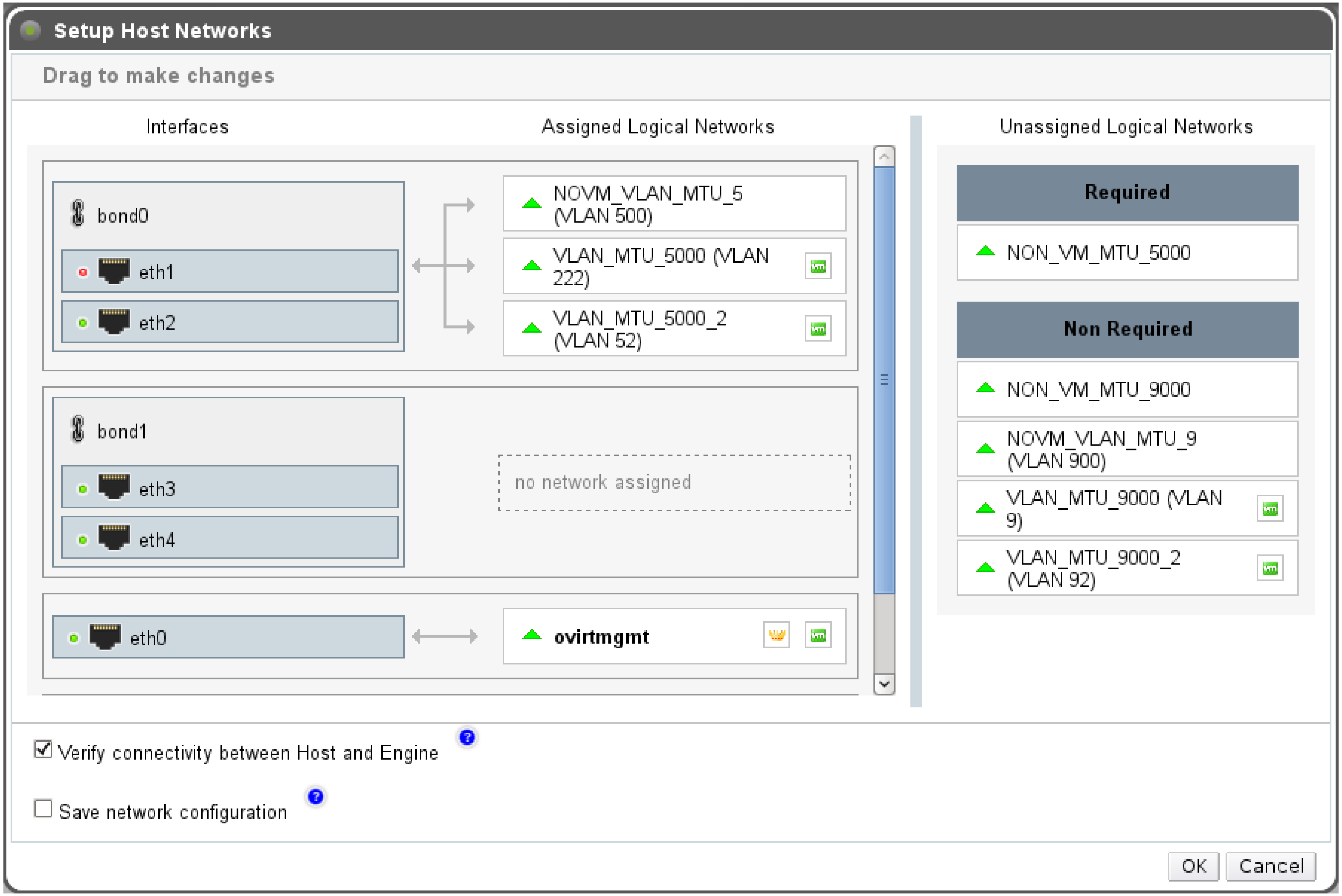
Please use a comma-separated list of 'key=value' or 'key'

Secure ☐

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

Browser Firefox version 9 is currently not supported.

Setup Networks: Dialog



Setup Host Networks

Drag to make changes

Interfaces

Assigned Logical Networks

Unassigned Logical Networks

- bond0: eth1, eth2
  - NOVM_VLAN_MTU_5 (VLAN 500)
  - VLAN_MTU_5000 (VLAN 222)
  - VLAN_MTU_5000_2 (VLAN 52)
- bond1: eth3, eth4
  - no network assigned
- eth0
  - **ovirtmgmt**

Required

- NON_VM_MTU_5000

Non Required

- NON_VM_MTU_9000
- NOVM_VLAN_MTU_9 (VLAN 900)
- VLAN_MTU_9000 (VLAN 9)
- VLAN_MTU_9000_2 (VLAN 92)

☑ Verify connectivity between Host and Engine

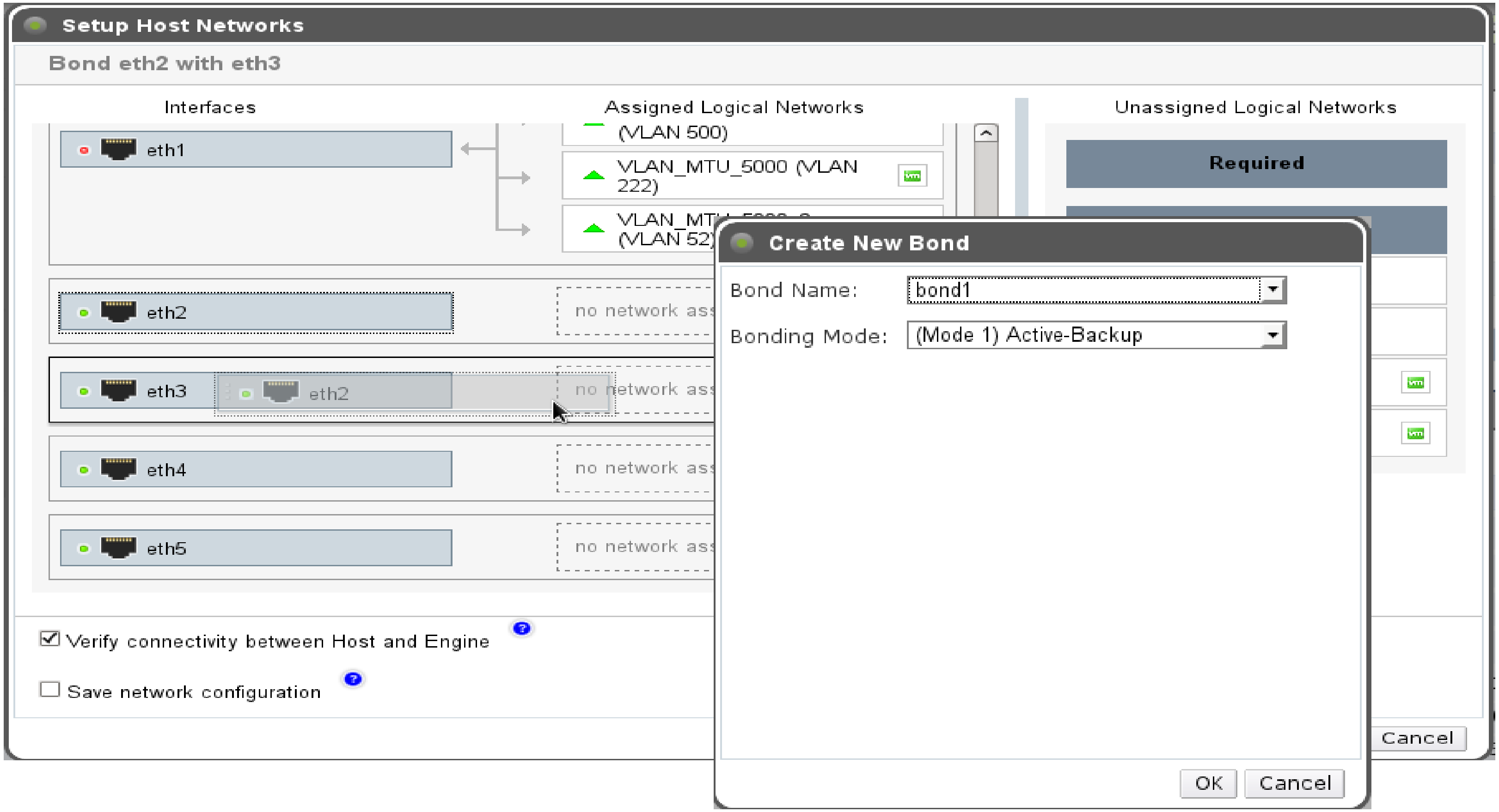
☐ Save network configuration

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 Host Networks

Bond eth2 with eth3

Interfaces
Assigned Logical Networks
Unassigned Logical Networks
Required
eth1
(VLAN 500)
VLAN_MTU_5000 (VLAN 222)
VLAN_MTU_5000_2 (VLAN 52)
eth2
eth3
eth2
eth4
eth5
no network ass
vm
Cancel

☑ Verify connectivity between Host and Engine

☐ Save network configuration

Create New Bond

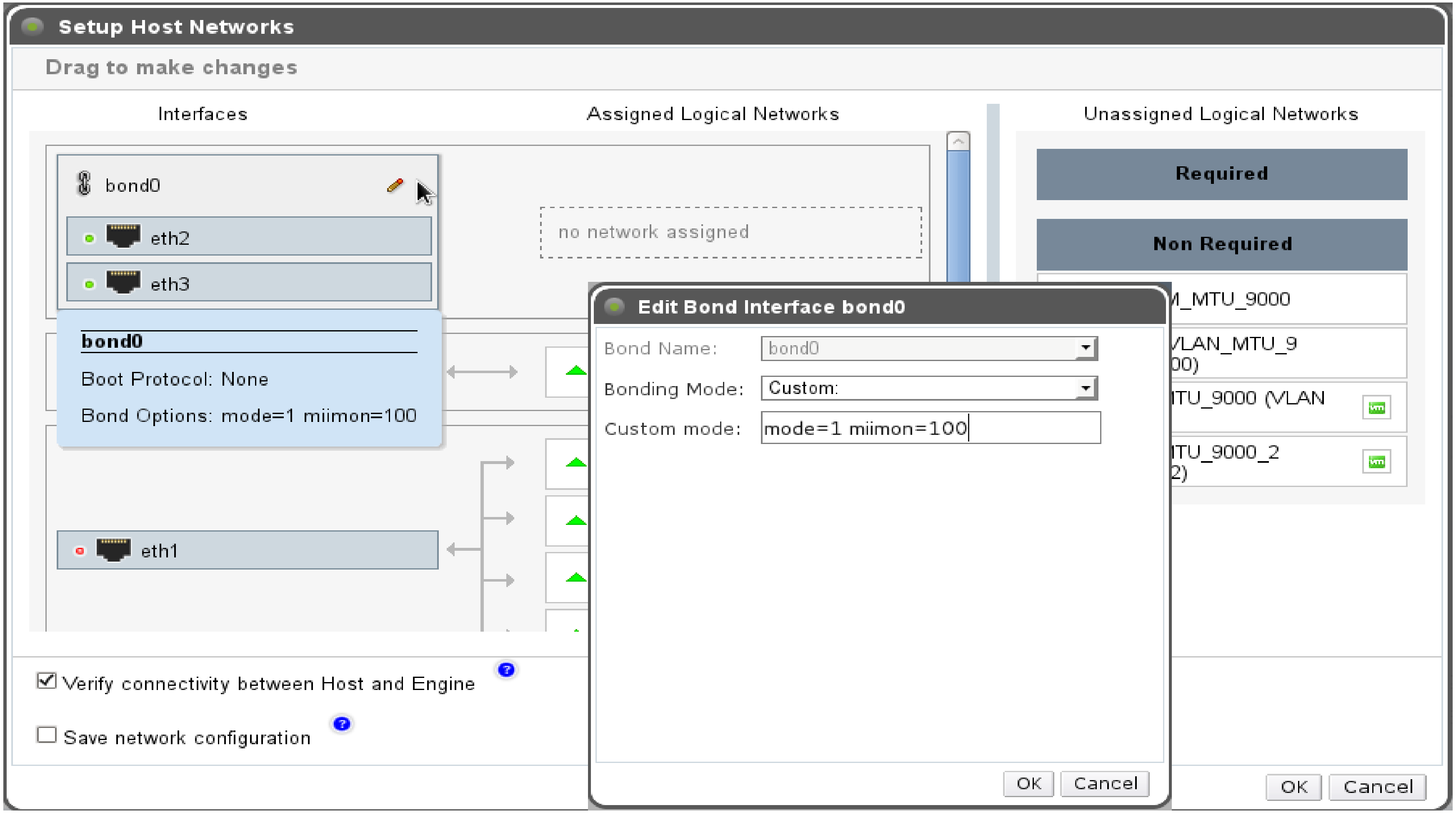
Bond Name: bond1

Bonding Mode: (Mode 1) Active-Backup

OK
Cancel

Setup Networks: Edit Bond

- Click the pencil icon to edit bond configuration



Setup Host Networks
Drag to make changes
Interfaces
Assigned Logical Networks
Unassigned Logical Networks
bond0
eth2
eth3
eth1
no network assigned
Required
Non Required
M_MTU_9000
VLAN_MTU_9
00)
TU_9000 (VLAN
TU_9000_2
2)
Edit Bond Interface bond0
OK
Cancel
OK
Cancel

bond0

Boot Protocol: None

Bond Options: mode=1 miimon=100

Bond Name: bond0

Bonding Mode: Custom:

Custom mode: mode=1 miimon=100

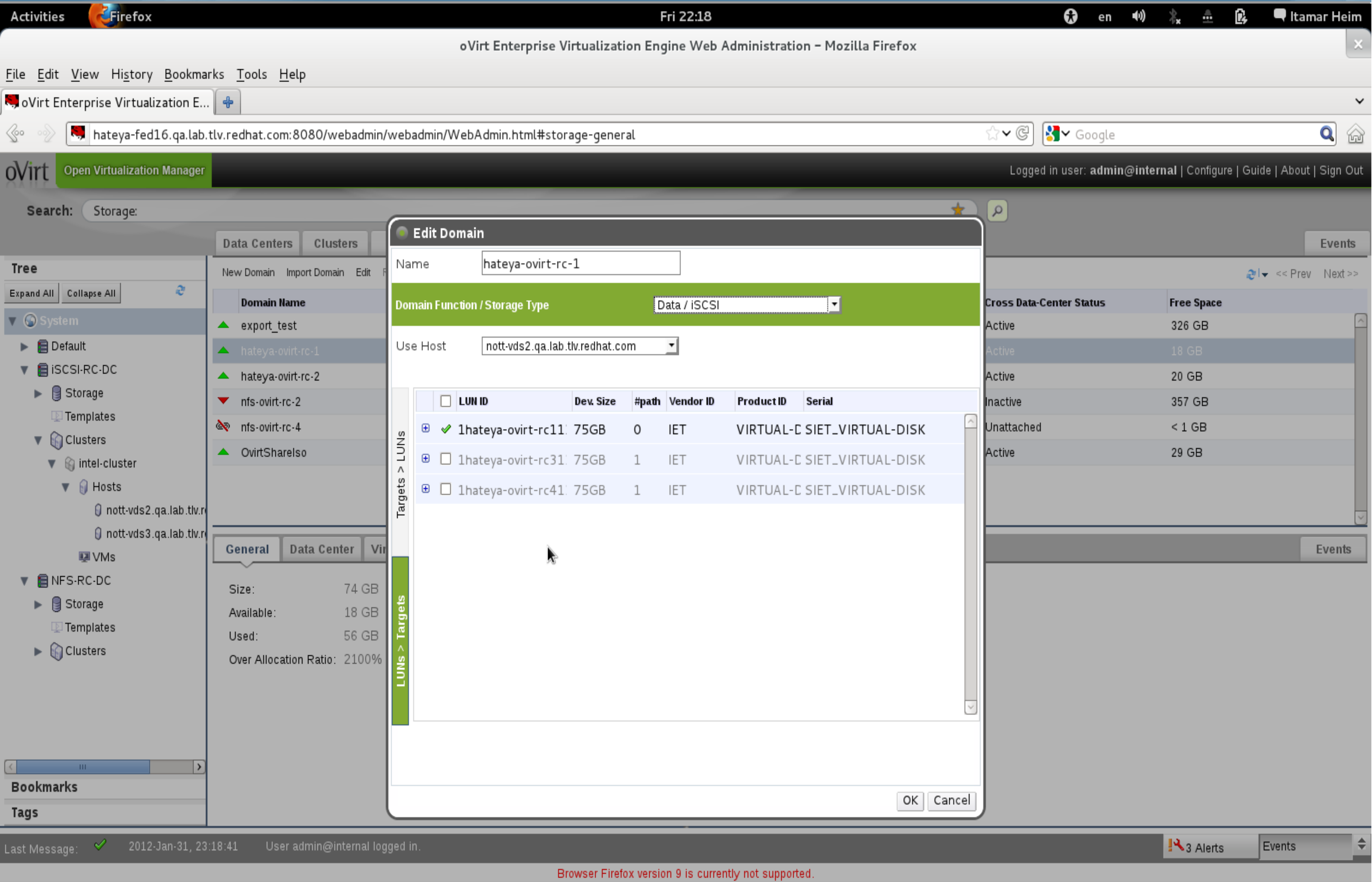
☑ Verify connectivity between Host and Engine

☐ Save network configuration

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
File
Edit
View
History
Bookmarks
Tools
Help
oVirt Enterprise Virtualization E...
Open Virtualization Manager
Configure | Guide | About | Sign Out
Data Centers
Clusters
Events
Tree
Expand All
Collapse All
New Domain
Import Domain
Edit
<< Prev
Next >>
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
General
Data Center
Vi
Targets > LUNs
LUNs > Targets
OK
Cancel
3 Alerts
Events

oVirt Enterprise Virtualization Engine Web Administration – Mozilla Firefox

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

Logged in user: **admin@internal**

Search: Storage:

Domain Name	Cross Data-Center Status	Free Space
export_test	Active	326 GB
hateya-ovirt-rc-1	Active	18 GB
hateya-ovirt-rc-2	Active	20 GB
nfs-ovirt-rc-2	Inactive	357 GB
nfs-ovirt-rc-4	Unattached	< 1 GB
OvirtShareIso	Active	29 GB

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

Edit Domain

Name: hateya-ovirt-rc-1

Domain Function / Storage Type: Data / iSCSI

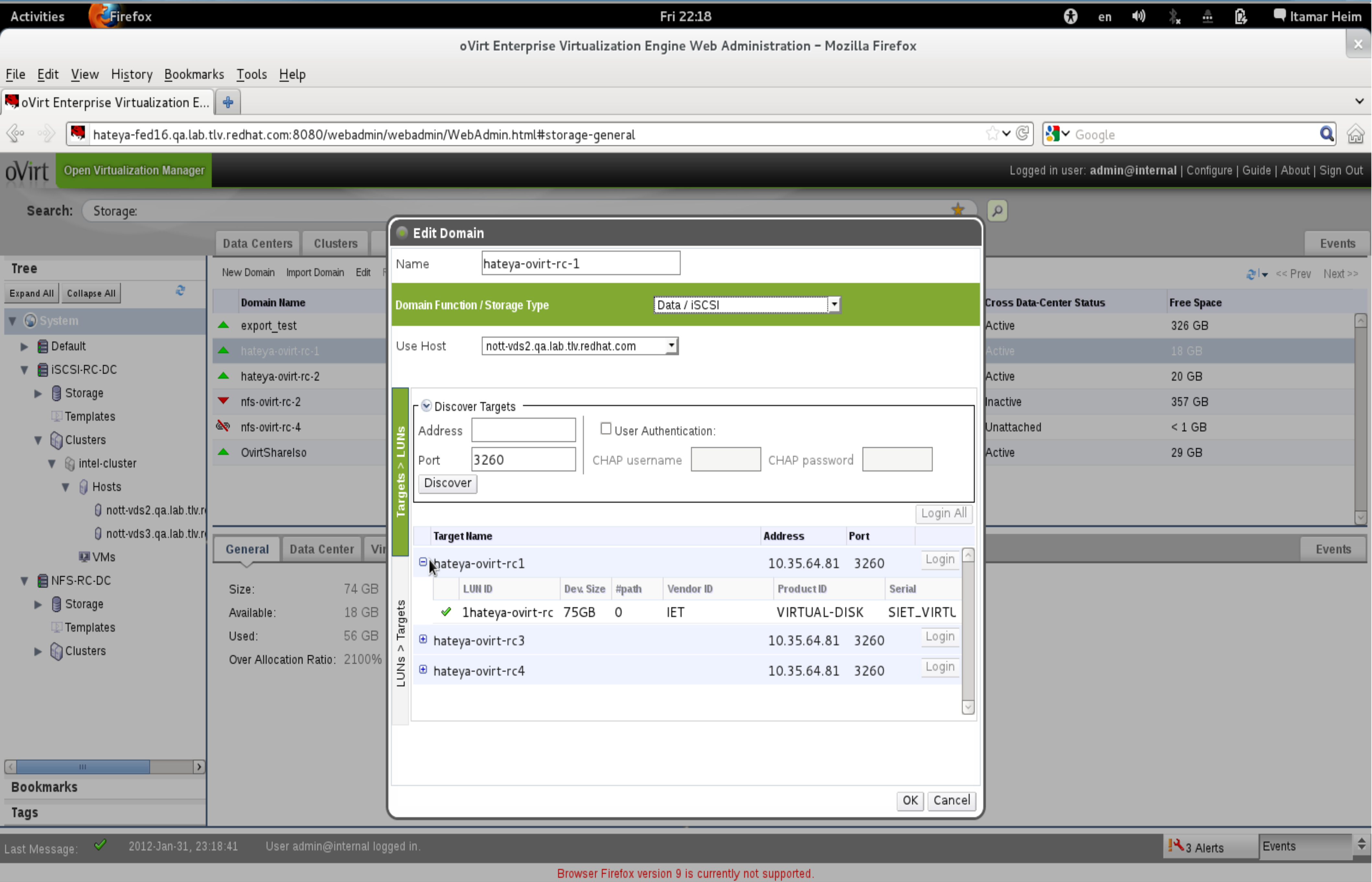
Use Host: nott-vds2.qa.lab.tlv.redhat.com

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

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

Browser Firefox version 9 is currently not supported.

Extend with More LUNs as Needed



oVirt Enterprise Virtualization Engine Web Administration – Mozilla Firefox

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

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:

Port: 3260

☐ User Authentication:

CHAP username: CHAP password:

Target Name	Address	Port
hateya-ovirt-rc1	10.35.64.81	3260
hateya-ovirt-rc3	10.35.64.81	3260
hateya-ovirt-rc4	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

Domain Name	Cross Data-Center Status	Free Space
export_test	Active	326 GB
hateya-ovirt-rc-1	Active	18 GB
hateya-ovirt-rc-2	Active	20 GB
nfs-ovirt-rc-2	Inactive	357 GB
nfs-ovirt-rc-4	Unattached	< 1 GB
OvirtShareIso	Active	29 GB

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

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

Browser Firefox version 9 is currently not supported.

Activities
Firefox
Fri 22:18
Itamar Heim
File Edit View History Bookmarks Tools Help
Open Virtualization Manager
Data Centers
Clusters
New Domain
Import Domain
Edit
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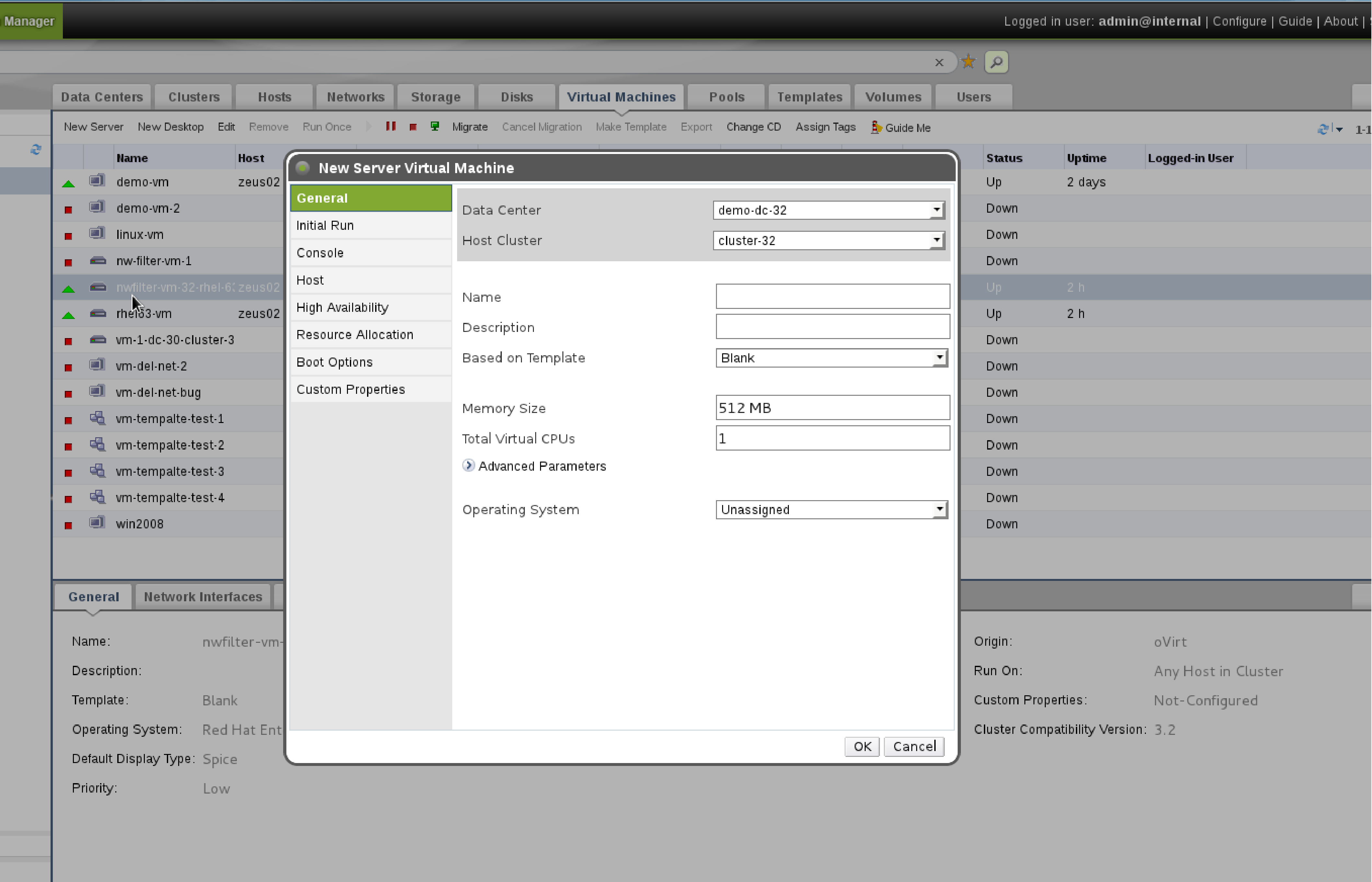
Tree
Expand All
Collapse All
System
Default
iSCSI-RC-DC
Storage
Templates
Clusters
intel-cluster
Hosts
nott-vds2.qa.lab.tlv.r
nott-vds3.qa.lab.tlv.r
VMs
NFS-RC-DC
Bookmarks
Tags
General
Data Center
Targets > LUNs
LUNs > Targets
Discover
Login All
Login
OK
Cancel
3 Alerts
<< Prev
Next >>

Add Servers or Desktops


Manager
Logged in user: admin@internal | Configure | Guide | About |
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Volumes
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Cancel Migration
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High Availability
Resource Allocation
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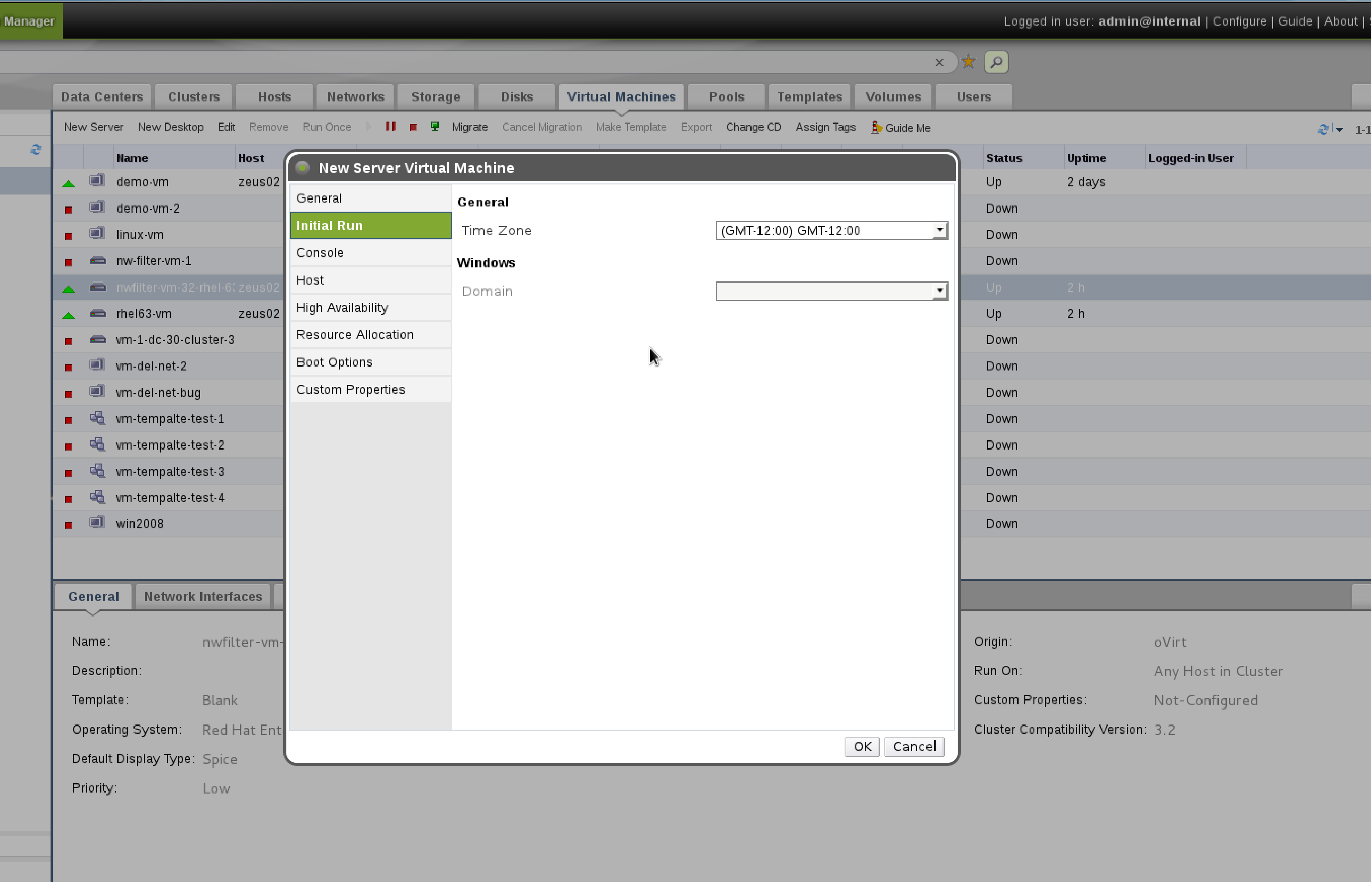
Cancel
General
Network Interfaces

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		

Data Center: demo-dc-32
Host Cluster: cluster-32
Name:
Description:
Based on Template: Blank
Memory Size: 512 MB
Total Virtual CPUs: 1
Operating System: Unassigned

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

Even Windows via Sysprep


Manager
Logged in user: admin@internal | Configure | Guide | About |
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High Availability
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OK
Cancel
General
Network Interfaces

New Server Virtual Machine – Initial Run

General

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

Windows

Domain:

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		

Name: nwfilter-vm-

Description:

Template: Blank

Operating System: Red Hat Ent

Default Display Type: Spice

Priority: Low

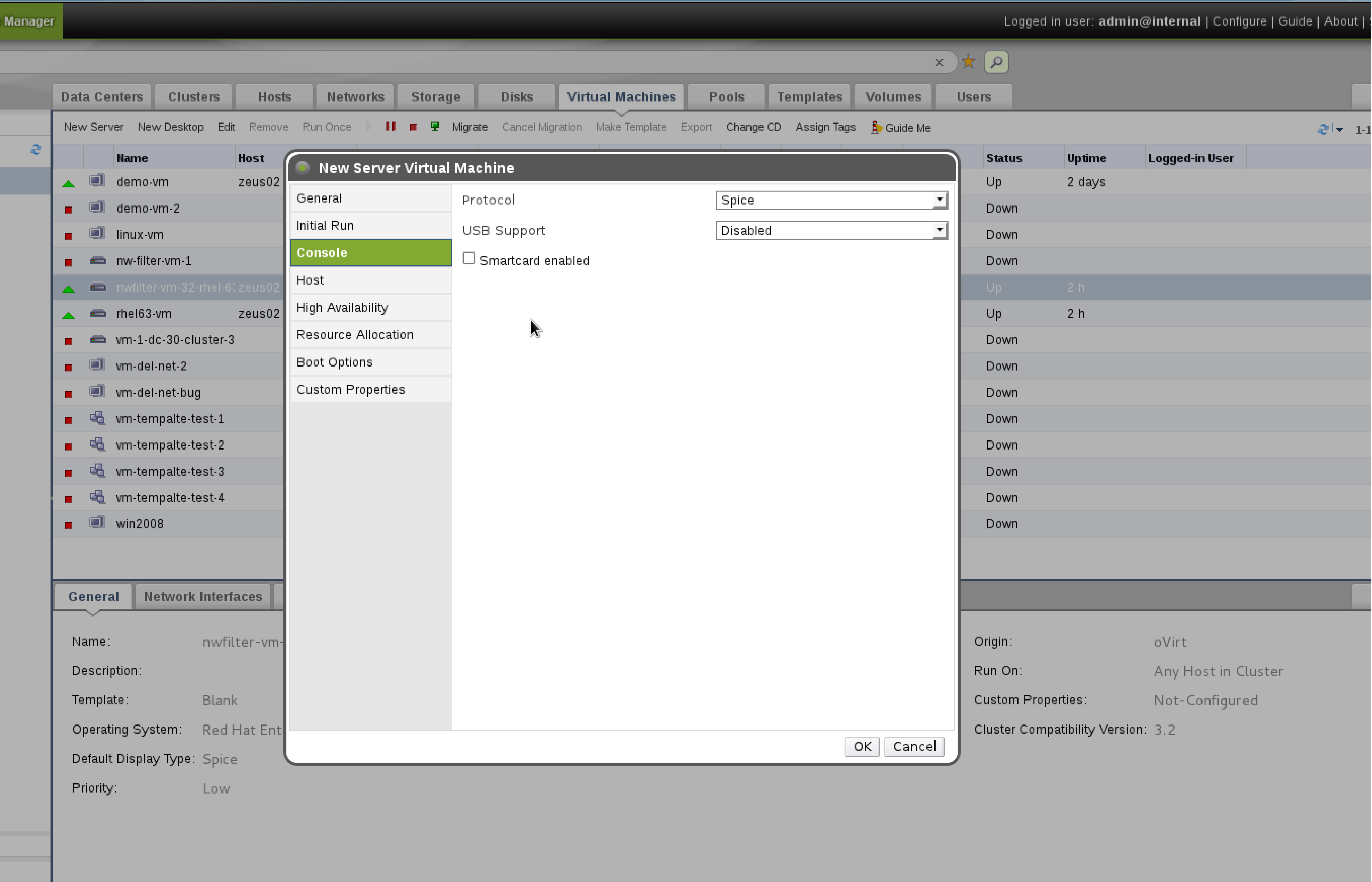
Origin: oVirt

Run On: Any Host in Cluster

Custom Properties: Not-Configured

Cluster Compatibility Version: 3.2

Console Details (SPICE or VNC)


Manager
Logged in user: admin@internal | Configure | Guide | About
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Custom Properties
OK
Cancel
General
Network Interfaces

Protocol: Spice

USB Support: Disabled

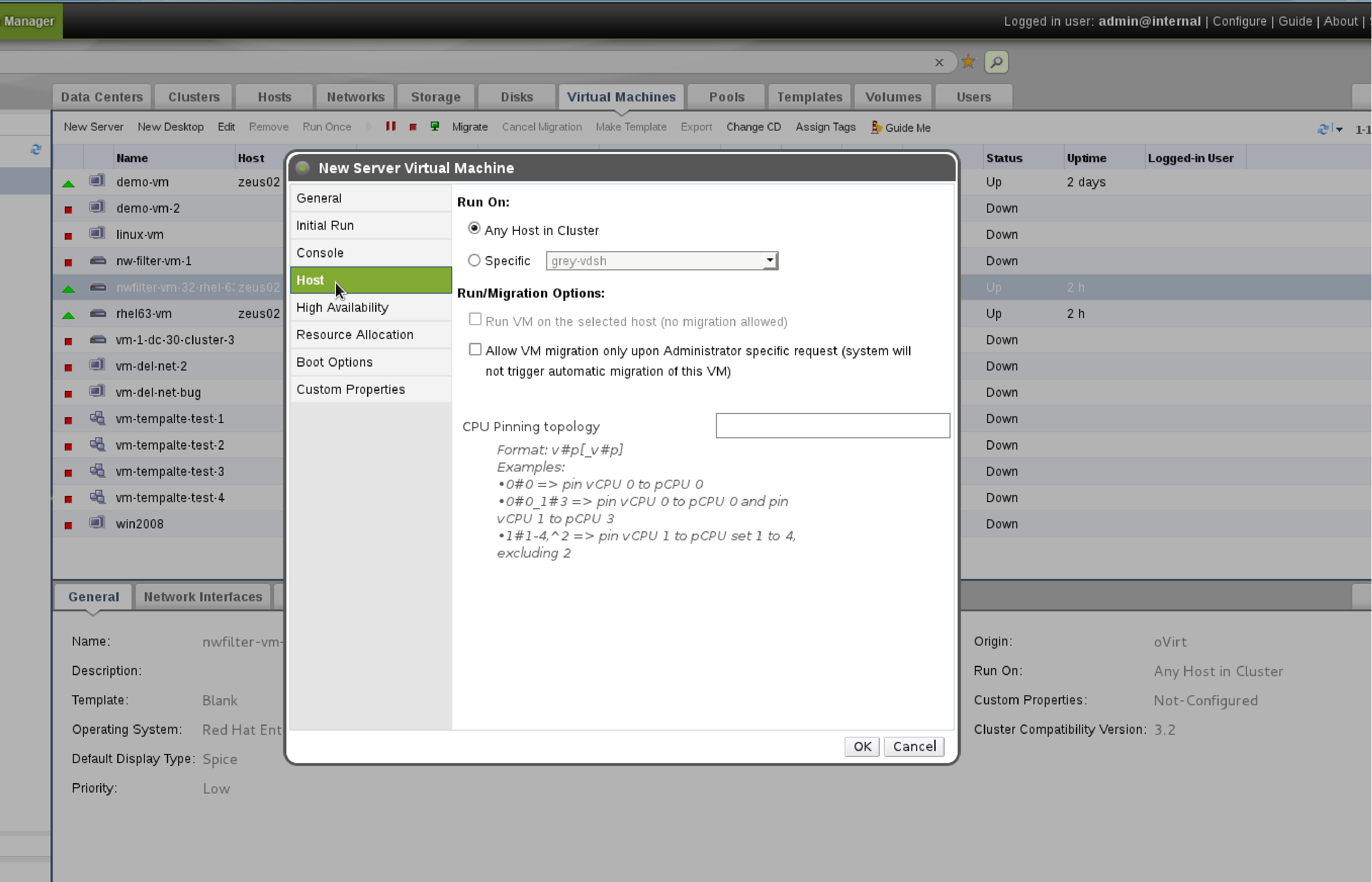
☐ Smartcard enabled

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		

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


Manager
Logged in user: admin@internal | Configure | Guide | About |
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Migrate
Cancel Migration
Make Template
Export
Change CD
Assign Tags
Guide Me
General
Network Interfaces
OK
Cancel

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

Run On:

● Any Host in Cluster

○ Specific grey-vdsh

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)

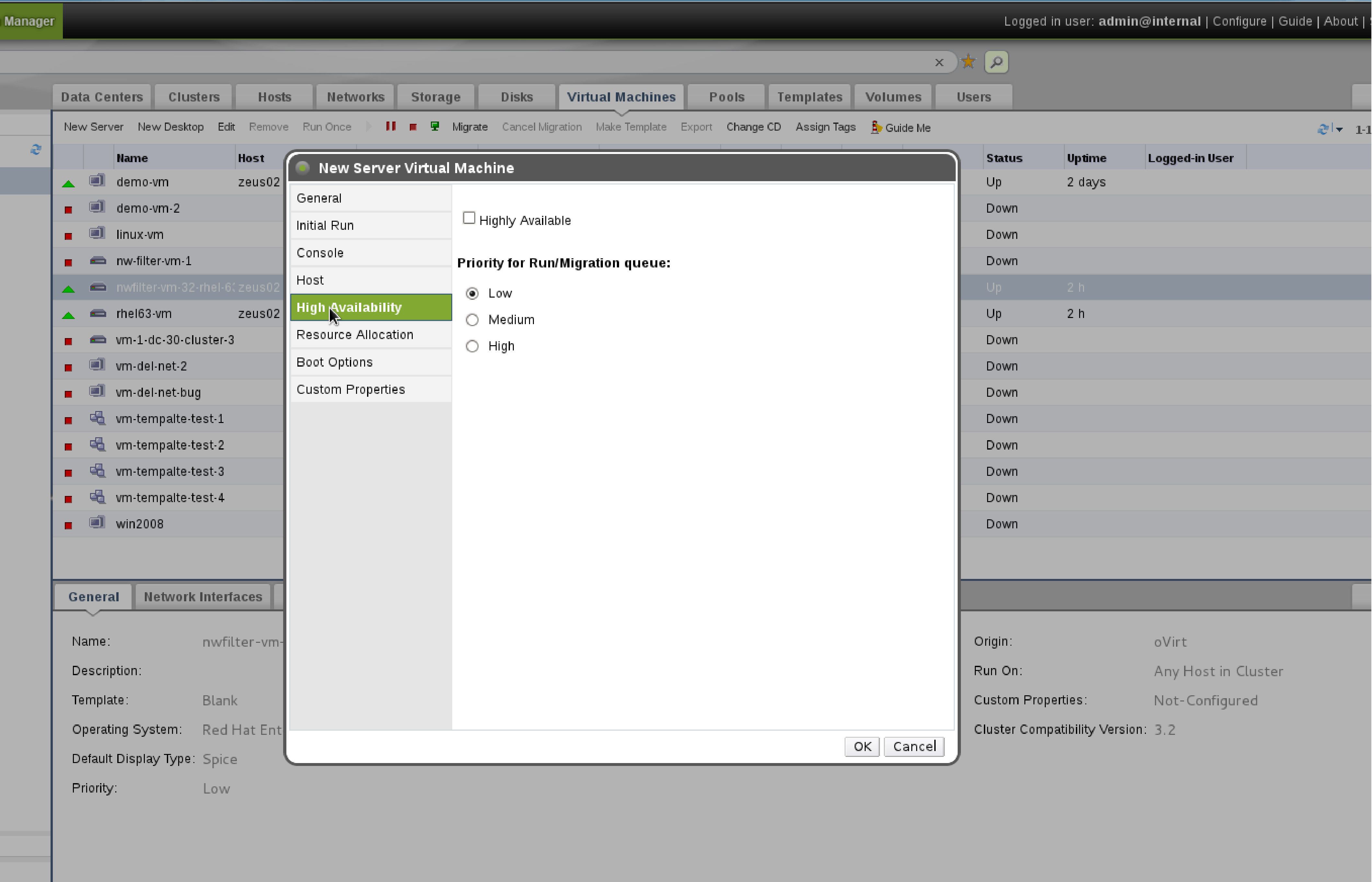
CPU Pinning topology

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

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


Manager
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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

☐ Highly Available

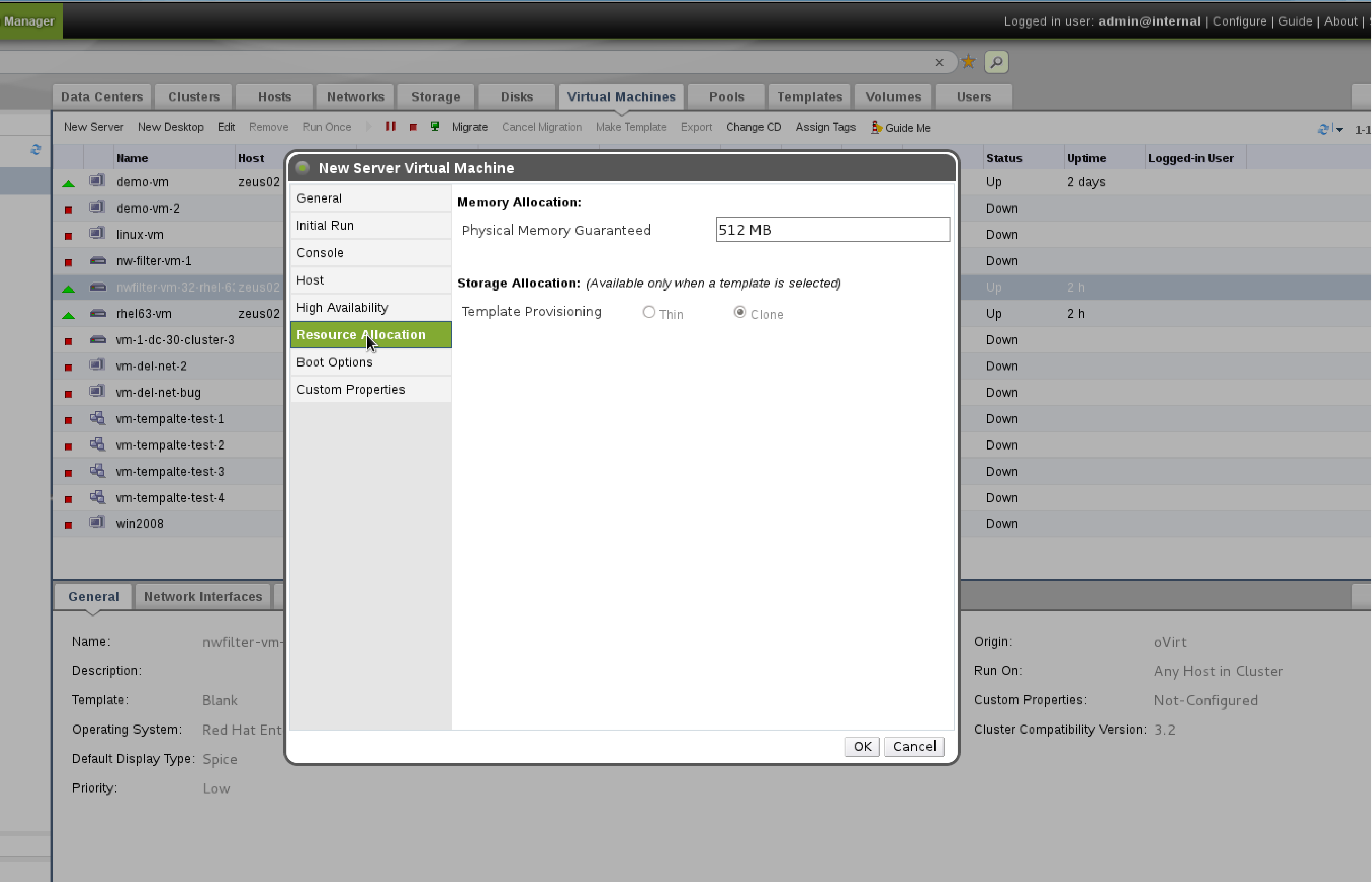
Priority for Run/Migration queue:

● Low
○ Medium
○ High

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

Control Allocated Resources (Disk, Memory)


Manager
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Volumes
Users
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Cancel Migration
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Export
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General
Initial Run
Console
Host
High Availability
Resource Allocation
Boot Options
Custom Properties
OK
Cancel
General
Network Interfaces

New Server Virtual Machine

Memory Allocation:

Physical Memory Guaranteed: 512 MB

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

Template Provisioning ○ Thin ● Clone

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		

Name: nwfilter-vm-

Description:

Template: Blank

Operating System: Red Hat Ent

Default Display Type: Spice

Priority: Low

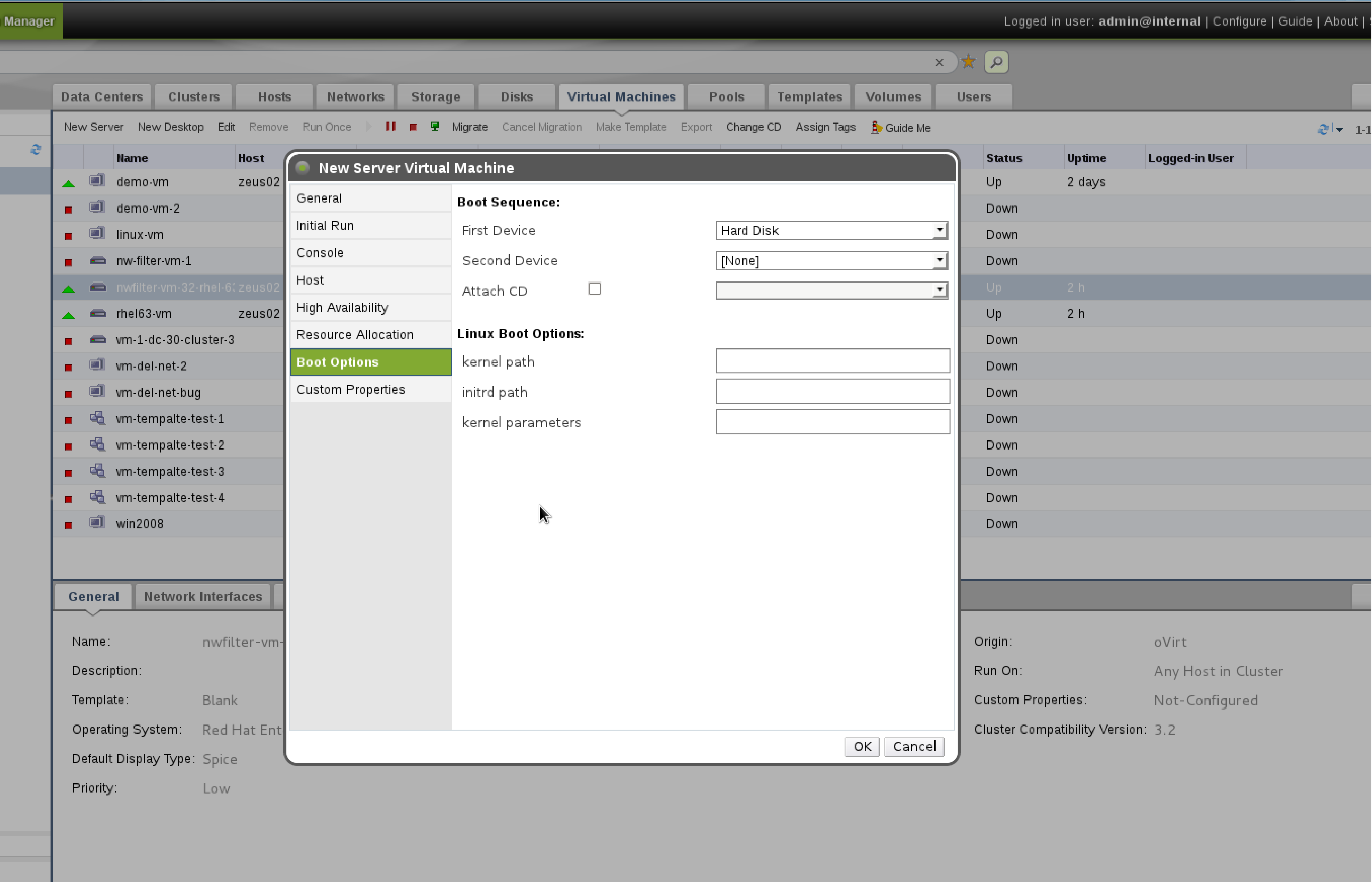
Origin: oVirt

Run On: Any Host in Cluster

Custom Properties: Not-Configured

Cluster Compatibility Version: 3.2

Boot Devices


Manager
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Remove
Run Once
Migrate
Cancel Migration
Make Template
Export
Change CD
Assign Tags
Guide Me
1-1
General
Initial Run
Console
Host
High Availability
Resource Allocation
Boot Options
Custom Properties
OK
Cancel
General
Network Interfaces

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

Boot Sequence:

First Device: Hard Disk

Second Device: [None]

Attach CD ☐

Linux Boot Options:

kernel path

initrd path

kernel parameters

Name: nwfilter-vm-

Description:

Template: Blank

Operating System: Red Hat Ent

Default Display Type: Spice

Priority: Low

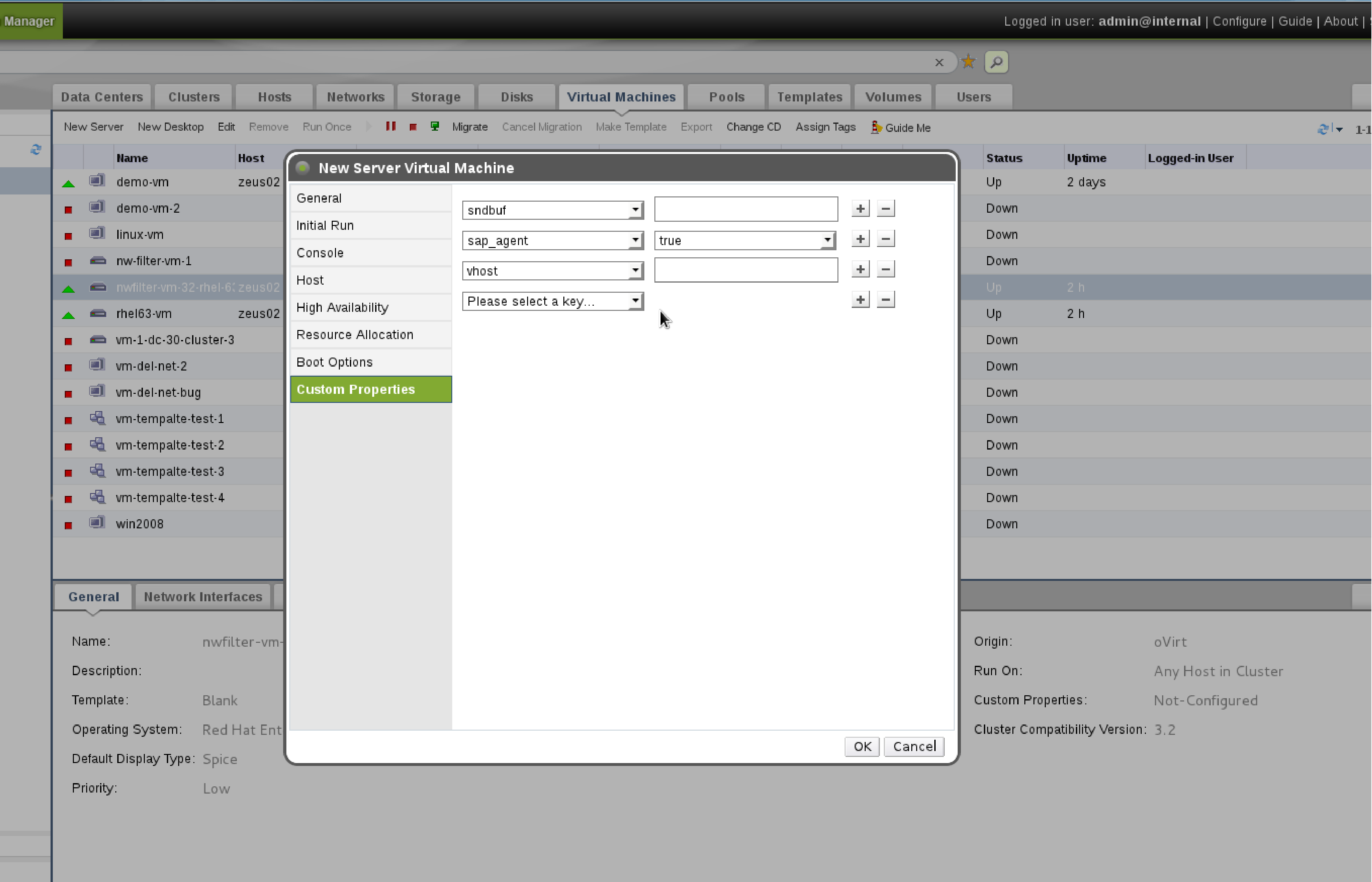
Origin: oVirt

Run On: Any Host in Cluster

Custom Properties: Not-Configured

Cluster Compatibility Version: 3.2

Advanced Options via Custom Properties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General
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Console
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High Availability
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Boot Options
Custom Properties
OK
Cancel

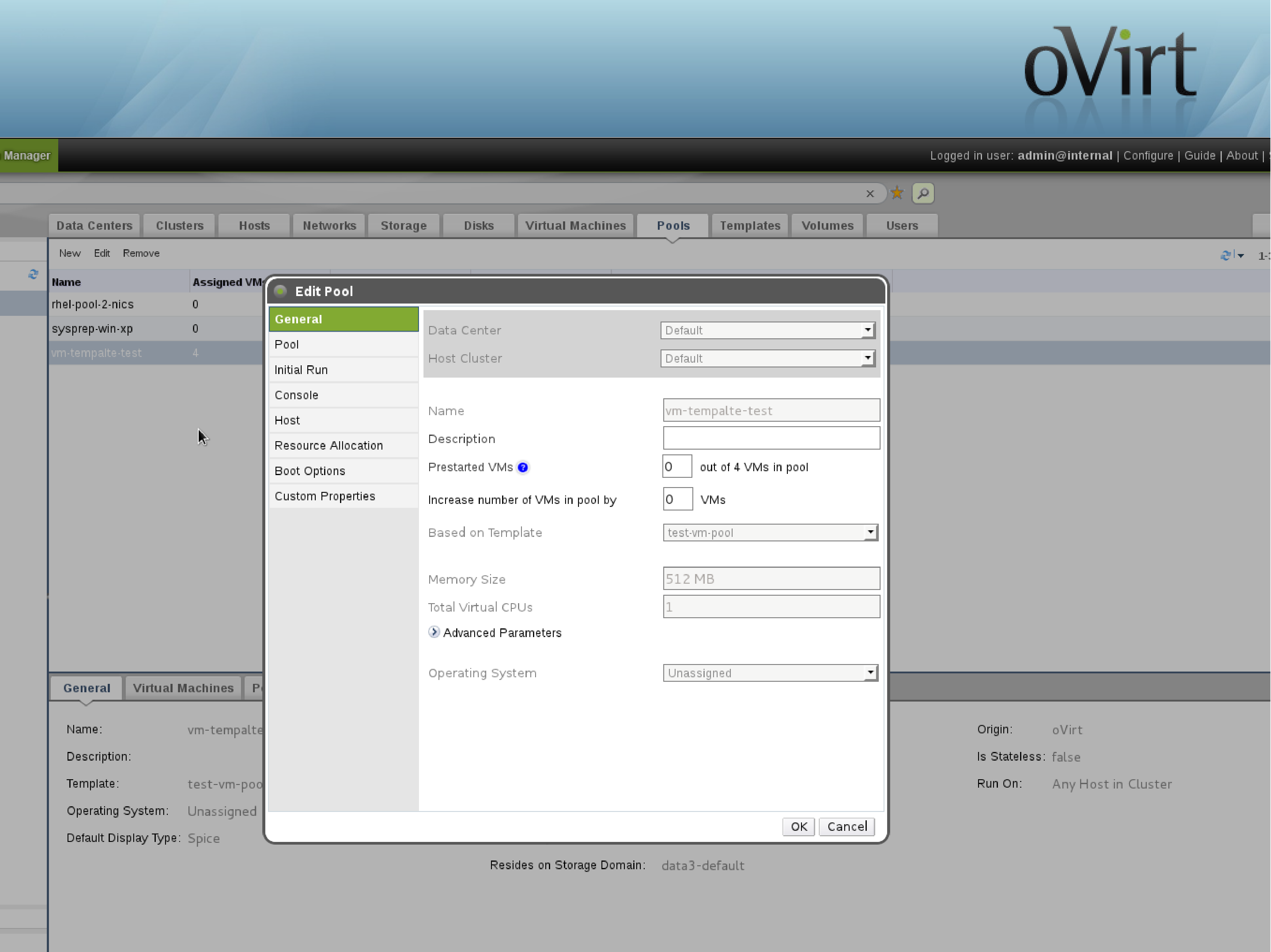
Name	Host	Status	Uptime	Logged-in User
demo-vm	zeus02	Up	2 days	
demo-vm-2		Down		
linux-vm		Down		
nw-filter-vm-1		Down		
nwfilter-vm-32-rhel-6	zeus02	Up	2 h	
rhel63-vm	zeus02	Up	2 h	
vm-1-dc-30-cluster-3		Down		
vm-del-net-2		Down		
vm-del-net-bug		Down		
vm-tempalte-test-1		Down		
vm-tempalte-test-2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

New Server Virtual Machine

sndbuf	
sap_agent	true
vhost	
Please select a key...	

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


oVirt
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OK
Cancel
General
Virtual Machines

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

Edit Pool

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

Operating System: Unassigned

Name: vm-tempalte

Description:

Template: test-vm-poo

Operating System: Unassigned

Default Display Type: Spice

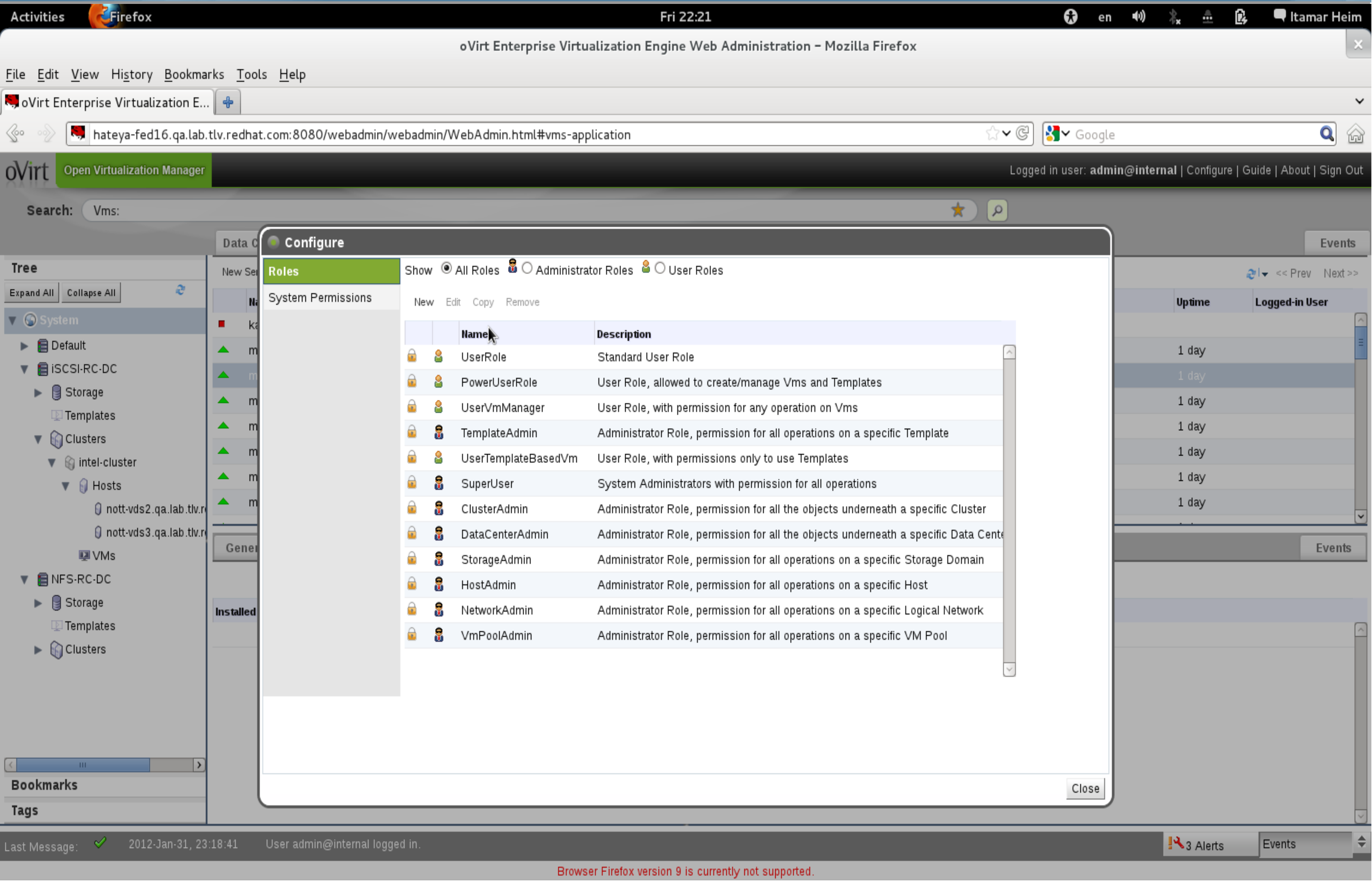
Resides on Storage Domain: data3-default

Origin: oVirt

Is Stateless: false

Run On: Any Host in Cluster

Assign Permissions to Objects by 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
Google
oVirt
Open Virtualization Manager
Logged in user: admin@internal | Configure | Guide | About | Sign Out
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Vms:
Tree
Expand All
Collapse All
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Default
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intel-cluster
Hosts
nott-vds2.qa.lab.tlv.r
nott-vds3.qa.lab.tlv.r
VMs
NFS-RC-DC
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Bookmarks
Tags
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<< Prev
Next >>
Uptime
Logged-in User
1 day
3 Alerts
Events
Configure
Roles
System Permissions
New
Edit
Copy
Remove
Close

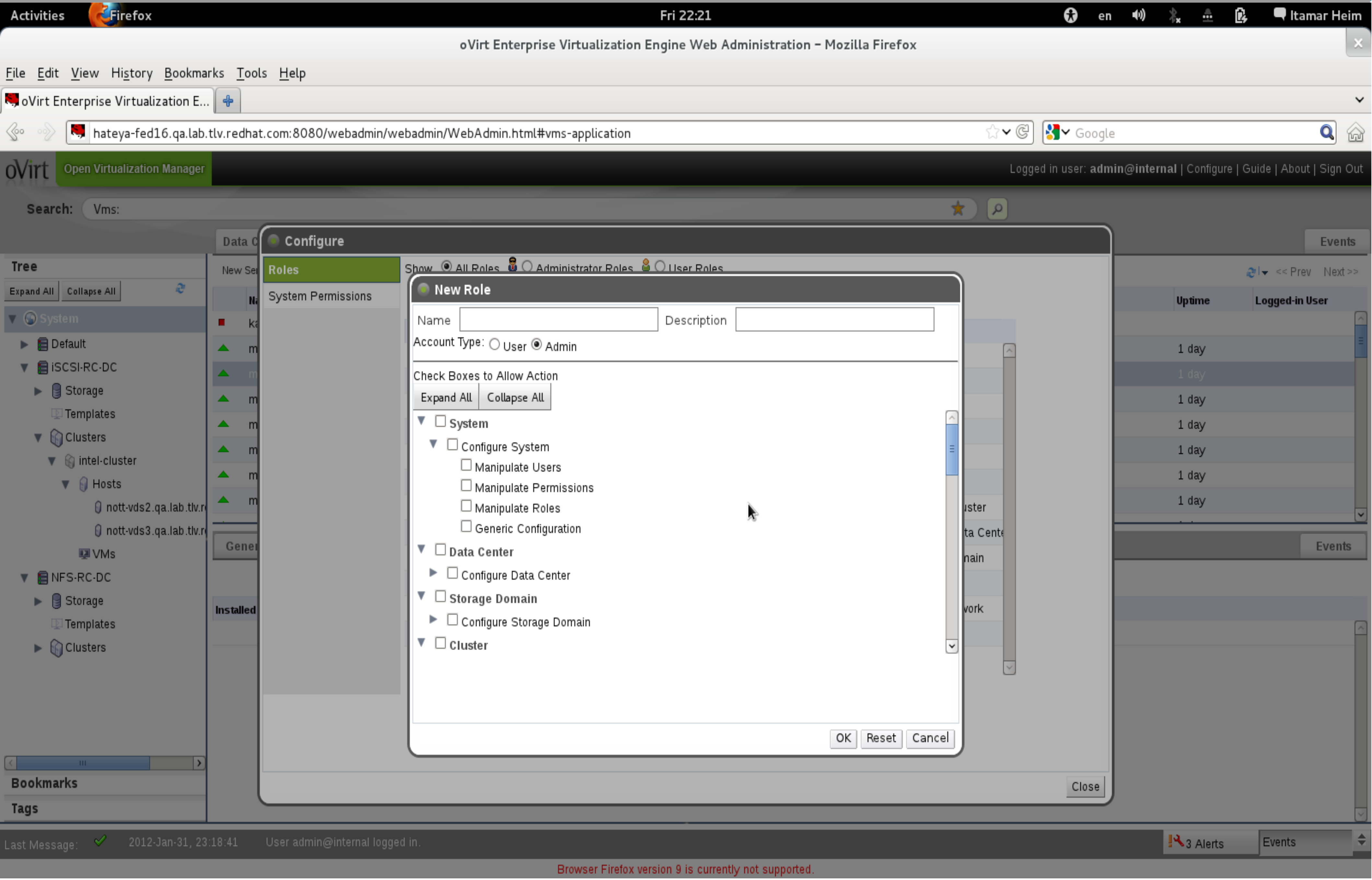
Show ● All Roles ○ Administrator Roles ○ User Roles

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 Cente
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

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

Browser Firefox version 9 is currently not supported.

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...
Google
oVirt
Open Virtualization Manager
Logged in user: admin@internal | Configure | Guide | About | Sign Out
Search:
Tree
Expand All
Collapse All
System
Default
iSCSI-RC-DC
Storage
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intel-cluster
Hosts
nott-vds2.qa.lab.tlv.r
nott-vds3.qa.lab.tlv.r
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Clusters
Bookmarks
Tags
Events
Uptime
Logged-in User
1 day
<< Prev
Next >>
Configure
Roles
System Permissions
Close
New Role
Name
Description
Check Boxes to Allow Action
Expand All
Collapse All
OK
Reset
Cancel
3 Alerts
Events

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

Search: Vms:

Show ● All Roles ○ Administrator Roles ○ User Roles

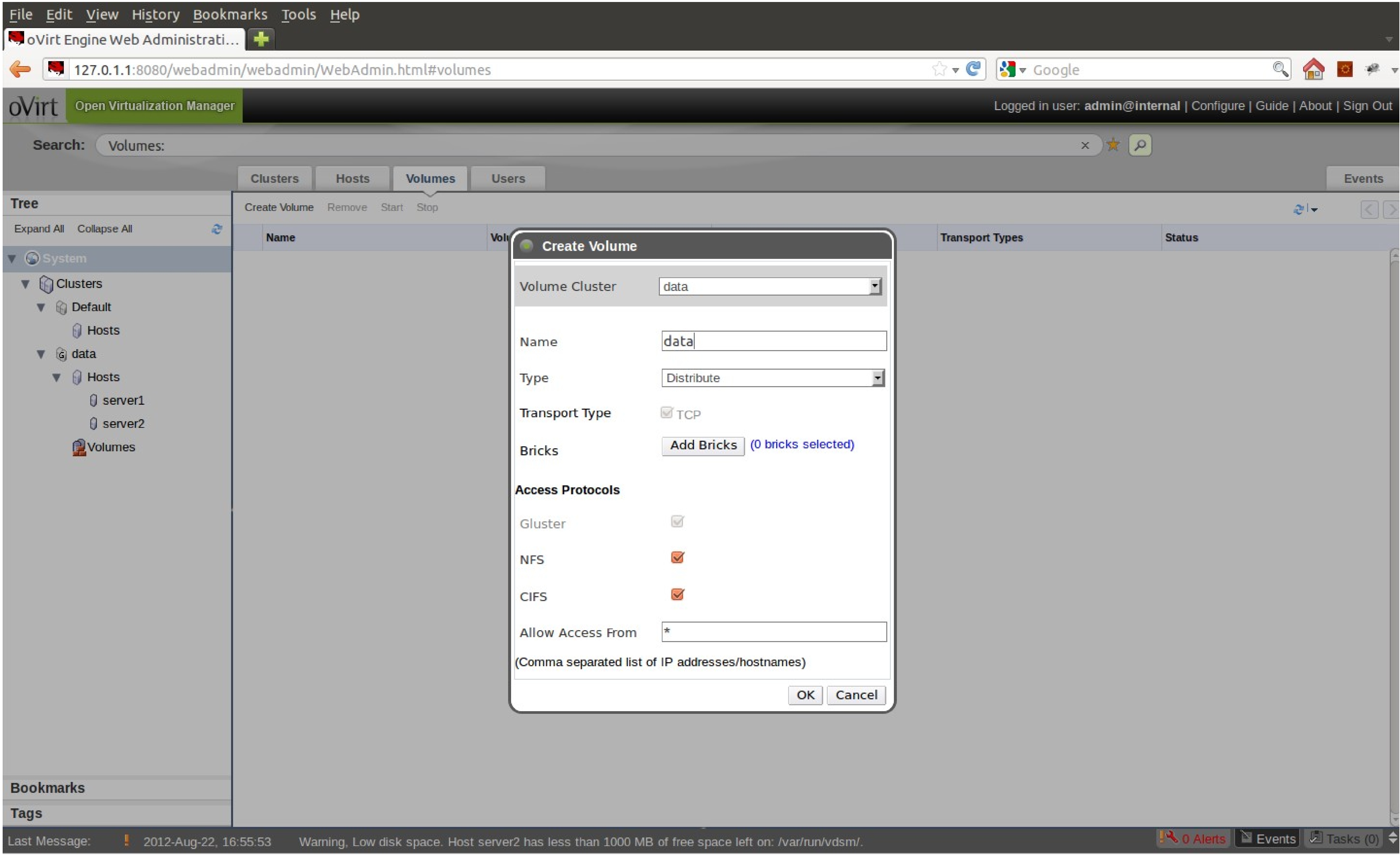
Account Type: ○ User ● Admin

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

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

Browser Firefox version 9 is currently not supported.

Gluster Management


File Edit View History Bookmarks Tools Help
oVirt Engine Web Administrati…
Google
oVirt Open Virtualization Manager
Clusters
Hosts
Volumes
Users
Events
Tree
Expand All
Collapse All
System
Clusters
Default
Hosts
data
Hosts
server1
server2
Volumes
Bookmarks
Tags
Create Volume
Remove
Start
Stop
Name
Transport Types
Status
Add Bricks
OK
Cancel
0 Alerts
Events
Tasks (0)

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

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

Search: Volumes:

Create Volume

Volume Cluster: data

Name: data

Type: Distribute

Transport Type: ☑ TCP

Bricks: (0 bricks selected)

Access Protocols

Gluster ☑

NFS ☑

CIFS ☑

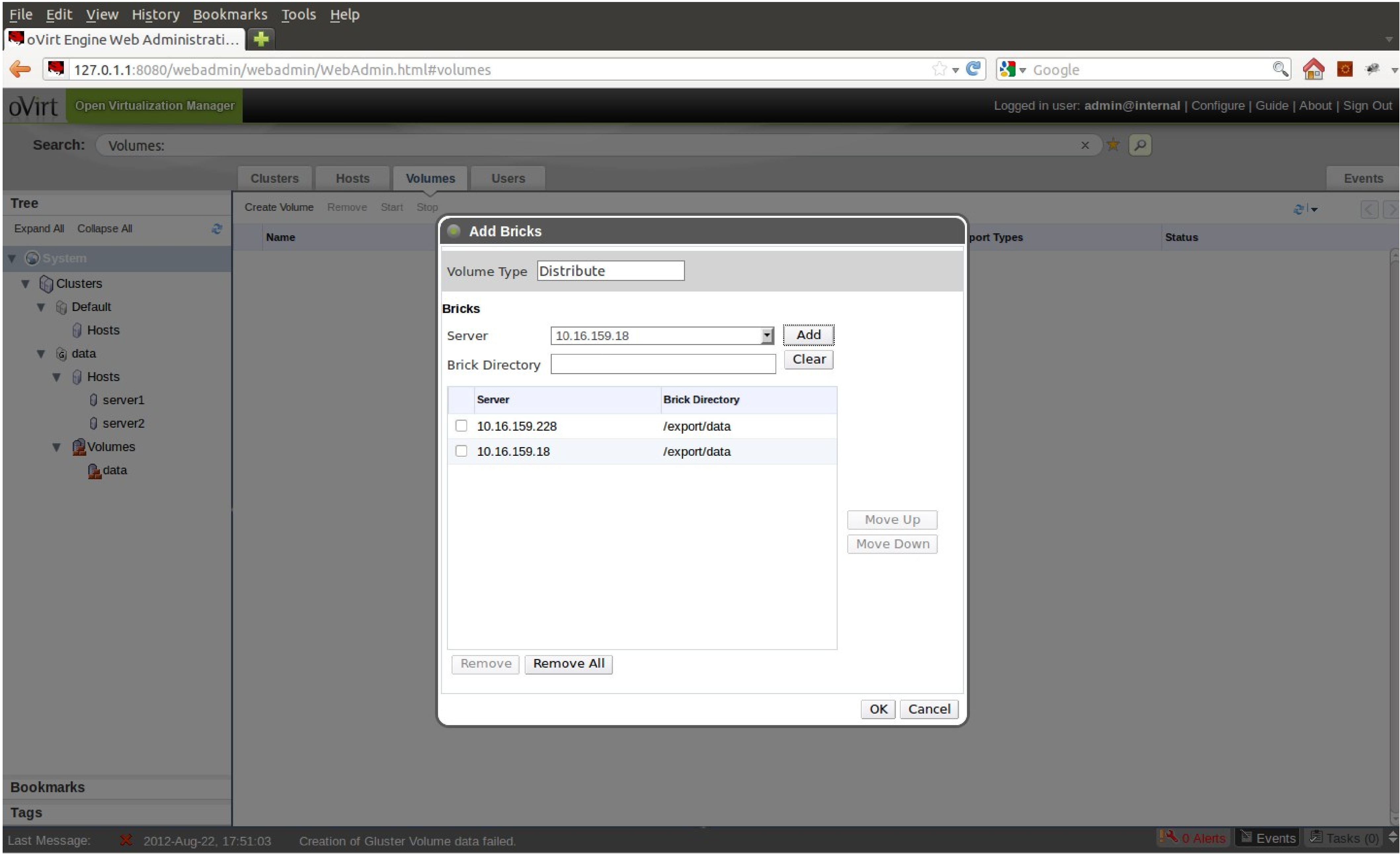
Allow Access From: *

(Comma separated list of IP addresses/hostnames)

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/.

Virtualization Management the oVirt way

Create Volume – Add Bricks



File Edit View History Bookmarks Tools Help
oVirt Engine Web Administrati...
127.0.1.1:8080/webadmin/webadmin/WebAdmin.html#volumes
Google
oVirt Open Virtualization Manager
Logged in user: admin@internal | Configure | Guide | About | Sign Out
Search:
Volumes:
Clusters
Hosts
Volumes
Users
Events
Tree
Expand All
Collapse All
System
Clusters
Default
Hosts
data
Hosts
server1
server2
Volumes
data
Create Volume
Remove
Start
Stop
Name
port Types
Status
Add Bricks
Bricks
Add
Clear
Move Up
Move Down
Remove
Remove All
OK
Cancel
Bookmarks
Tags
0 Alerts
Events
Tasks (0)

Volume Type: Distribute

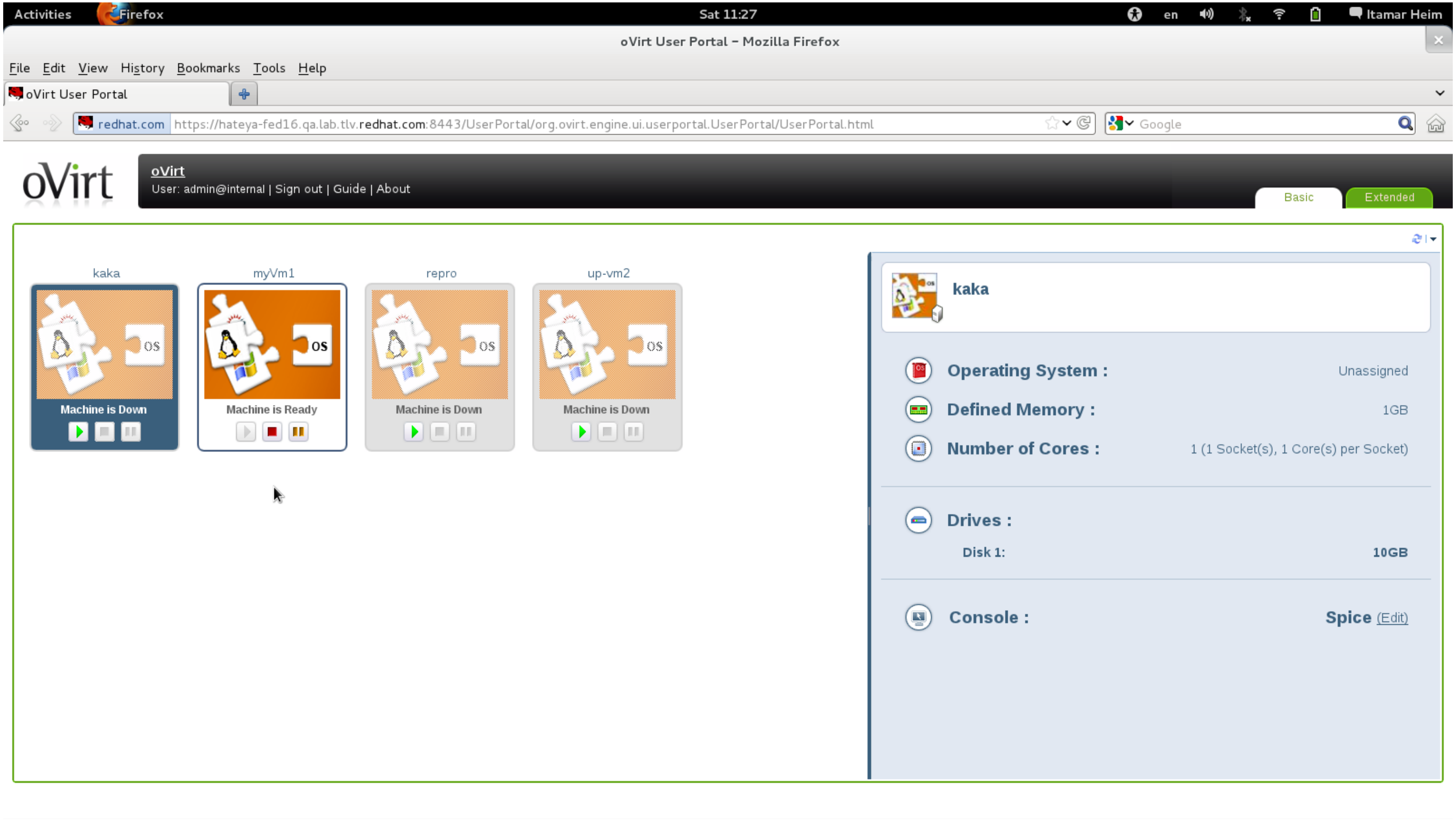
Server: 10.16.159.18

Brick Directory:

	Server	Brick Directory
☐	10.16.159.228	/export/data
☐	10.16.159.18	/export/data

Last Message: 2012-Aug-22, 17:51:03 Creation of Gluster Volume data failed.

User Portal


Activities
Firefox
Sat 11:27
en
Itamar Heim
oVirt User Portal – Mozilla Firefox
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/UserPortal.html
Google
oVirt
oVirt
User: admin@internal | Sign out | Guide | About
Basic
Extended
kaka
Machine is Down
myVm1
Machine is Ready
repro
Machine is Down
up-vm2
Machine is Down

kaka

Operating System : Unassigned

Defined Memory : 1GB

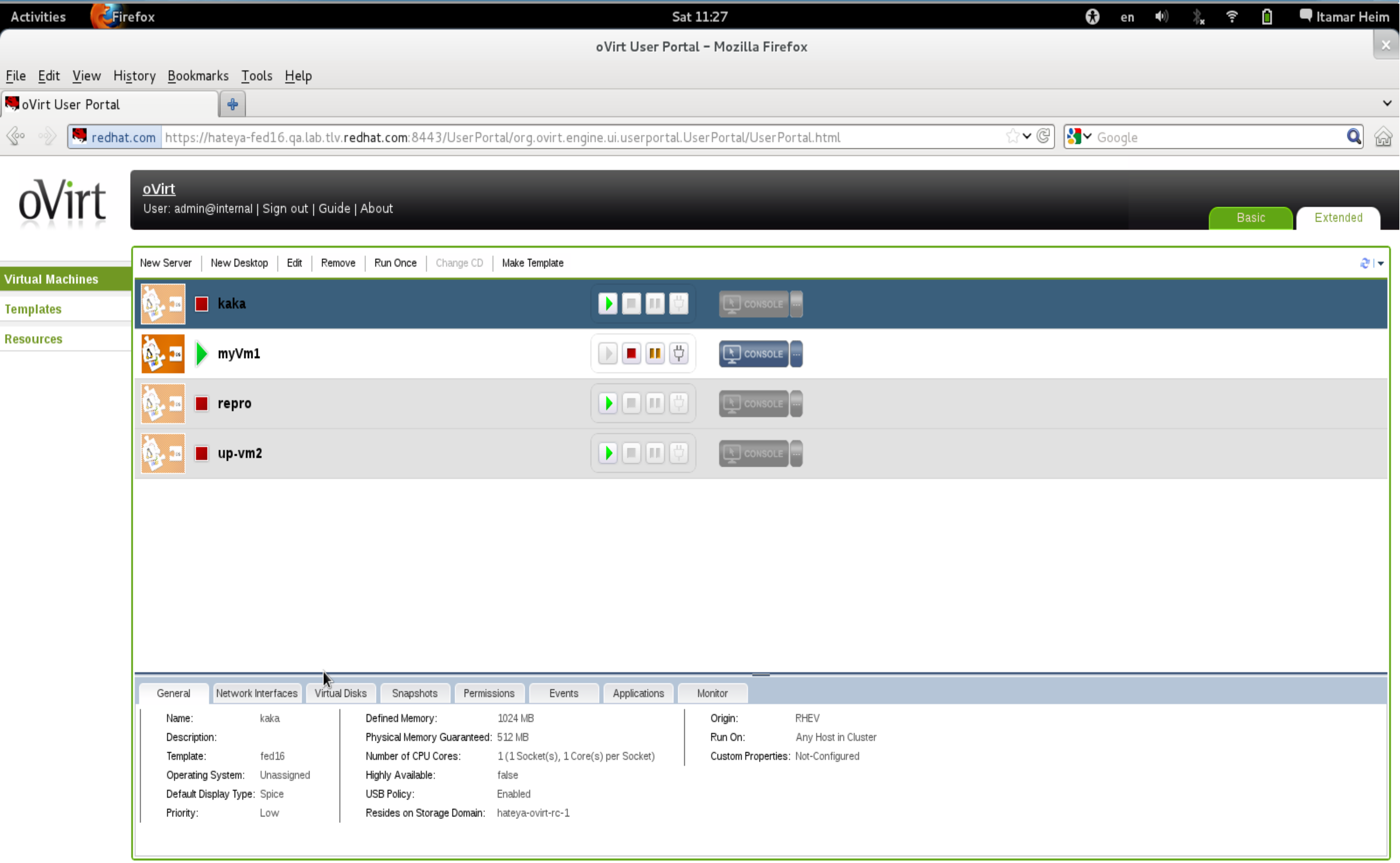
Number of Cores : 1 (1 Socket(s), 1 Core(s) per Socket)

Drives :

Disk 1: **10GB**

Console : **Spice** (Edit)

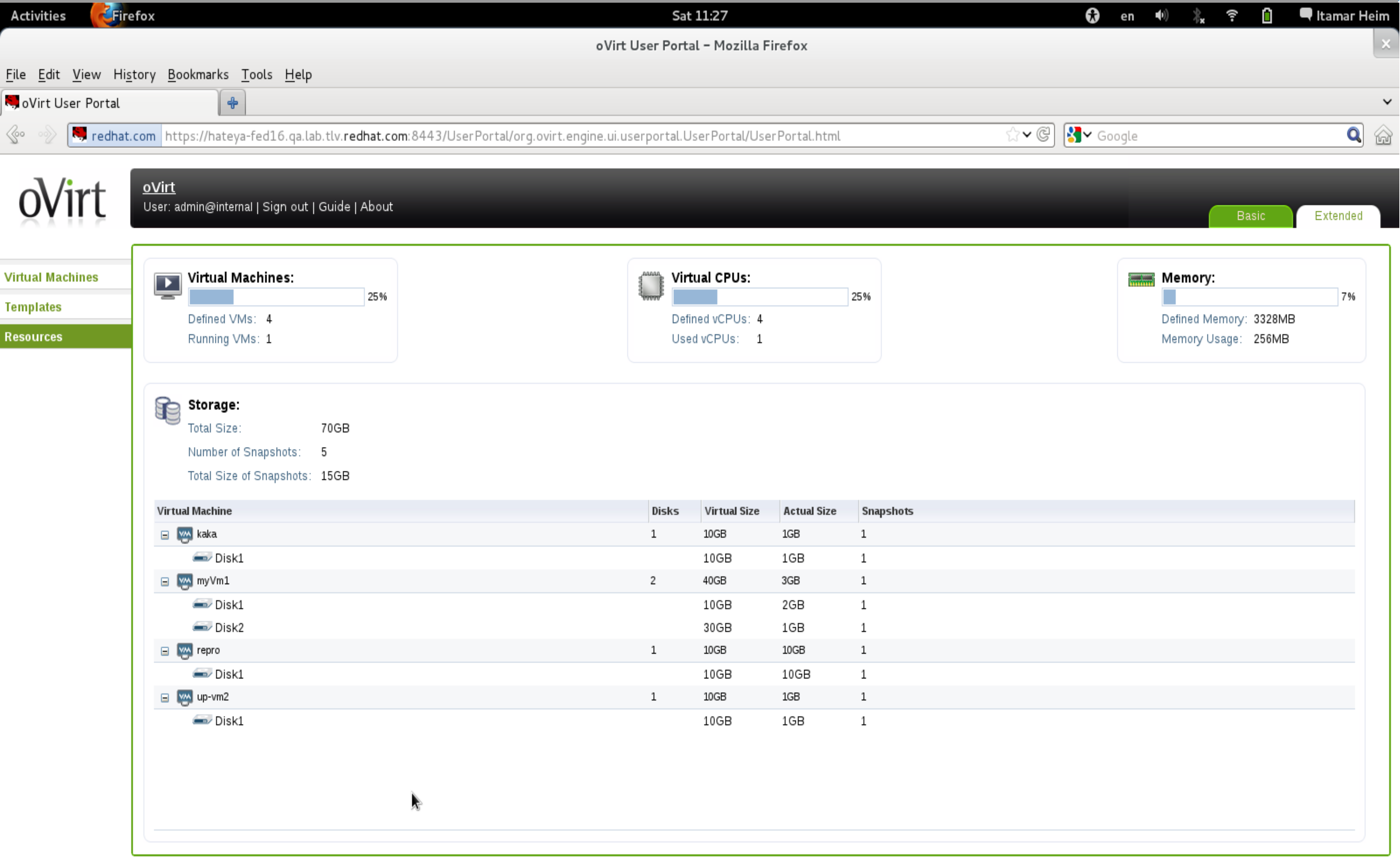
Self Provisioning Portal


Activities
Firefox
Sat 11:27
en
Itamar Heim
oVirt User Portal – Mozilla Firefox
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/UserPortal.html
Google
oVirt
User: admin@internal | Sign out | Guide | About
Basic
Extended
Virtual Machines
Templates
Resources
New Server
New Desktop
Edit
Remove
Run Once
Change CD
Make Template
CONSOLE
General
Network Interfaces
Virtual Disks
Snapshots
Permissions
Events
Applications
Monitor

- 🟥 kaka
- ▶ myVm1
- 🟥 repro
- 🟥 up-vm2

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


Activities
Firefox
Sat 11:27
en
Itamar Heim
oVirt User Portal – Mozilla Firefox
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/UserPortal.html
Google
oVirt
oVirt
User: admin@internal | Sign out | Guide | About
Basic
Extended
Virtual Machines
Templates
Resources

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:

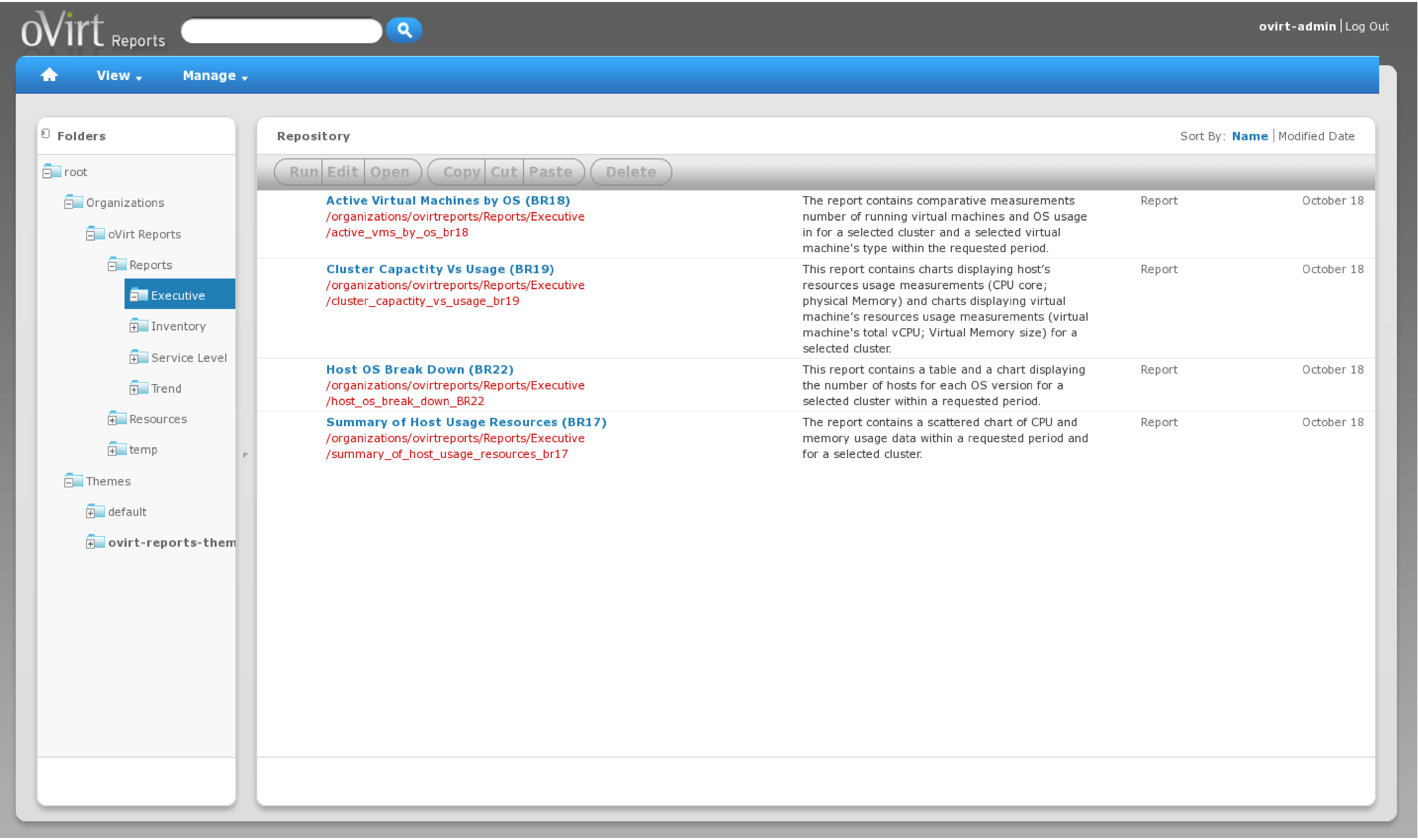
Total Size: 70GB

Number of Snapshots: 5

Total Size of Snapshots: 15GB

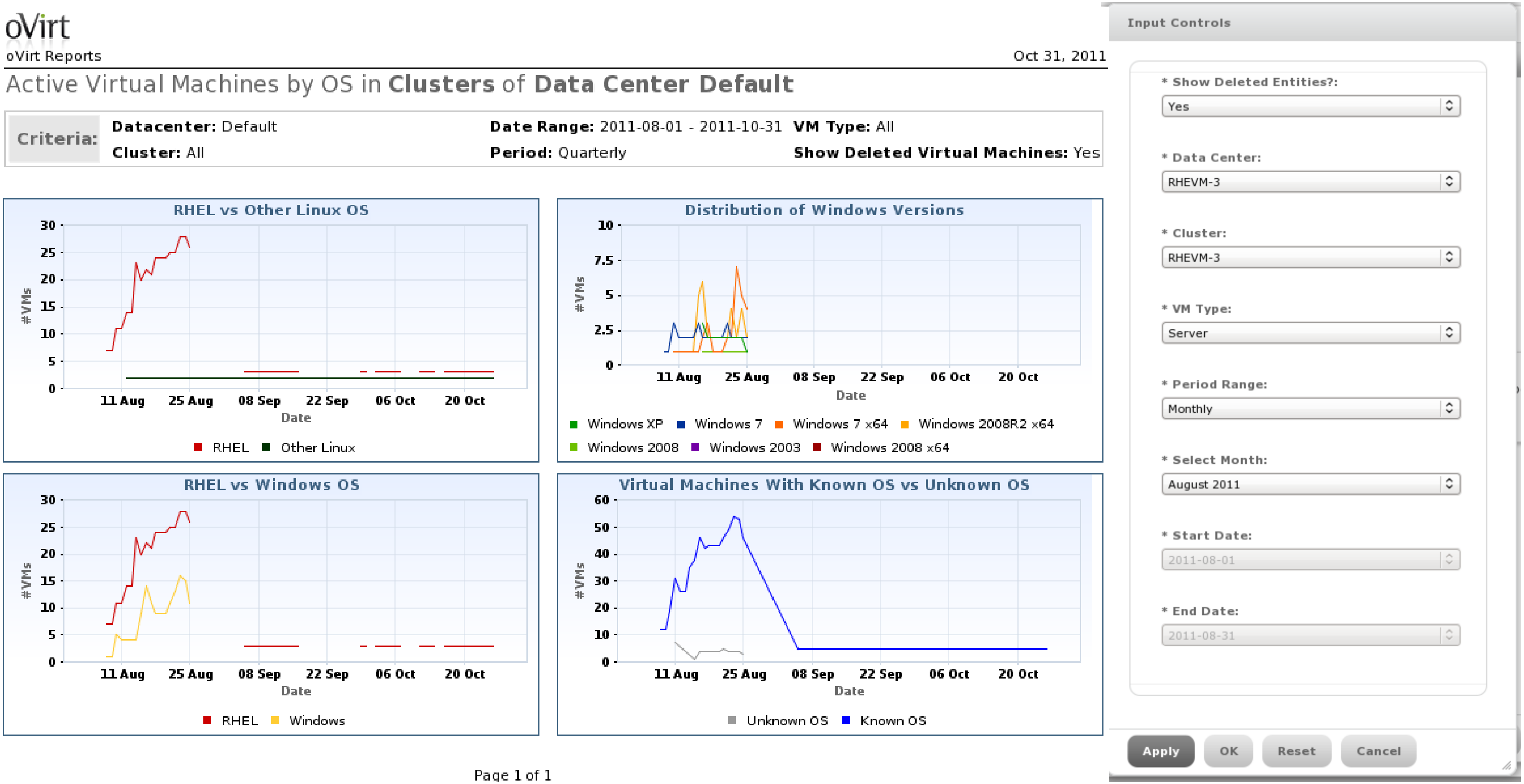
Virtual Machine	Disks	Virtual Size	Actual Size	Snapshots
⊟ kaka	1	10GB	1GB	1
Disk1		10GB	1GB	1
⊟ myVm1	2	40GB	3GB	1
Disk1		10GB	2GB	1
Disk2		30GB	1GB	1
⊟ repro	1	10GB	10GB	1
Disk1		10GB	10GB	1
⊟ up-vm2	1	10GB	1GB	1
Disk1		10GB	1GB	1

oVirt Reports


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-them
Repository
Sort By: Name | Modified Date
Run
Edit
Open
Copy
Cut
Paste
Delete

Active Virtual Machines 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 Capactity Vs Usage (BR19) /organizations/ovirtreports/Reports/Executive/cluster_capactity_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	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	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
Cluster: All
Date Range: 2011-08-01 - 2011-10-31
Period: Quarterly
VM Type: All
Show Deleted Virtual Machines: Yes

RHEL vs Other Linux OS
#VMs
30
25
20
15
10
5
0
11 Aug
25 Aug
08 Sep
22 Sep
06 Oct
20 Oct
Date
🟥 RHEL
🟩 Other Linux
Distribution of Windows Versions
#VMs
10
7.5
5
2.5
0
11 Aug
25 Aug
08 Sep
22 Sep
06 Oct
20 Oct
Date
🟩 Windows XP
🟦 Windows 7
🟧 Windows 7 x64
🟧 Windows 2008R2 x64
🟩 Windows 2008
🟪 Windows 2003
🟥 Windows 2008 x64
RHEL vs Windows OS
#VMs
30
25
20
15
10
5
0
11 Aug
25 Aug
08 Sep
22 Sep
06 Oct
20 Oct
Date
🟥 RHEL
🟨 Windows
Virtual Machines With Known OS vs Unknown OS
#VMs
60
50
40
30
20
10
0
11 Aug
25 Aug
08 Sep
22 Sep
06 Oct
20 Oct
Date
⬜ Unknown OS
🟦 Known OS

Page 1 of 1

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

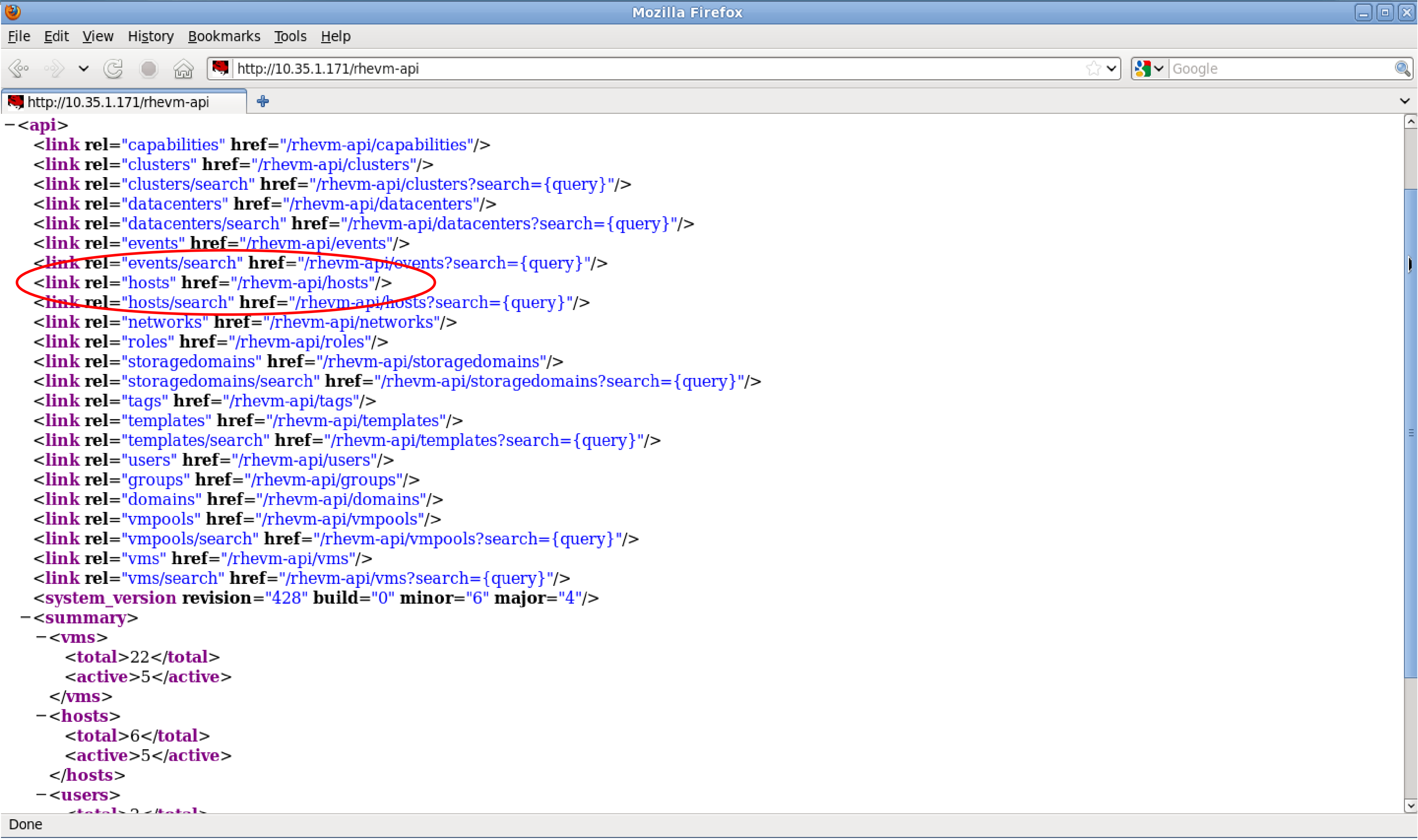
* End Date: 2011-08-31

Apply
OK
Reset
Cancel

RESTful Web Service

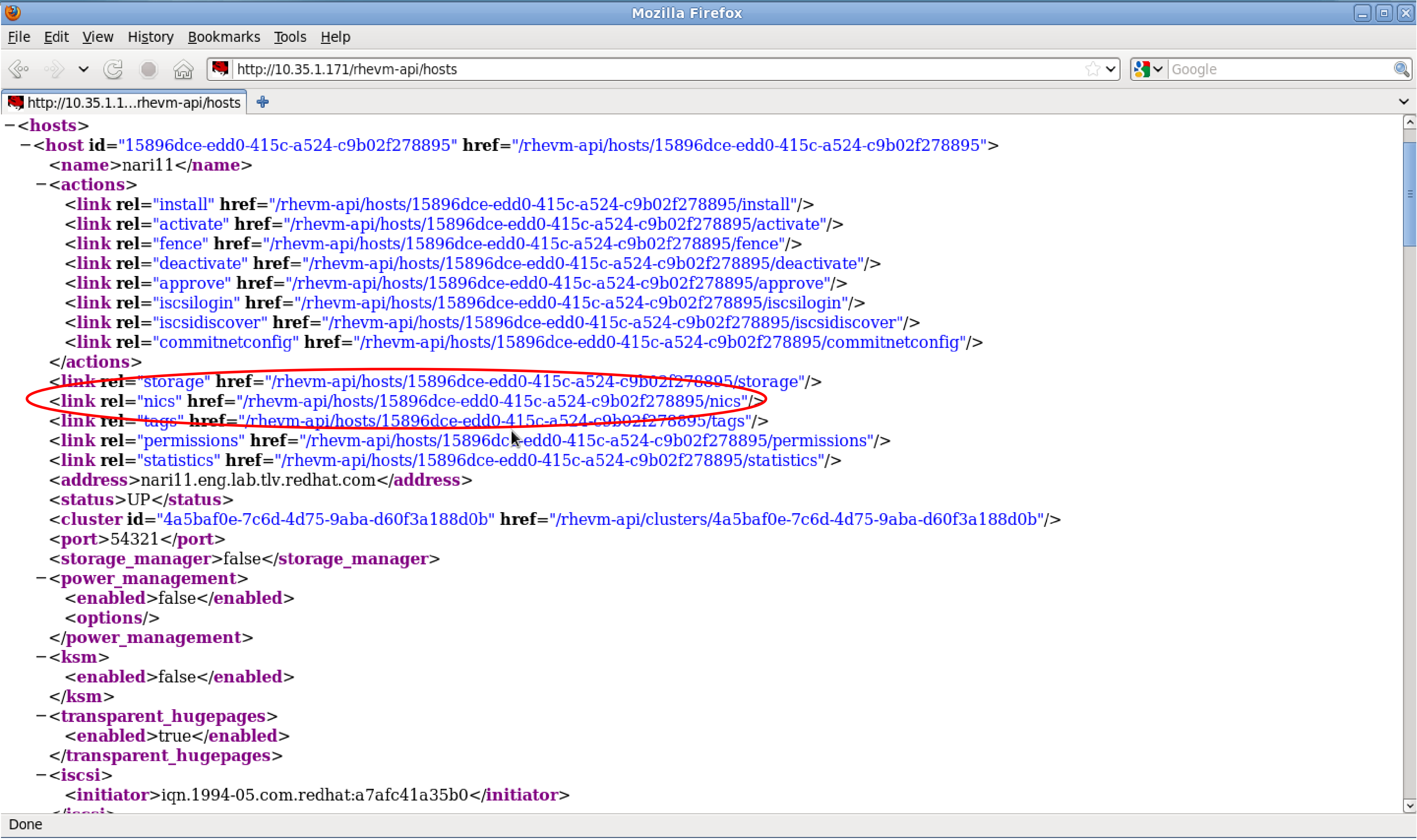
- Stands for Representational State Transfer
- Modeling entity actions around HTTP verbs
  - GET
  - PUT
  - POST
  - DELETE
- Still uses 'actions' for some state changes
- Self describes – entity navigation and actions

REST API


Mozilla Firefox
File Edit View History Bookmarks Tools Help
http://10.35.1.171/rhevm-api
Google
http://10.35.1.171/rhevm-api
Done

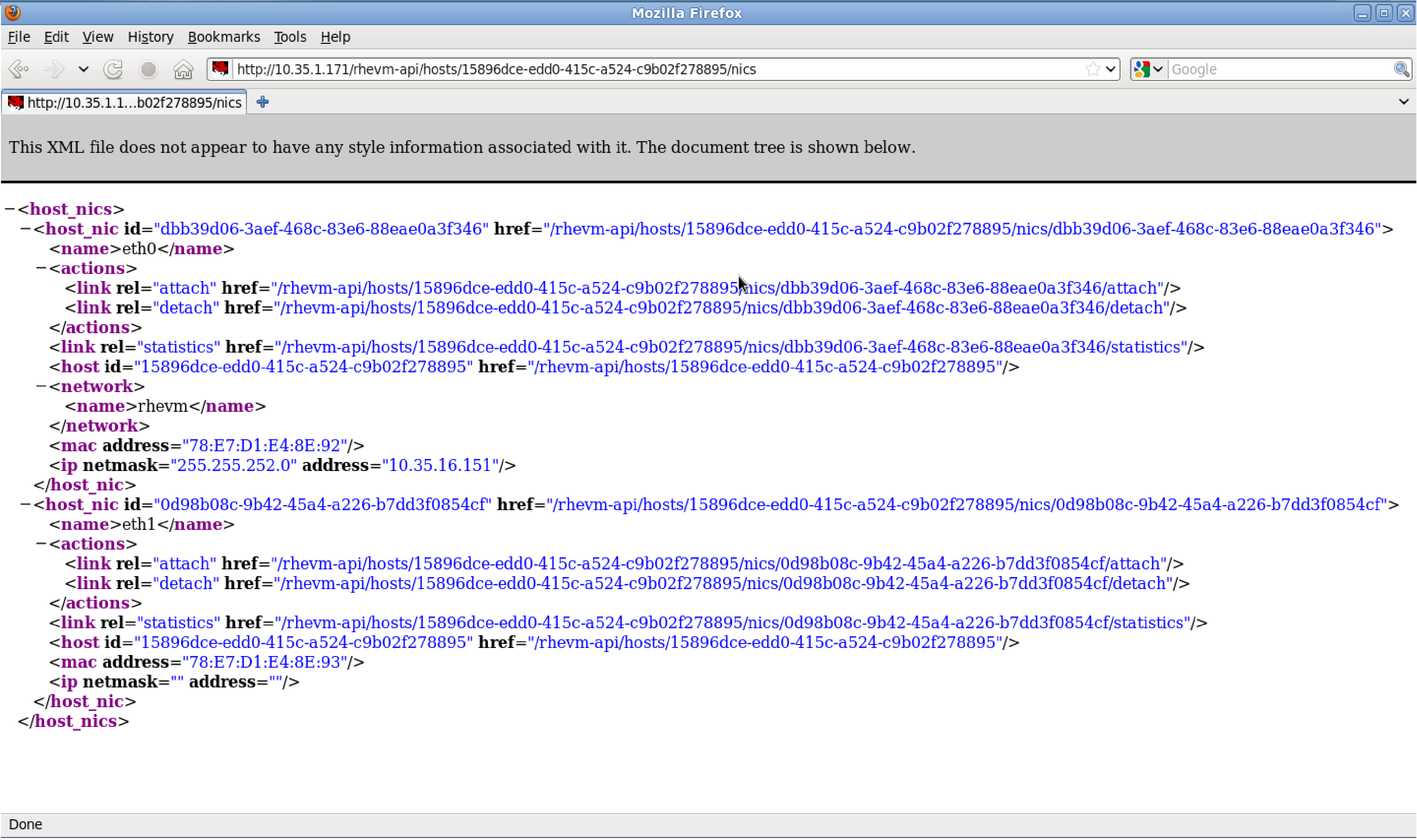
```
-<api>
   <link rel="capabilities" href="/rhevm-api/capabilities"/>
   <link rel="clusters" href="/rhevm-api/clusters"/>
   <link rel="clusters/search" href="/rhevm-api/clusters?search={query}"/>
   <link rel="datacenters" href="/rhevm-api/datacenters"/>
   <link rel="datacenters/search" href="/rhevm-api/datacenters?search={query}"/>
   <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"/>
   <link rel="templates" href="/rhevm-api/templates"/>
   <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>
```

Hosts Collection


Mozilla Firefox
File Edit View History Bookmarks Tools Help
http://10.35.1.171/rhevm-api/hosts
Google
http://10.35.1.1...rhevm-api/hosts
Done

```
−<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"/>
     <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>
```

Host networks collection


Mozilla Firefox
File
Edit
View
History
Bookmarks
Tools
Help
Google
http://10.35.1.1...b02f278895/nics
Done

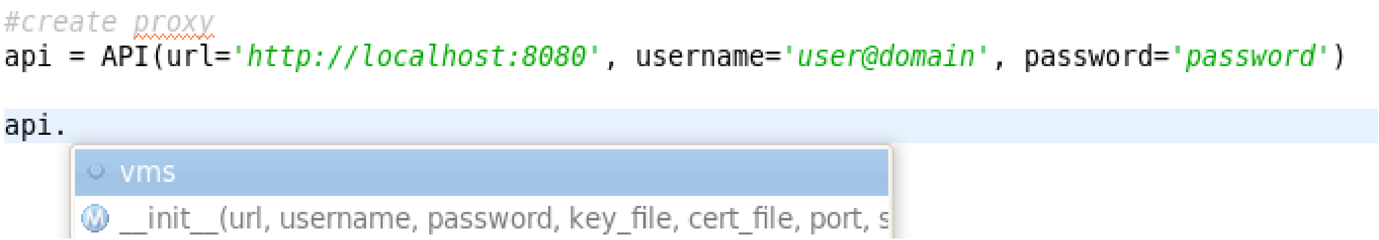
http://10.35.1.171/rhevm-api/hosts/15896dce-edd0-415c-a524-c9b02f278895/nics

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>
```

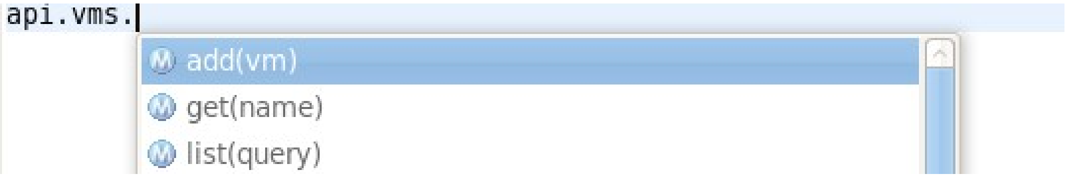
Python SDK

- Creating the proxy
- Listing all collections



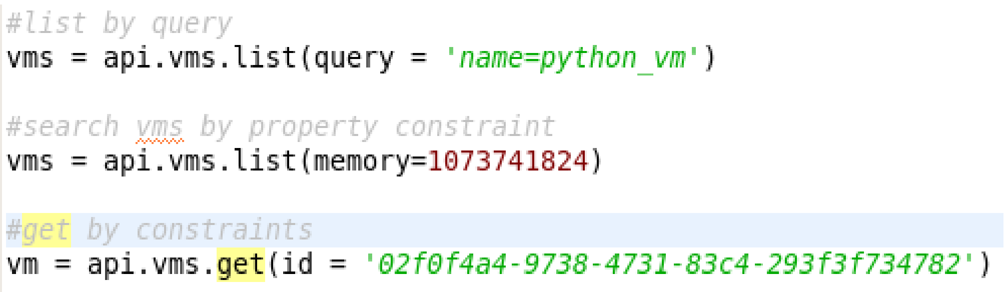
```
#create proxy
api = API(url='http://localhost:8080', username='user@domain', password='password')

api.
    vms
    __init__(url, username, password, key_file, cert_file, port, s
```

- Listing collection's methods.



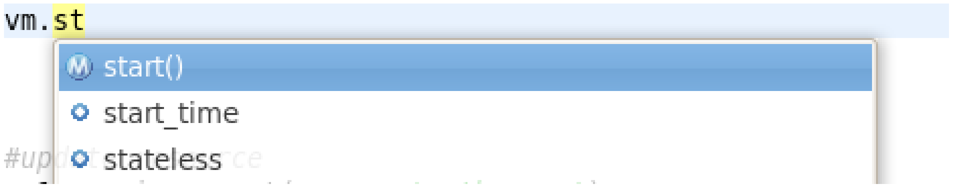
```
api.vms.
    add(vm)
    get(name)
    list(query)
```

- Querying collection with oVirt search engine.
- Querying collection by custom constraint.
- Querying collection for specific resource.



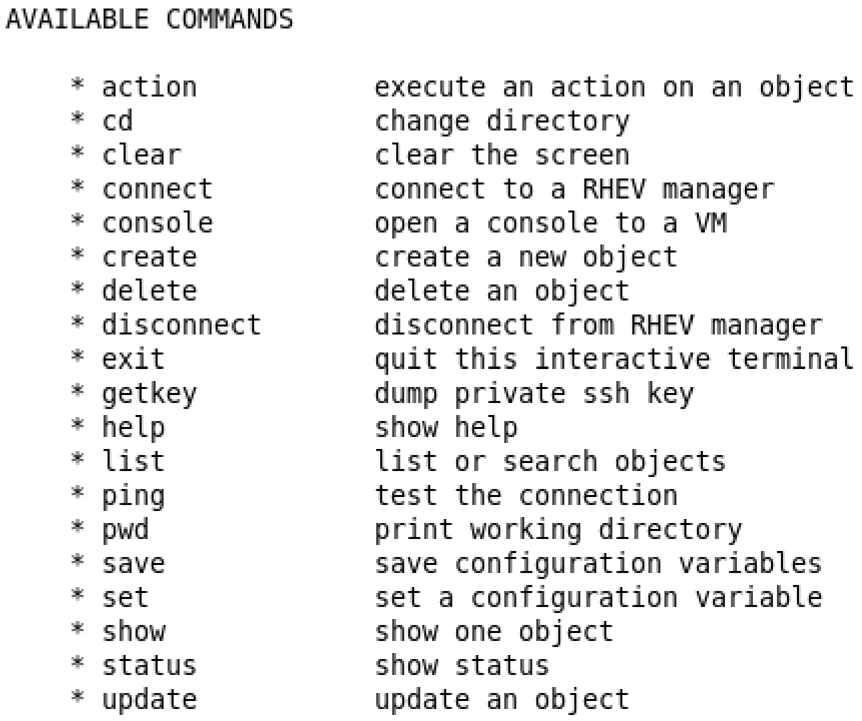
```
#list by query
vms = api.vms.list(query = 'name=python_vm')

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

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

- Accessing resource methods and properties.

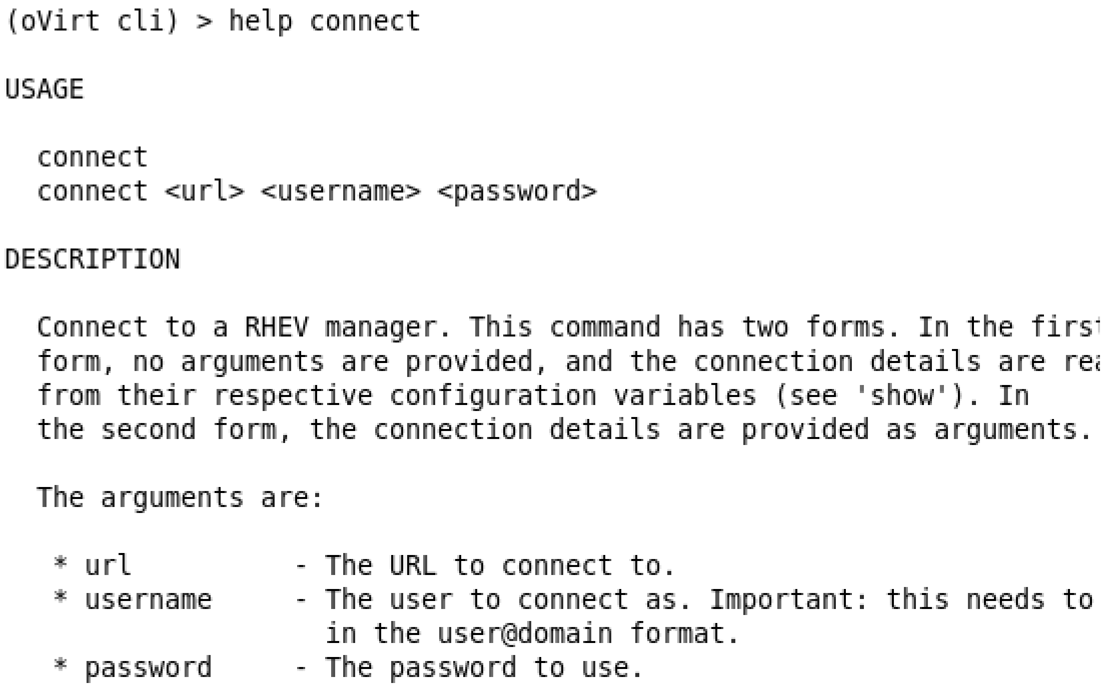


```
vm.st
    start()
    start_time
    stateless
```

oVirt CLI

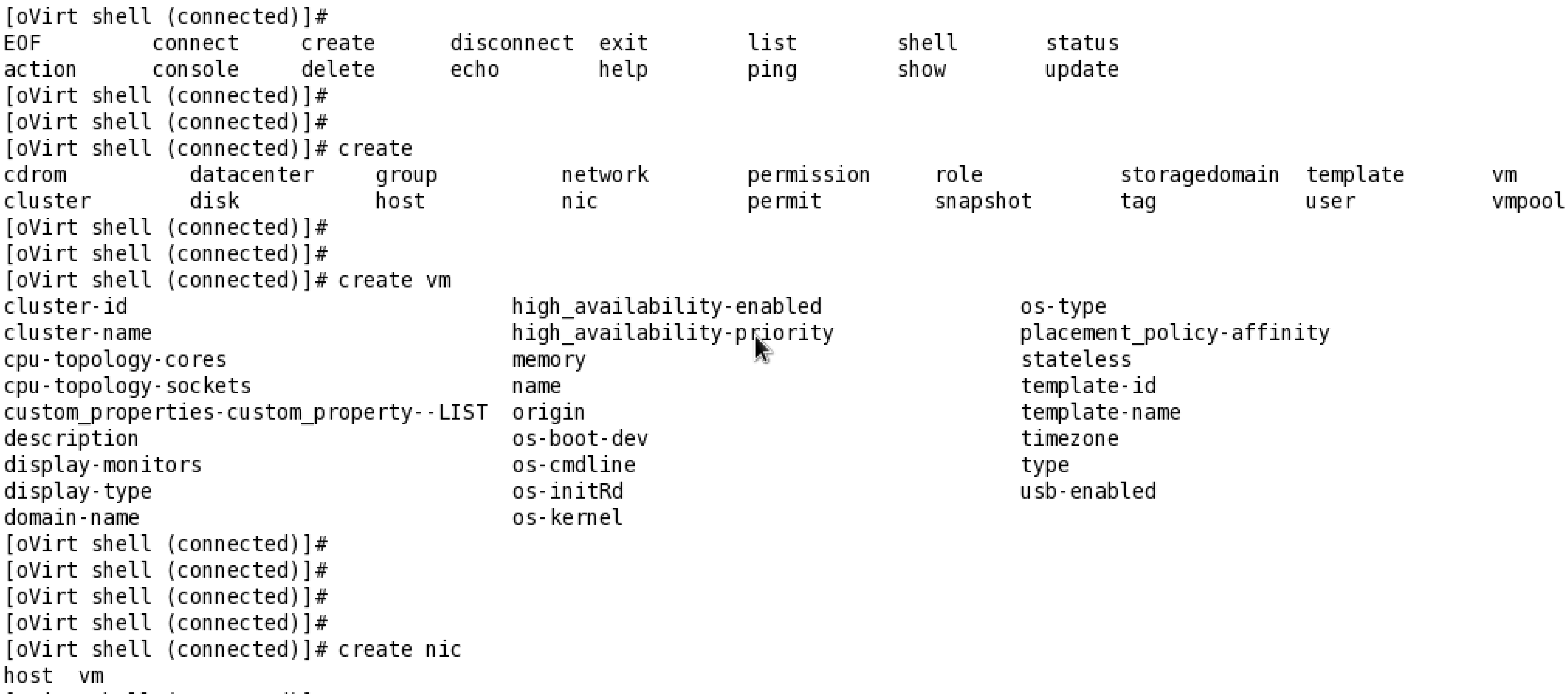


```
AVAILABLE COMMANDS

    * 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
```



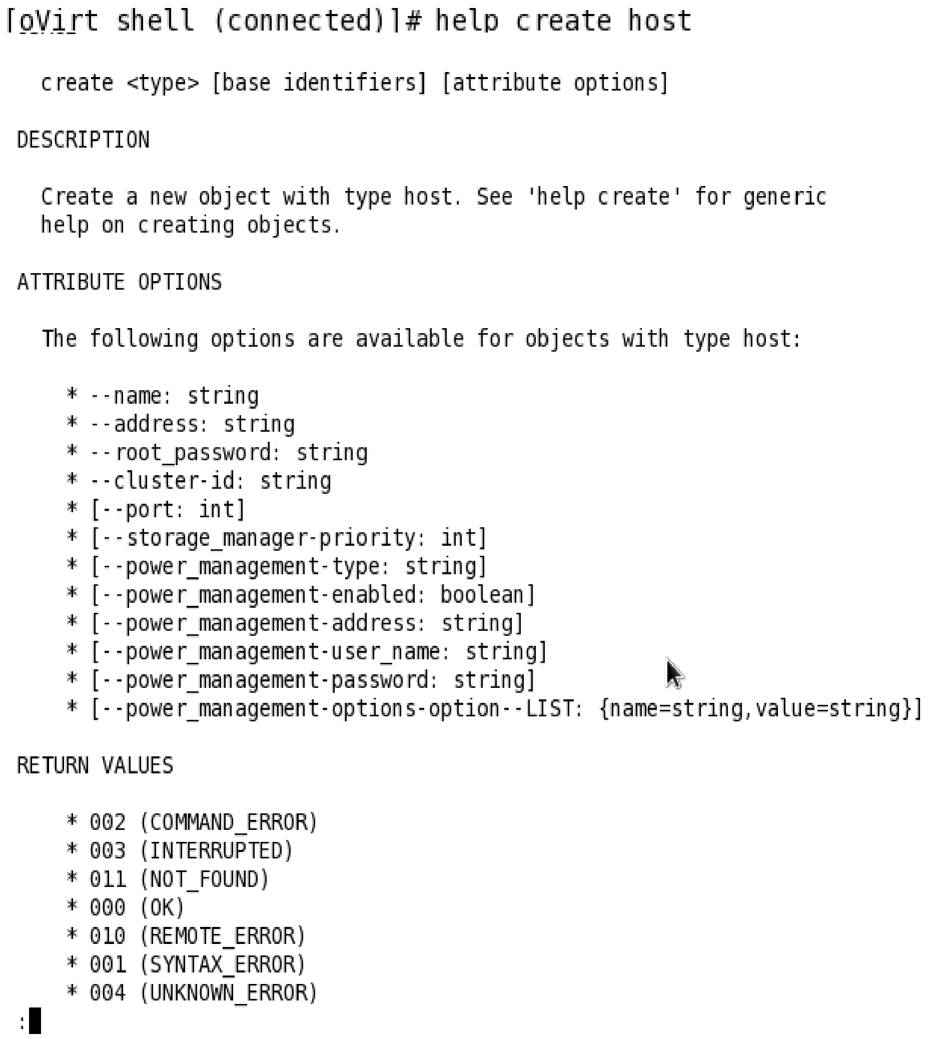
```
(oVirt cli) > help connect

USAGE

  connect
  connect <url> <username> <password>

DESCRIPTION

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

  The arguments are:

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

CLI - Smart Auto Completion

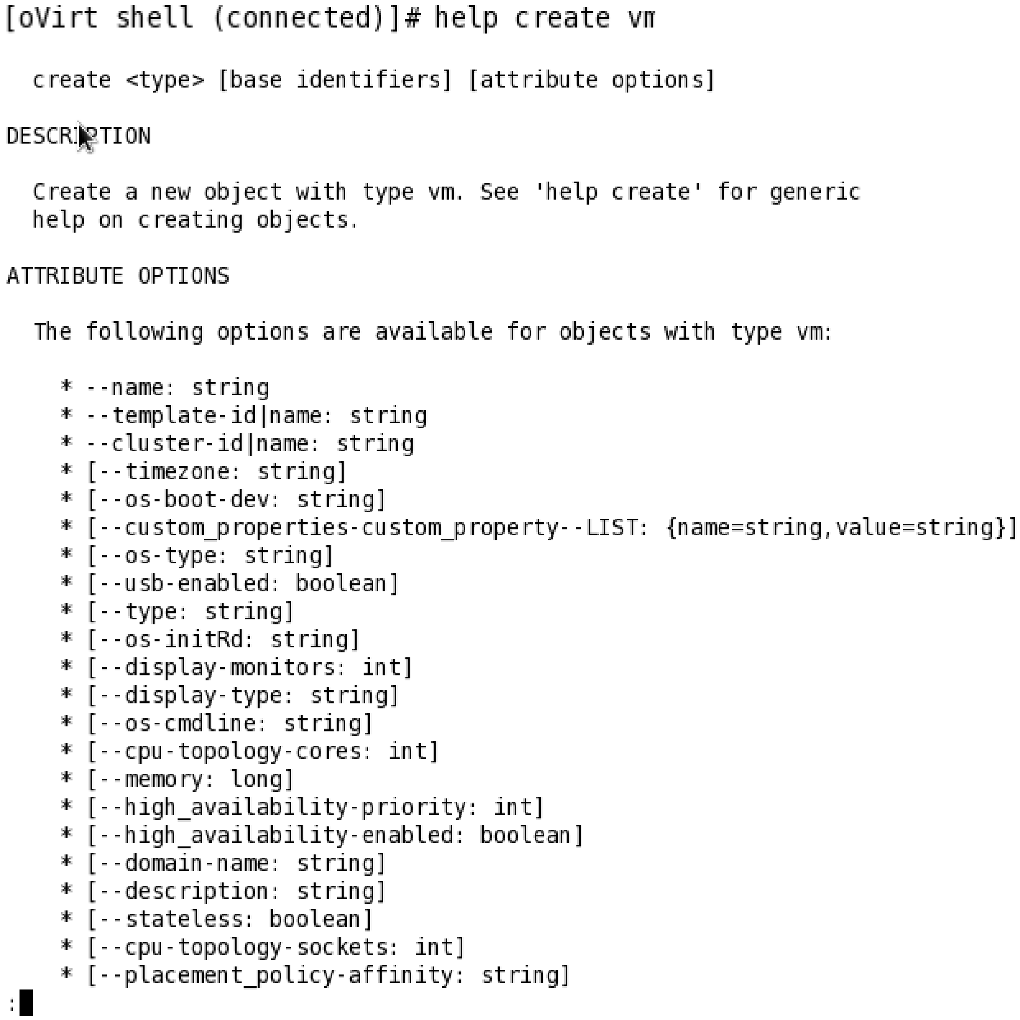


```
[oVirt shell (connected)]#
EOF         connect     create      disconnect  exit        list        shell       status
action      console     delete      echo        help        ping        show        update
[oVirt shell (connected)]#
[oVirt shell (connected)]#
[oVirt shell (connected)]# create
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                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

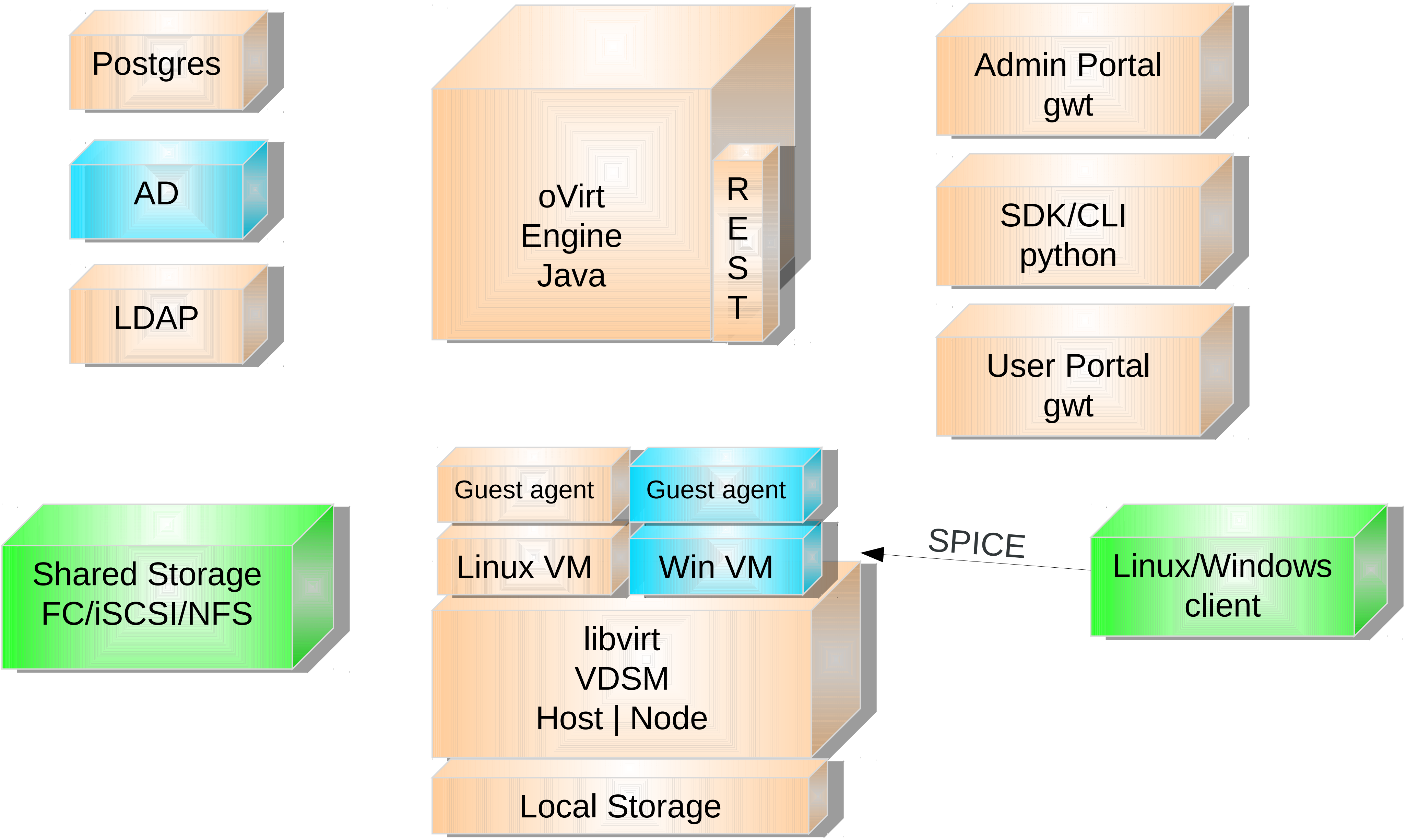


```
[oVirt shell (connected)]# help create host

  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]
:
```

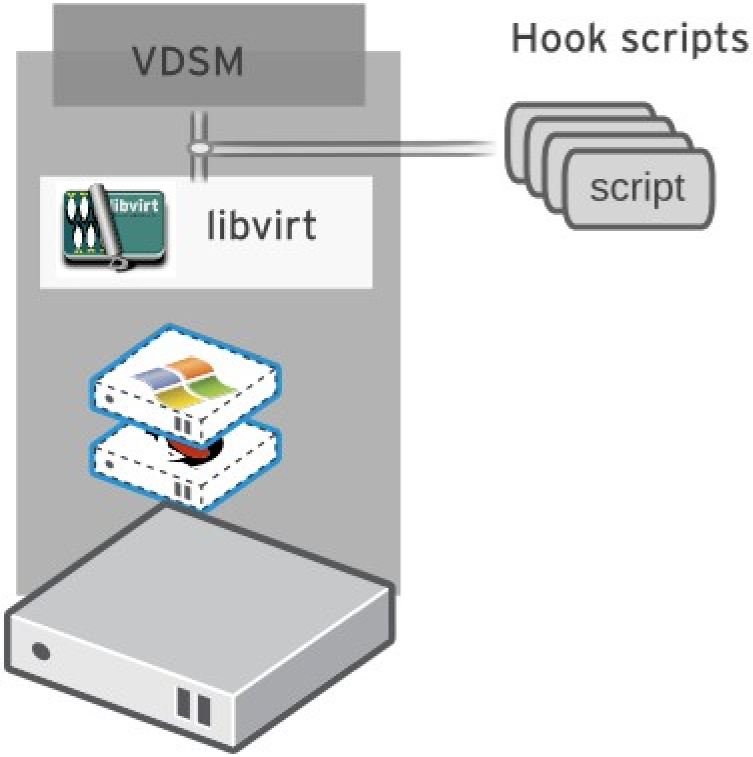
oVirt High Level Architecture


Postgres
AD
LDAP
oVirt
Engine
Java
R
E
S
T
Admin Portal
gwt
SDK/CLI
python
User Portal
gwt
Guest agent
Guest agent
Linux VM
Win VM
libvirt
VDSM
Host | Node
Local Storage
Shared Storage
FC/iSCSI/NFS
SPICE
Linux/Windows
client

Hooks

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

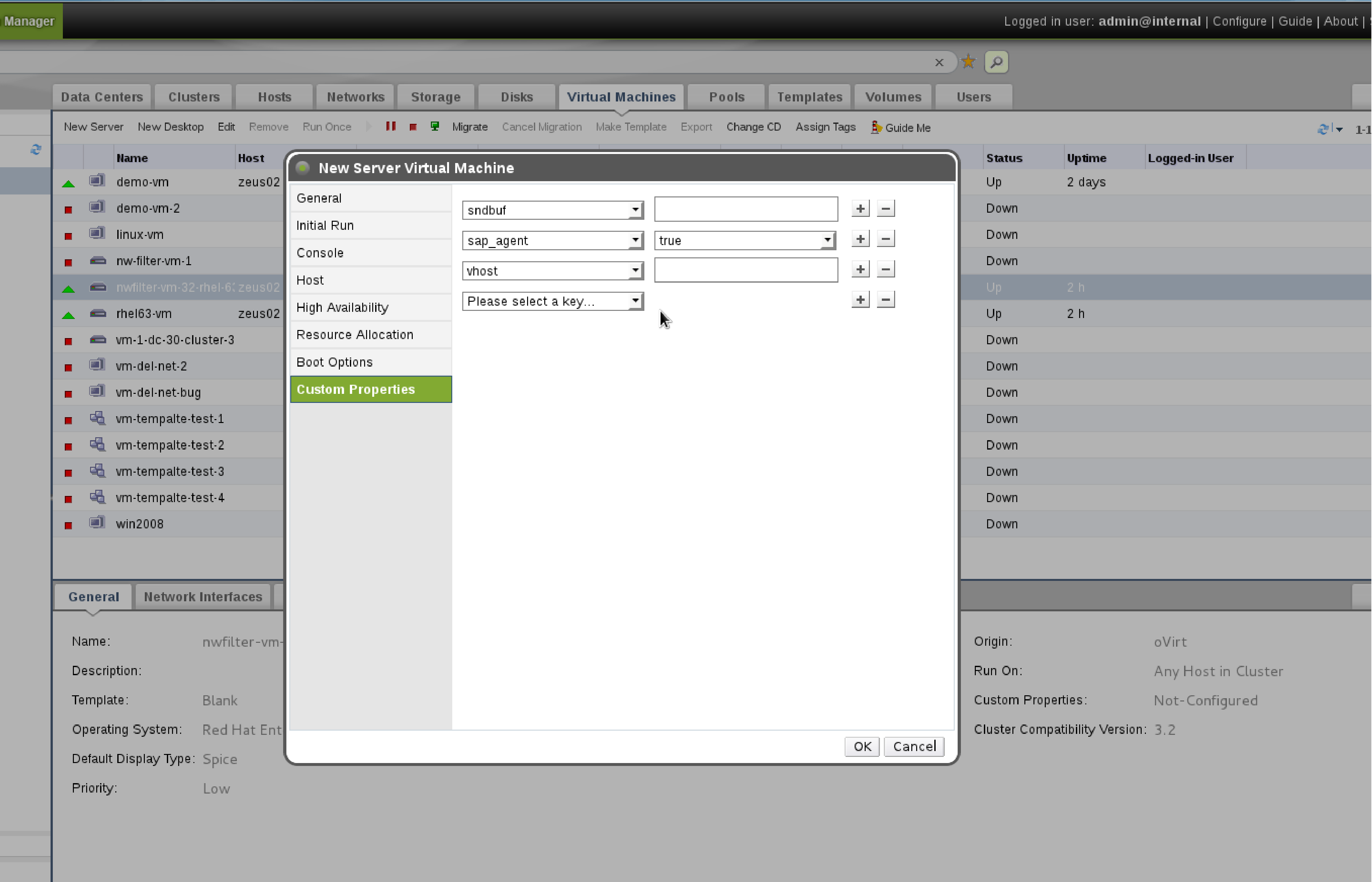
Hooks


VDSM
Hook scripts
libvirt
script

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



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
New Server Virtual Machine
General
Initial Run
Console
Host
High Availability
Resource Allocation
Boot Options
Custom Properties
OK
Cancel
General
Network Interfaces

Key	Value
sndbuf	
sap_agent	true
vhost	
Please select a key...	

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		

Name: nwfilter-vm-

Description:

Template: Blank

Operating System: Red Hat Ent

Default Display Type: Spice

Priority: Low

Origin: oVirt

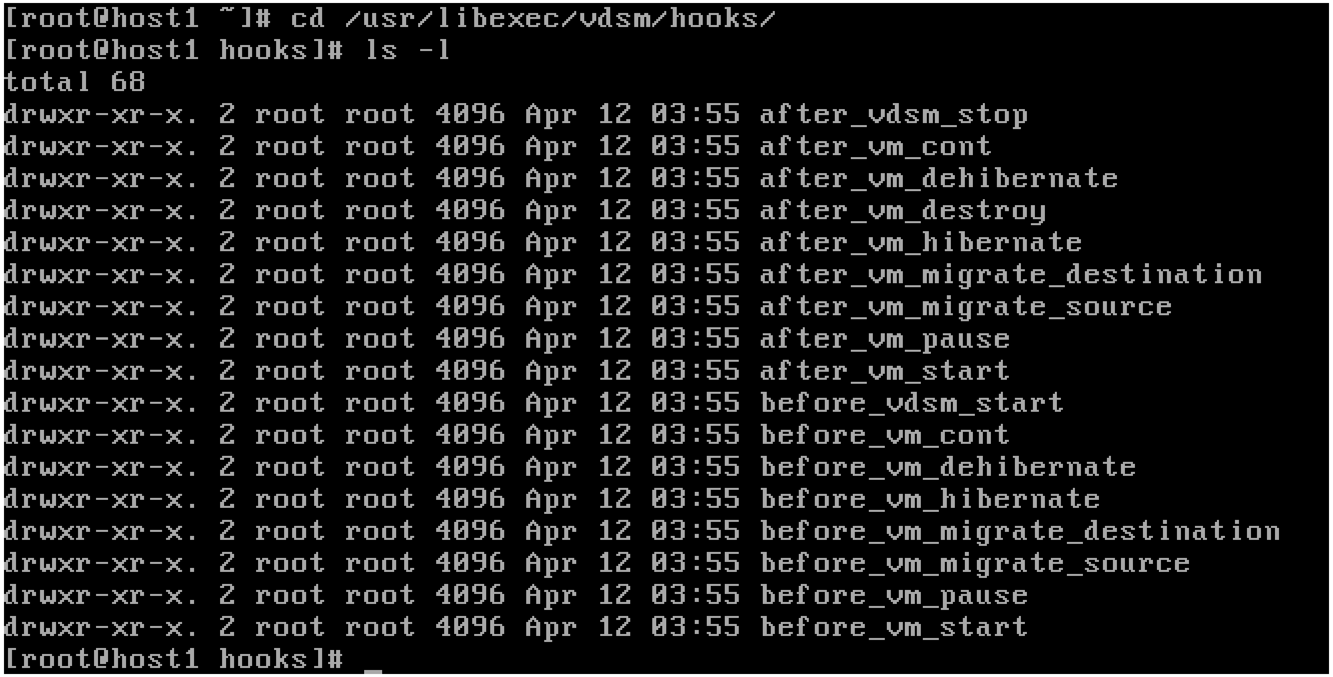
Run On: Any Host in Cluster

Custom Properties: Not-Configured

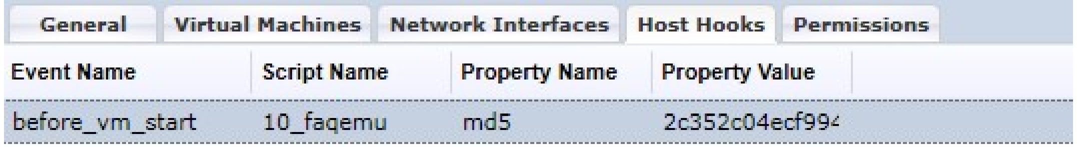
Cluster Compatibility Version: 3.2

Hooks

Hooks installed in /usr/libexec/vdsm/hooks

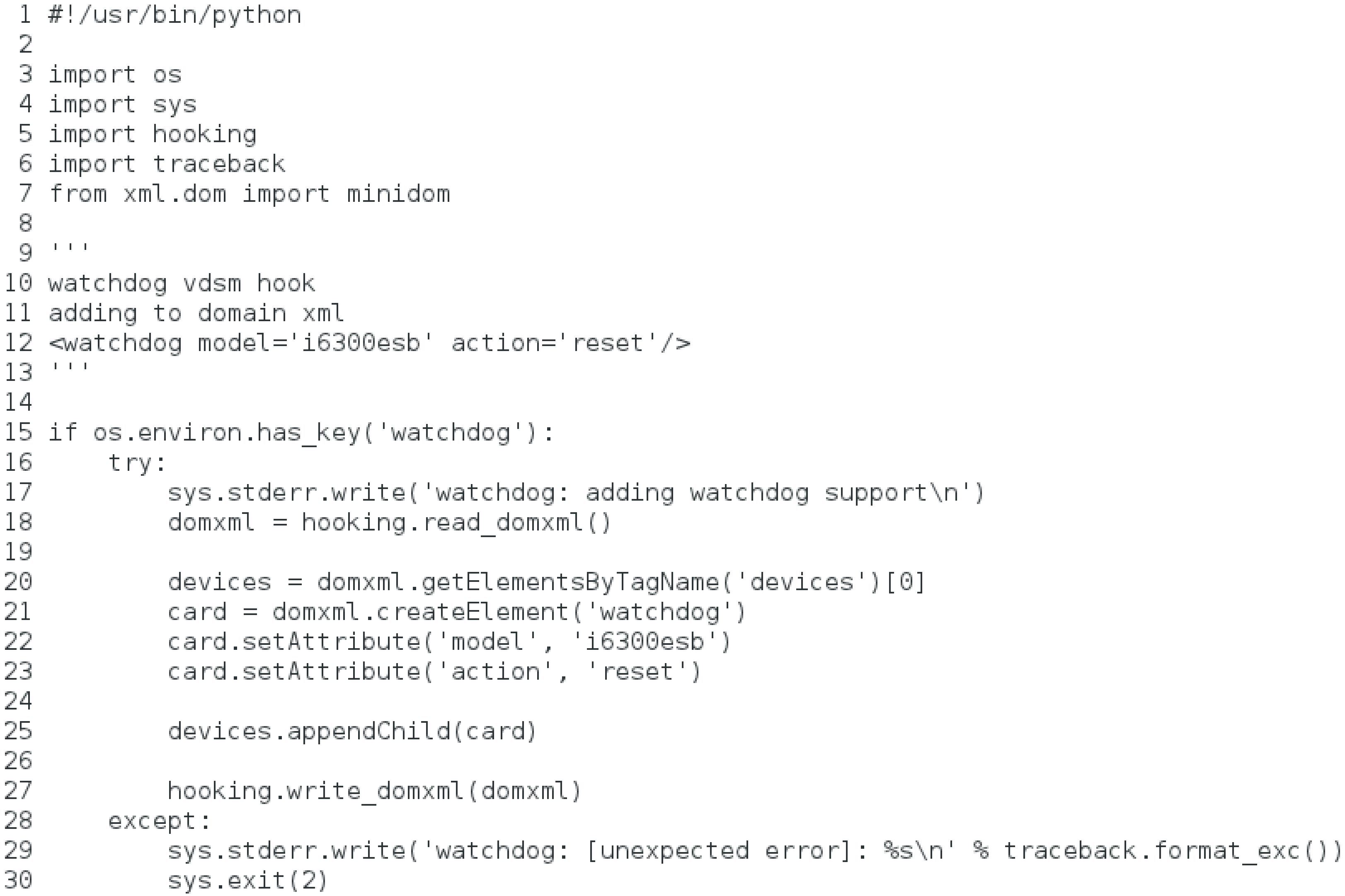


```
[root@host1 ~]# cd /usr/libexec/vdsm/hooks/
[root@host1 hooks]# ls -l
total 68
drwxr-xr-x. 2 root root 4096 Apr 12 03:55 after_vdsm_stop
drwxr-xr-x. 2 root root 4096 Apr 12 03:55 after_vm_cont
drwxr-xr-x. 2 root root 4096 Apr 12 03:55 after_vm_dehibernate
drwxr-xr-x. 2 root root 4096 Apr 12 03:55 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]# _
```



Event Name	Script Name	Property Name	Property Value
before_vm_start	10_faqemu	md5	2c352c04ecf99

Hooks



```
#!/usr/bin/python

import os
import sys
import hooking
import traceback
from xml.dom import minidom

'''
watchdog vdsm hook
adding to domain xml
<watchdog model='i6300esb' action='reset'/>
'''

if os.environ.has_key('watchdog'):
    try:
        sys.stderr.write('watchdog: adding watchdog support\n')
        domxml = hooking.read_domxml()

        devices = domxml.getElementsByTagName('devices')[0]
        card = domxml.createElement('watchdog')
        card.setAttribute('model', 'i6300esb')
        card.setAttribute('action', 'reset')

        devices.appendChild(card)

        hooking.write_domxml(domxml)
    except:
        sys.stderr.write('watchdog: [unexpected error]: %s\n' % traceback.format_exc())
        sys.exit(2)
```

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
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oVirt

THANK YOU !

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