oVirt Introduction

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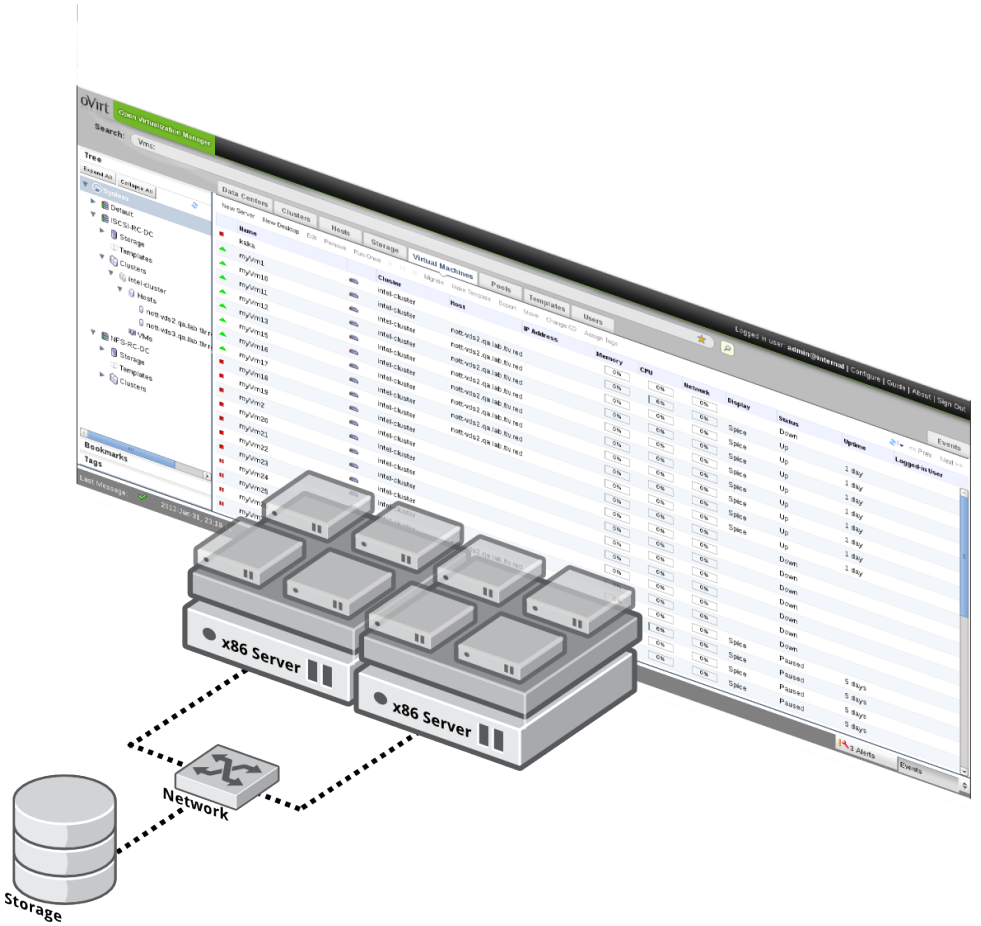
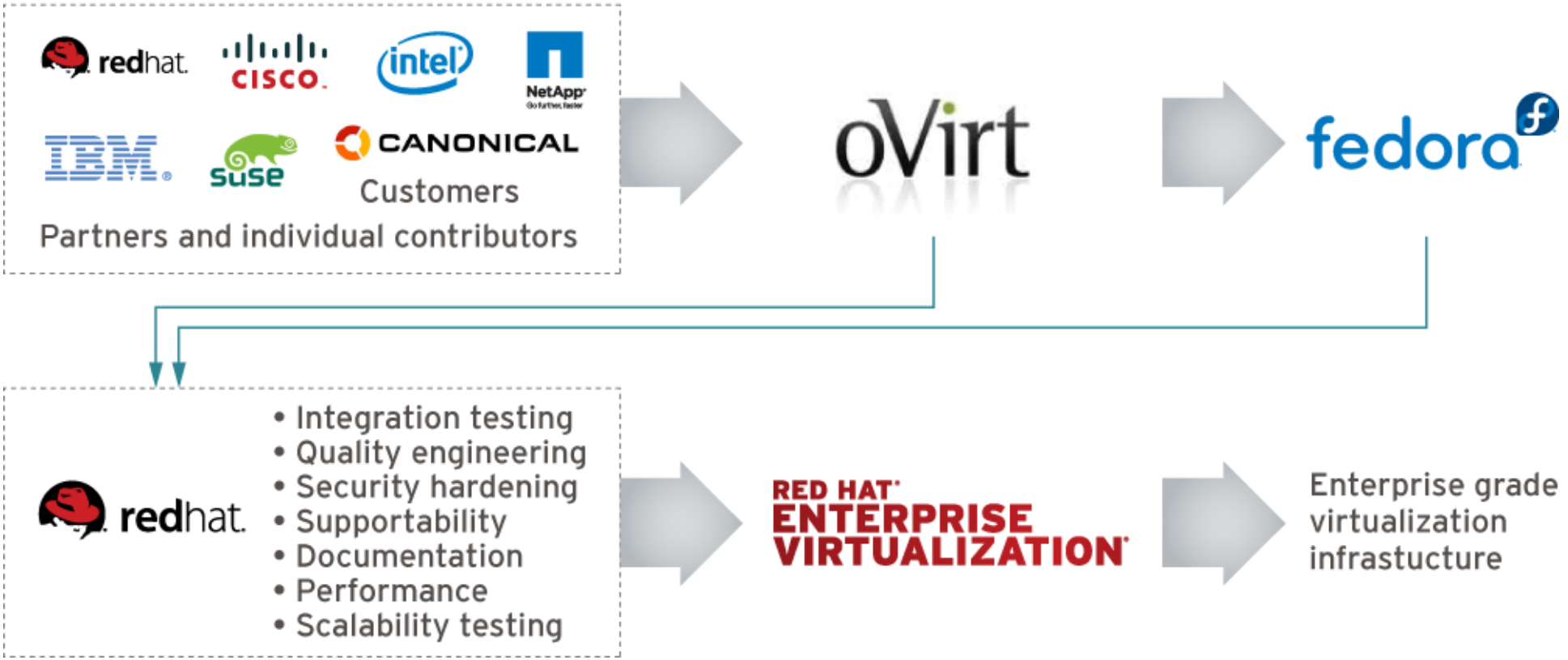
Red Hat

What is oVirt?

- Large scale, centralized management for server and desktop virtualization
- Based on leading performance, scalability and security infrastructure technologies
- Provides an open source alternative to vCenter/vSphere



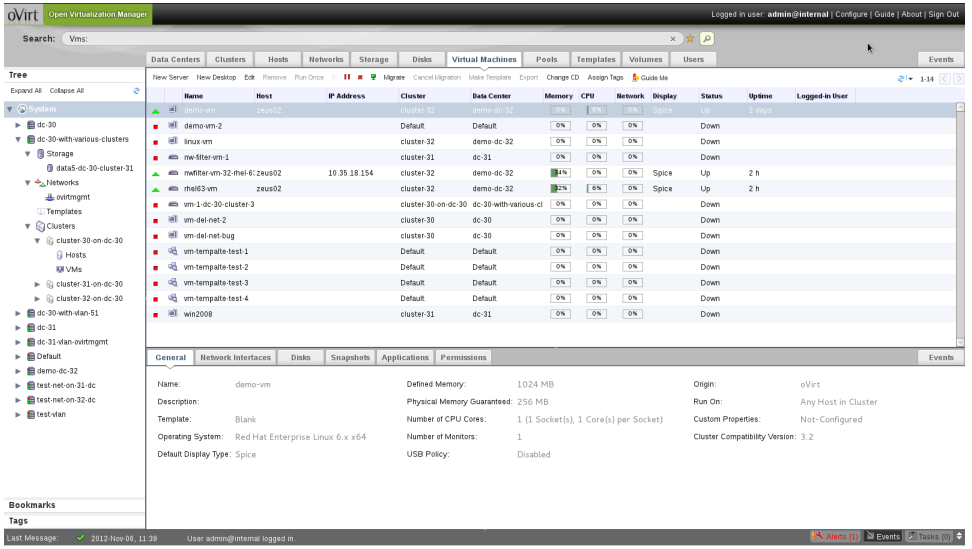
OPEN VIRTUALIZATION MANAGEMENT



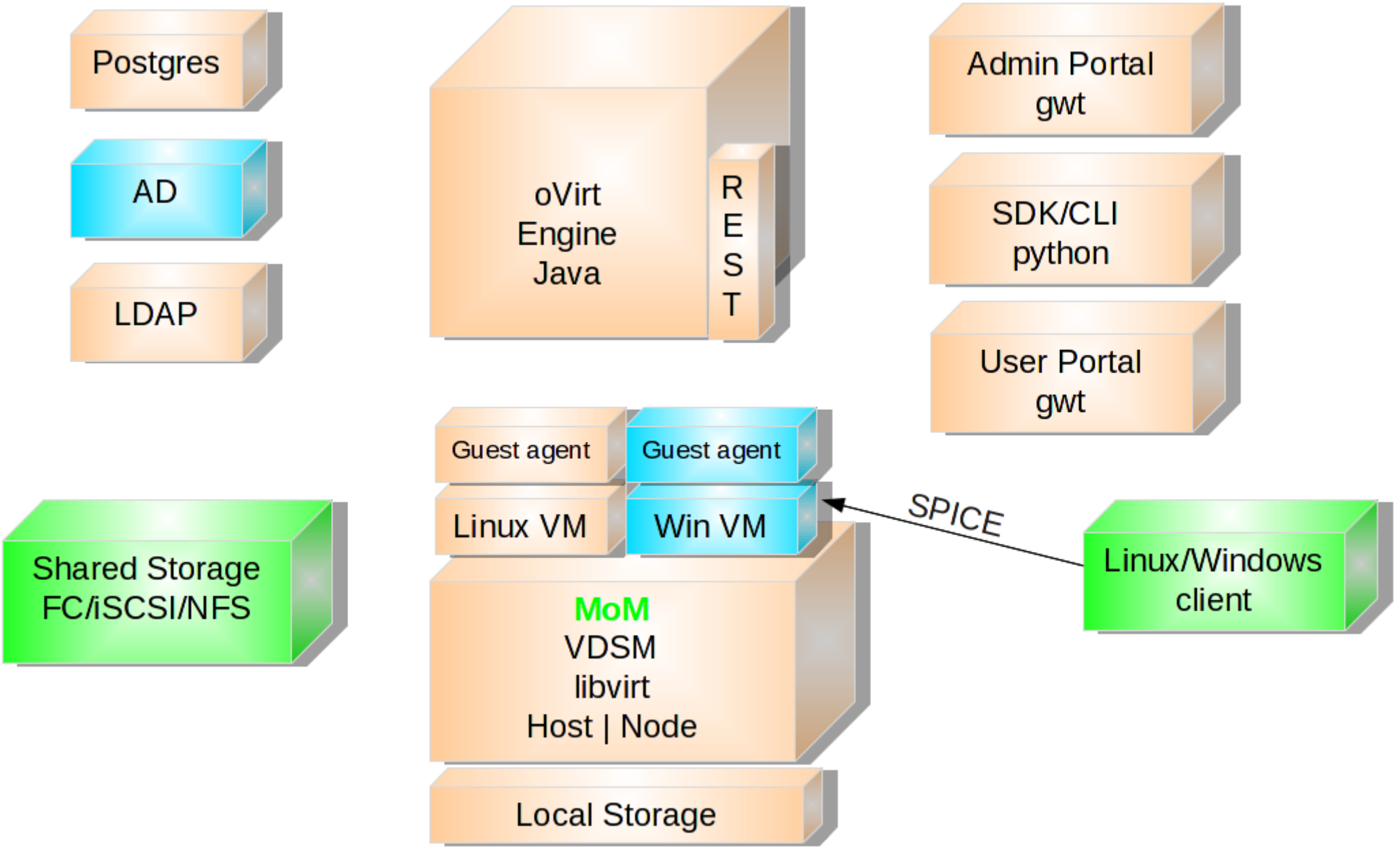
Virtualization Management the oVirt way

oVirt Engine

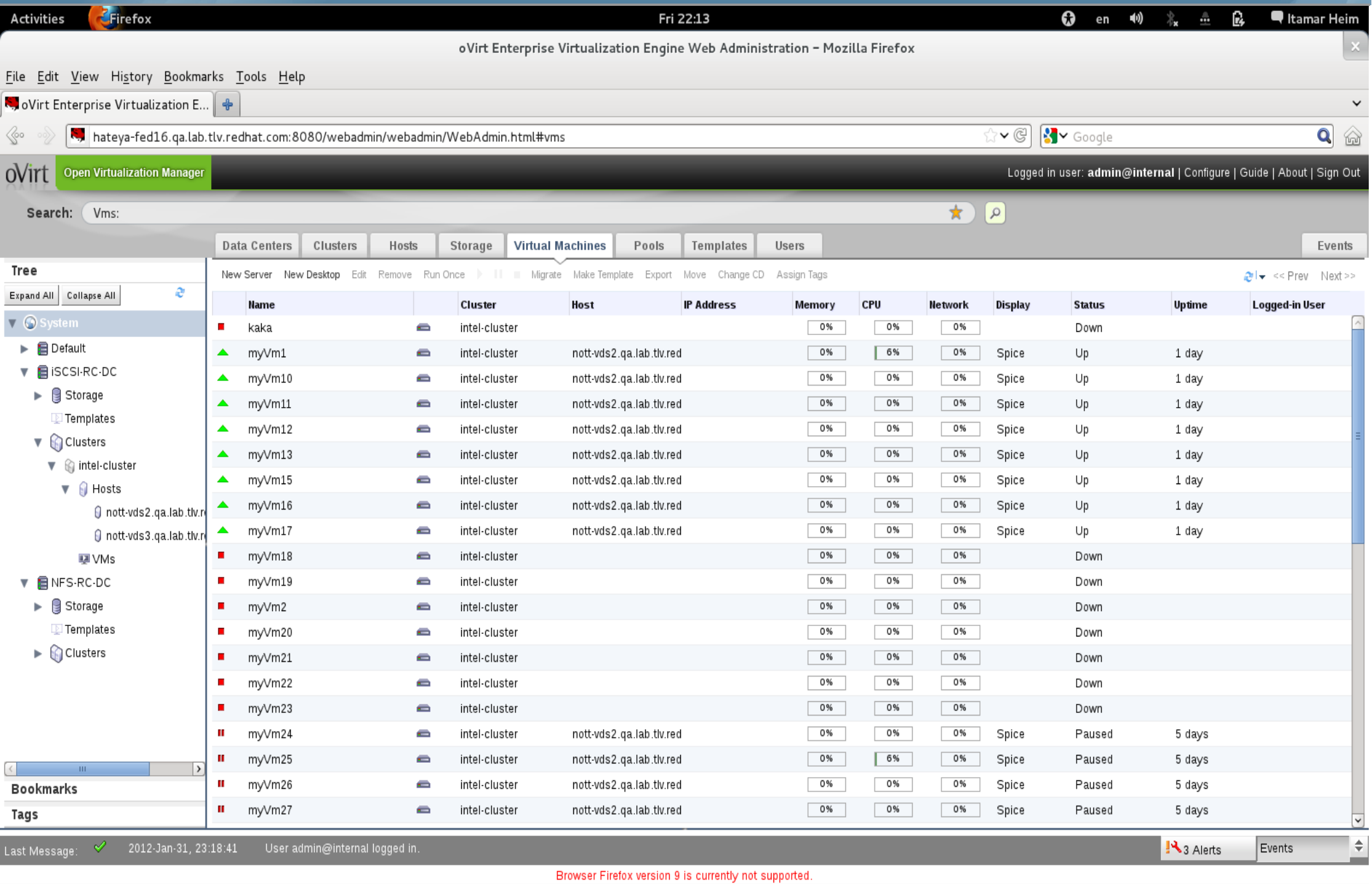
- JBoss-based Java application
- Communicates with hypervisor nodes
- Manages VM lifecycle
- Controlled with:
  - Admin Portal
  - User Portal
  - REST API
  - Python SDK
  - Command Line Shell



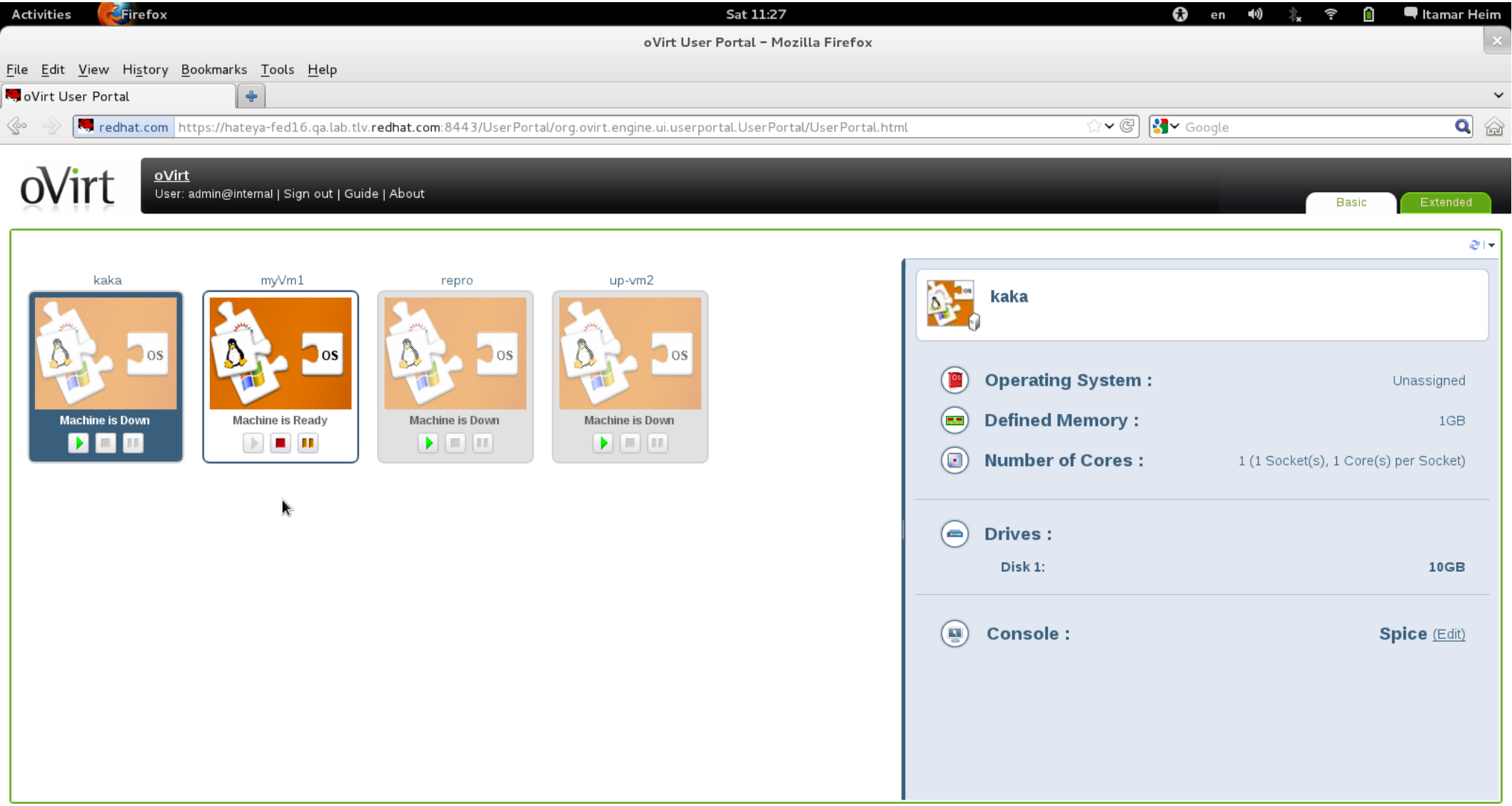
Overview: architecture



Administration Console

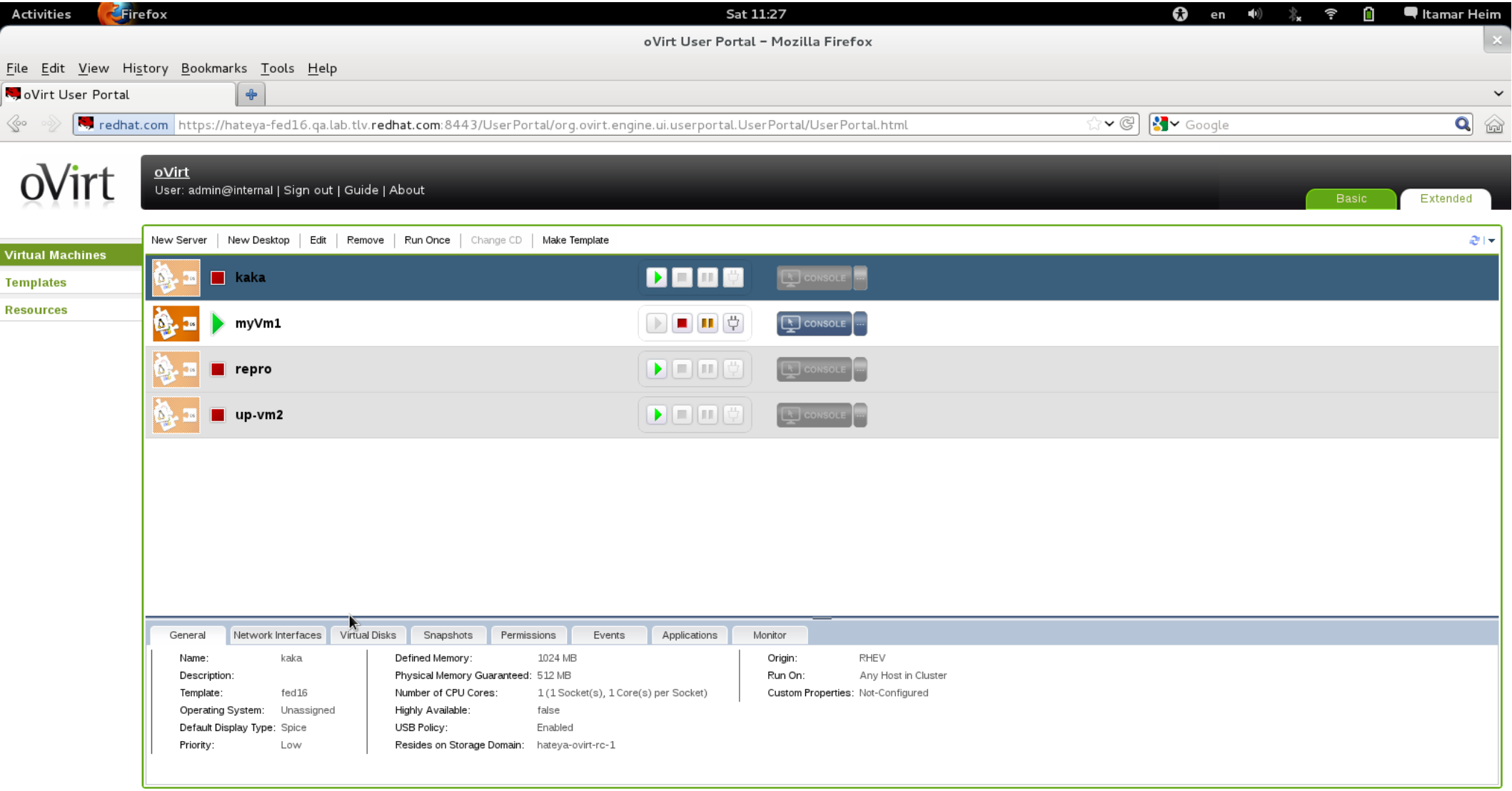


User Portal



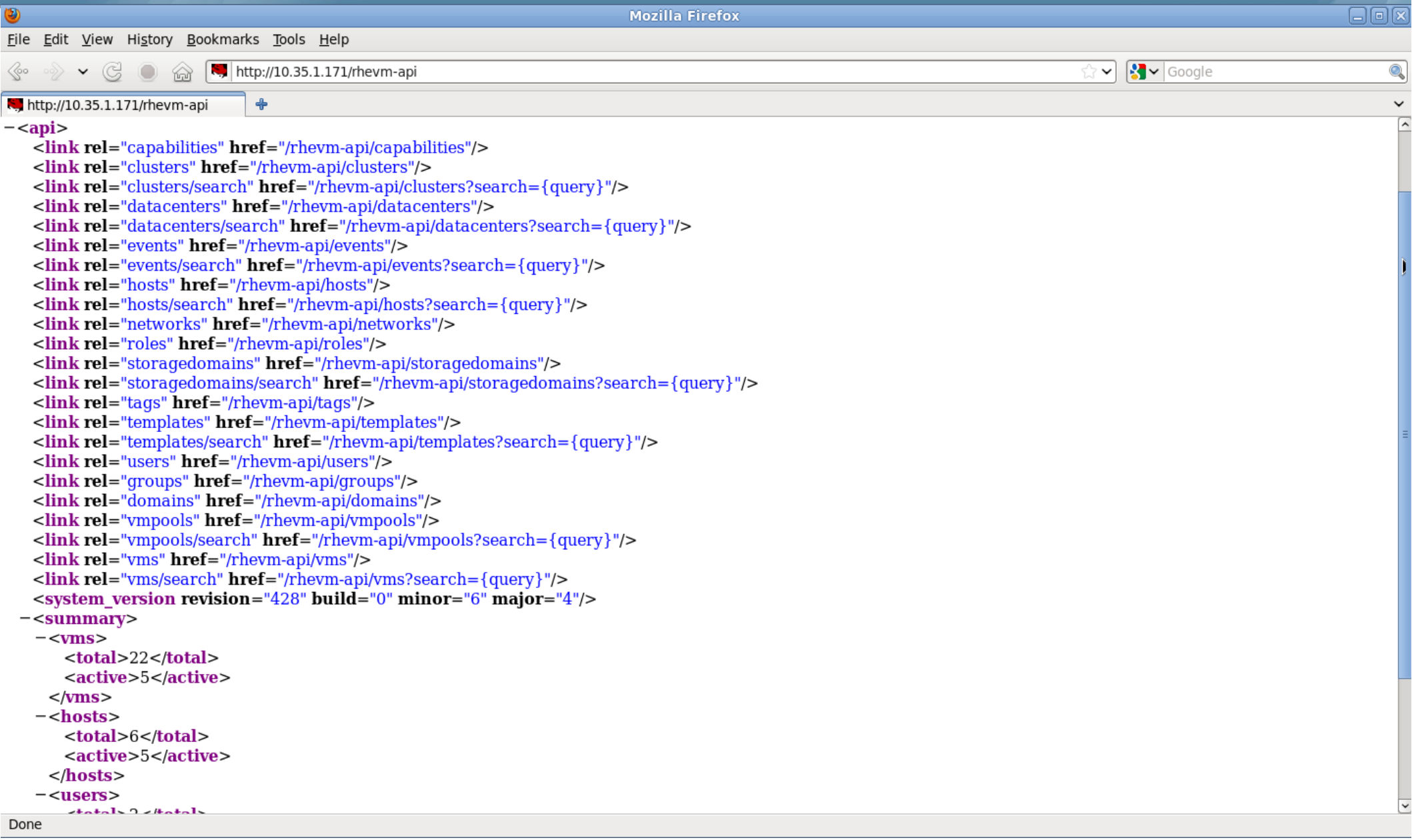
Virtualization Management the oVirt way

Self Provisioning Portal



Virtualization Management the oVirt way

REST API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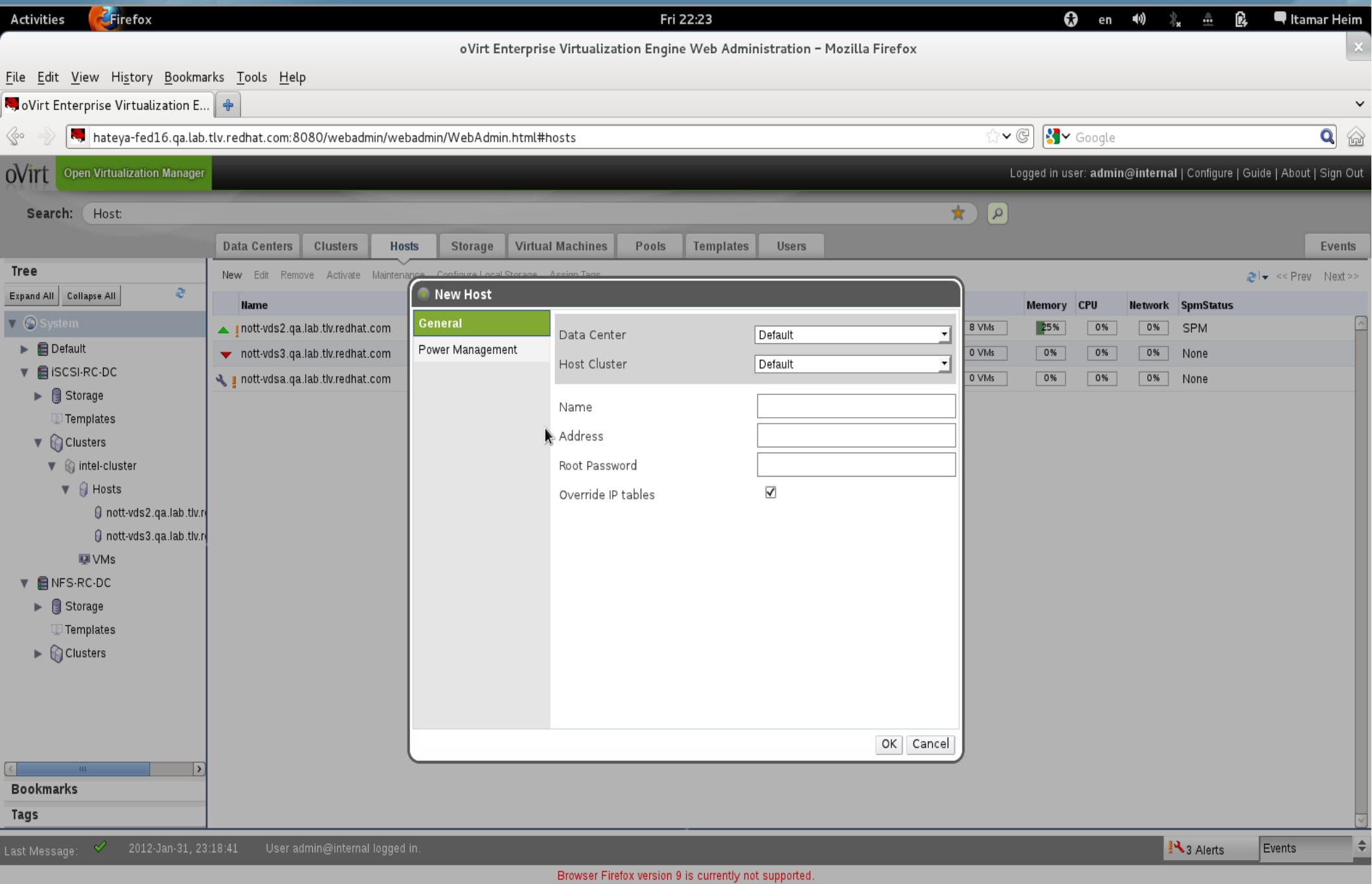
Add Host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Firefox
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en
Itamar Heim
oVirt Enterprise Virtualization Engine Web Administration – Mozilla Firefox
File Edit View History Bookmarks Tools Help
oVirt Enterprise Virtualization E...
hateya-fed16.qa.lab.tlv.redhat.com:8080/webadmin/webadmin/WebAdmin.html#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
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
<< Prev
Next >>
Name
Memory
CPU
Network
SpmStatus
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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
General
Power Management
Data Center
Default
Host Cluster
Default
Name
Address
Root Password
Override IP tables
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Cancel
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User admin@internal logged in.
3 Alerts
Events
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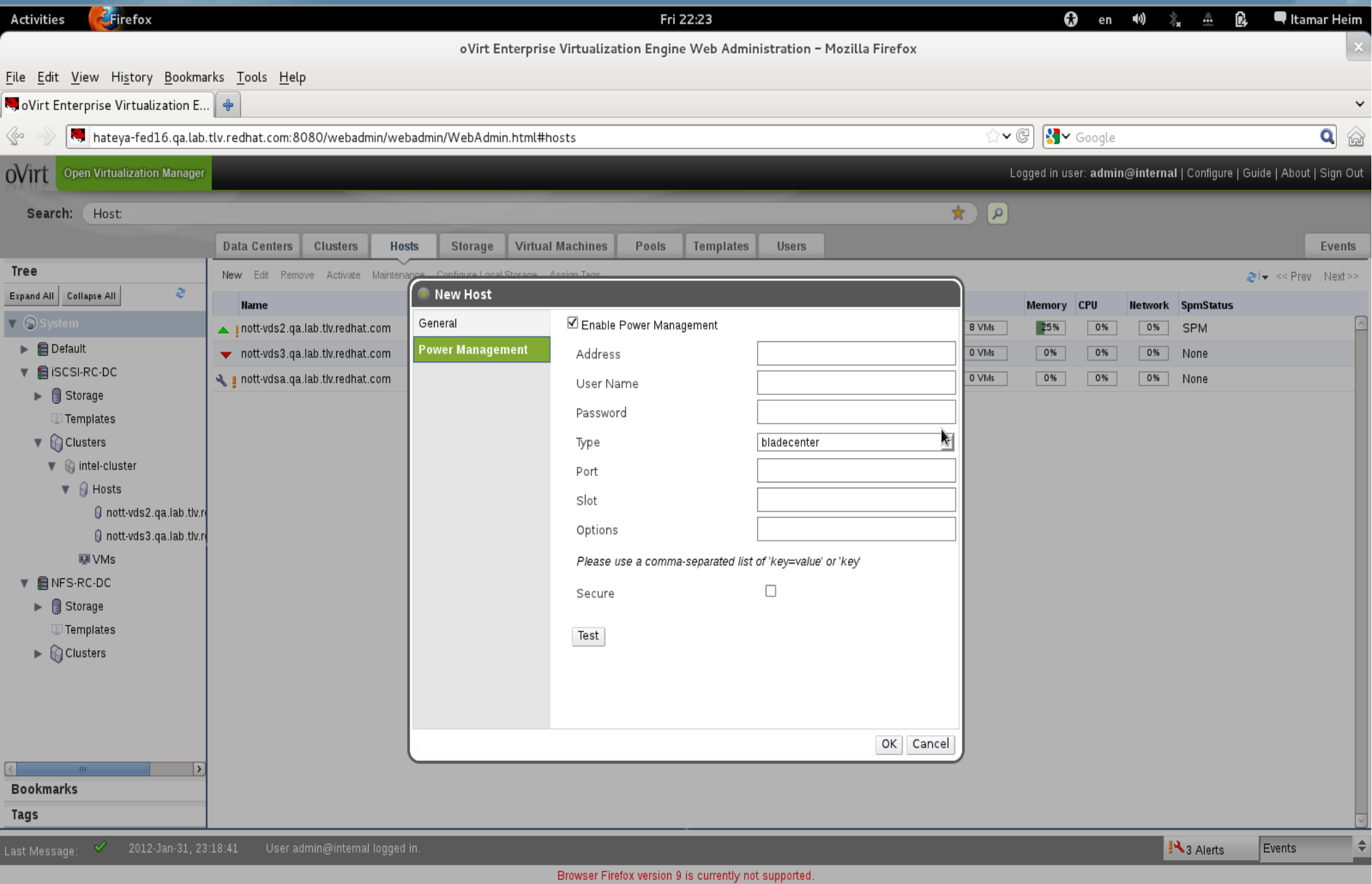
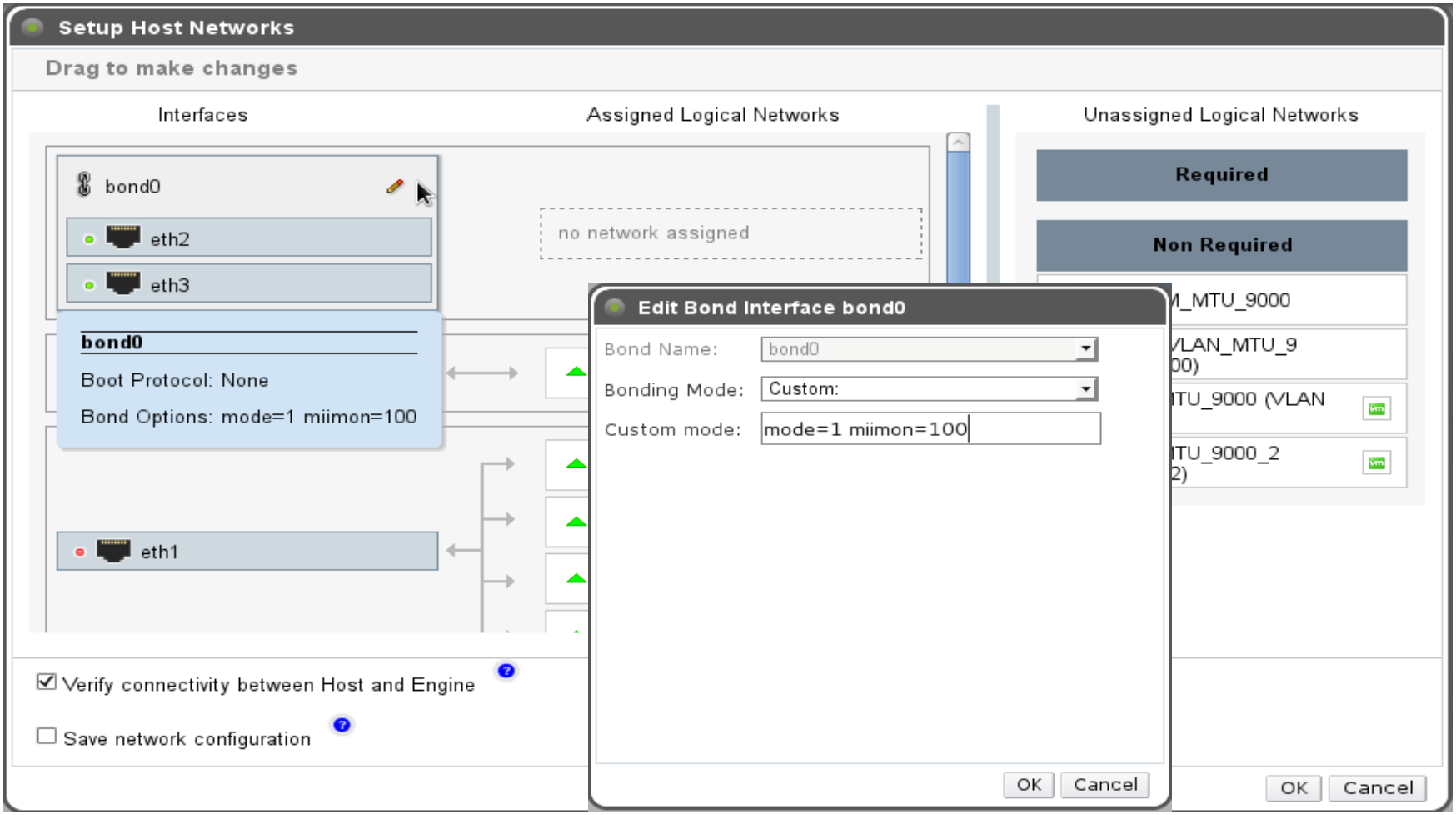
Power Management

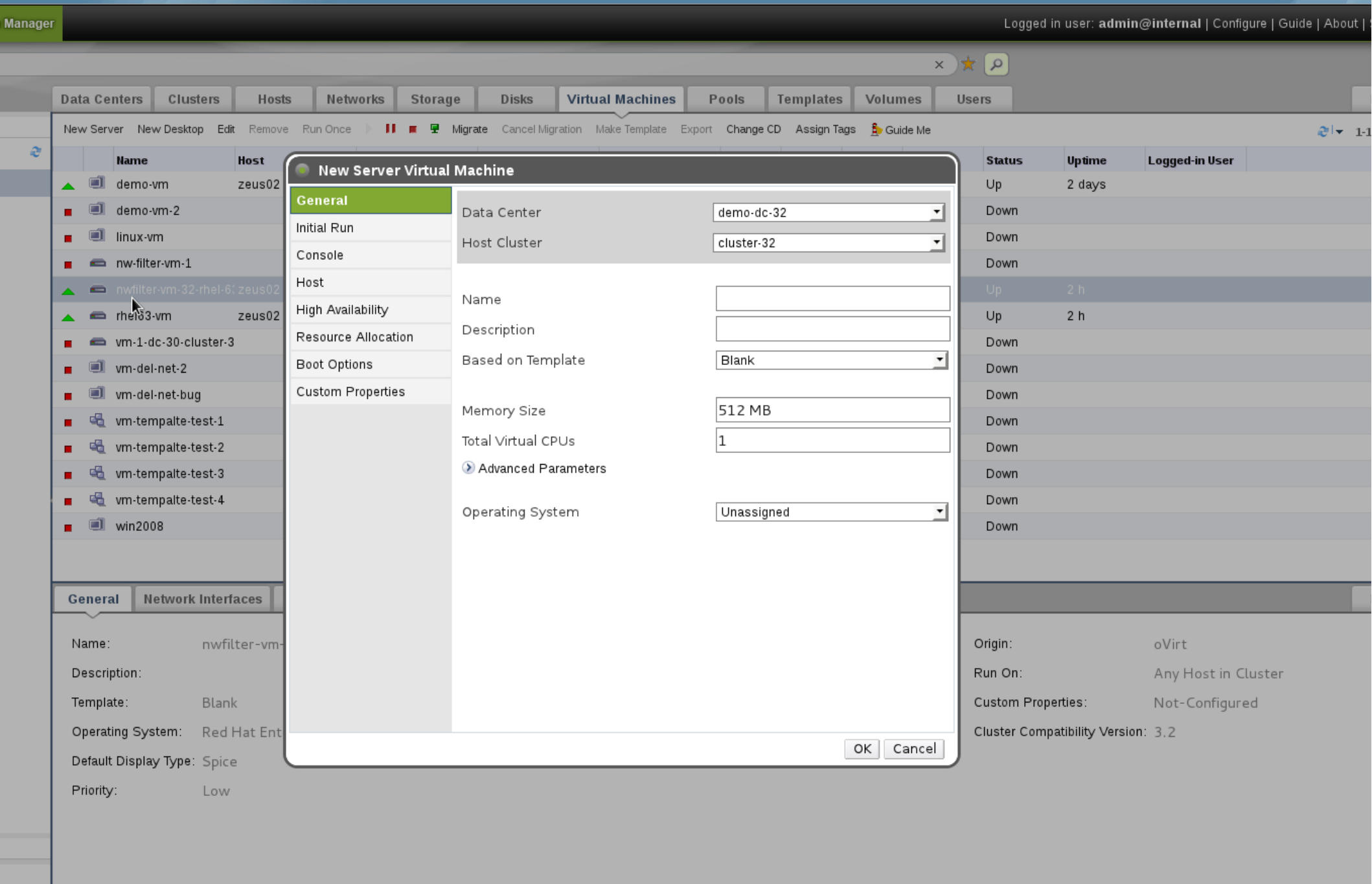


Setup Networks: Edit Bond

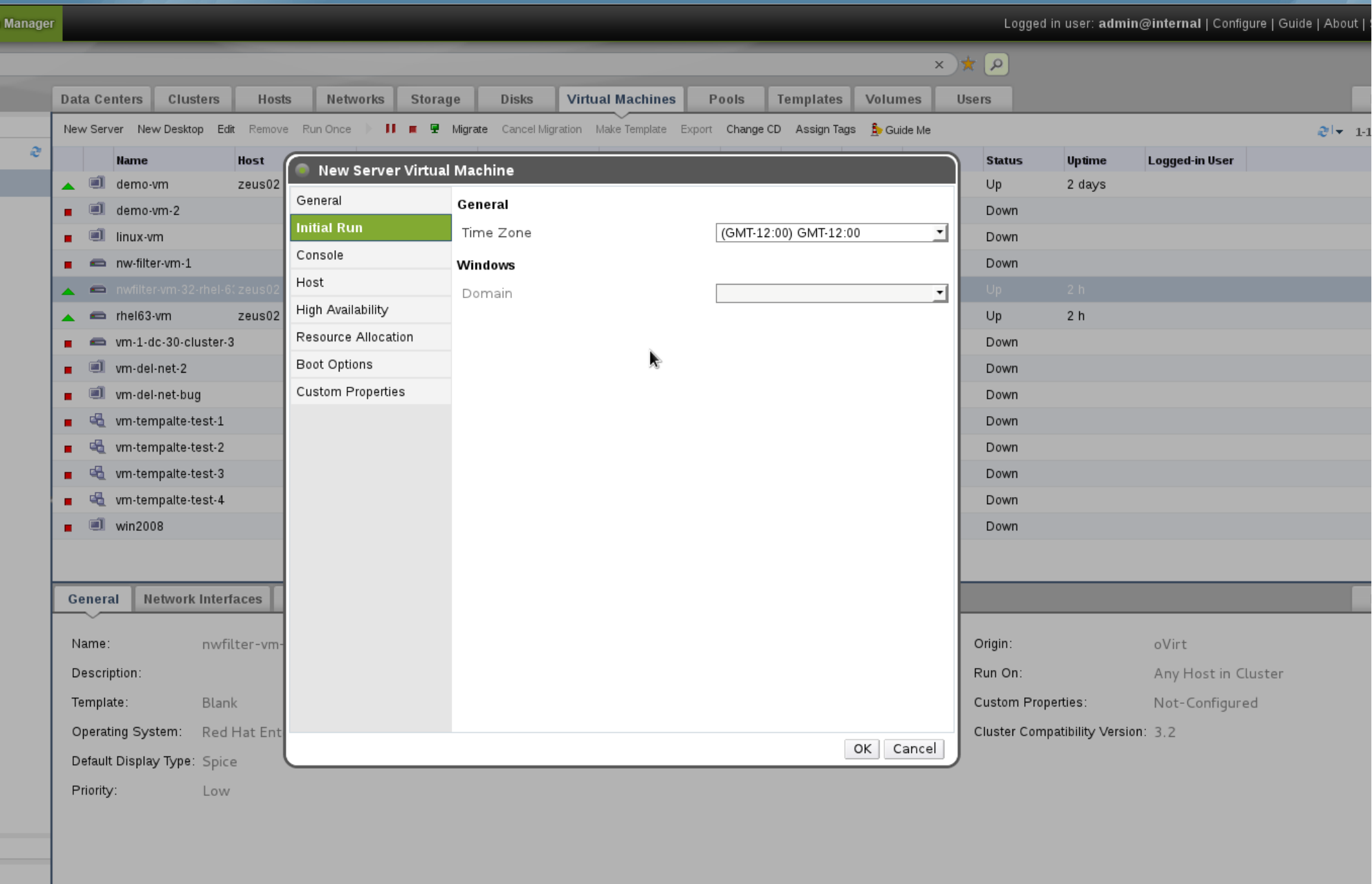
- Click the pencil icon to edit bond configuration



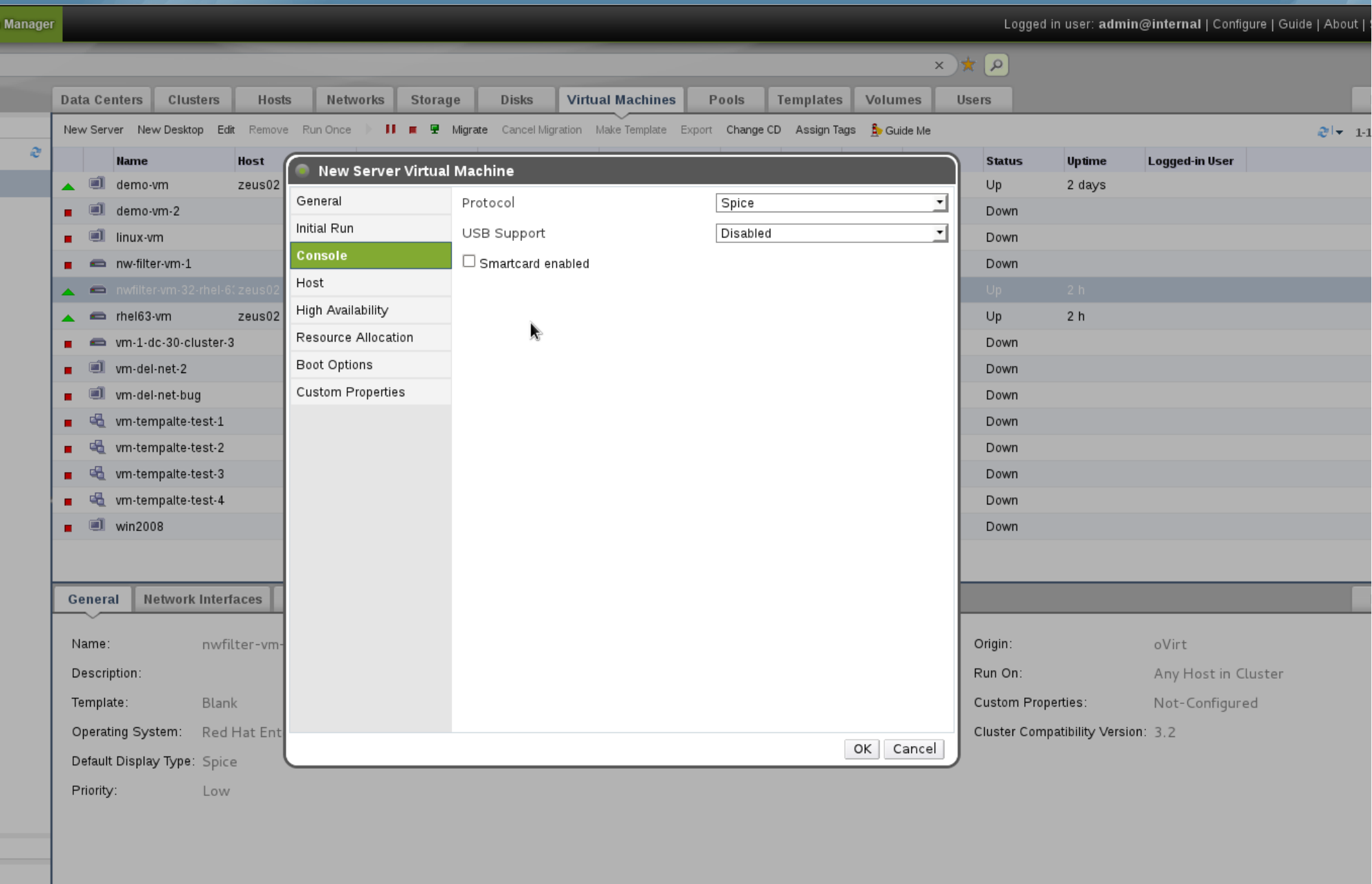
Add Servers or Desktops



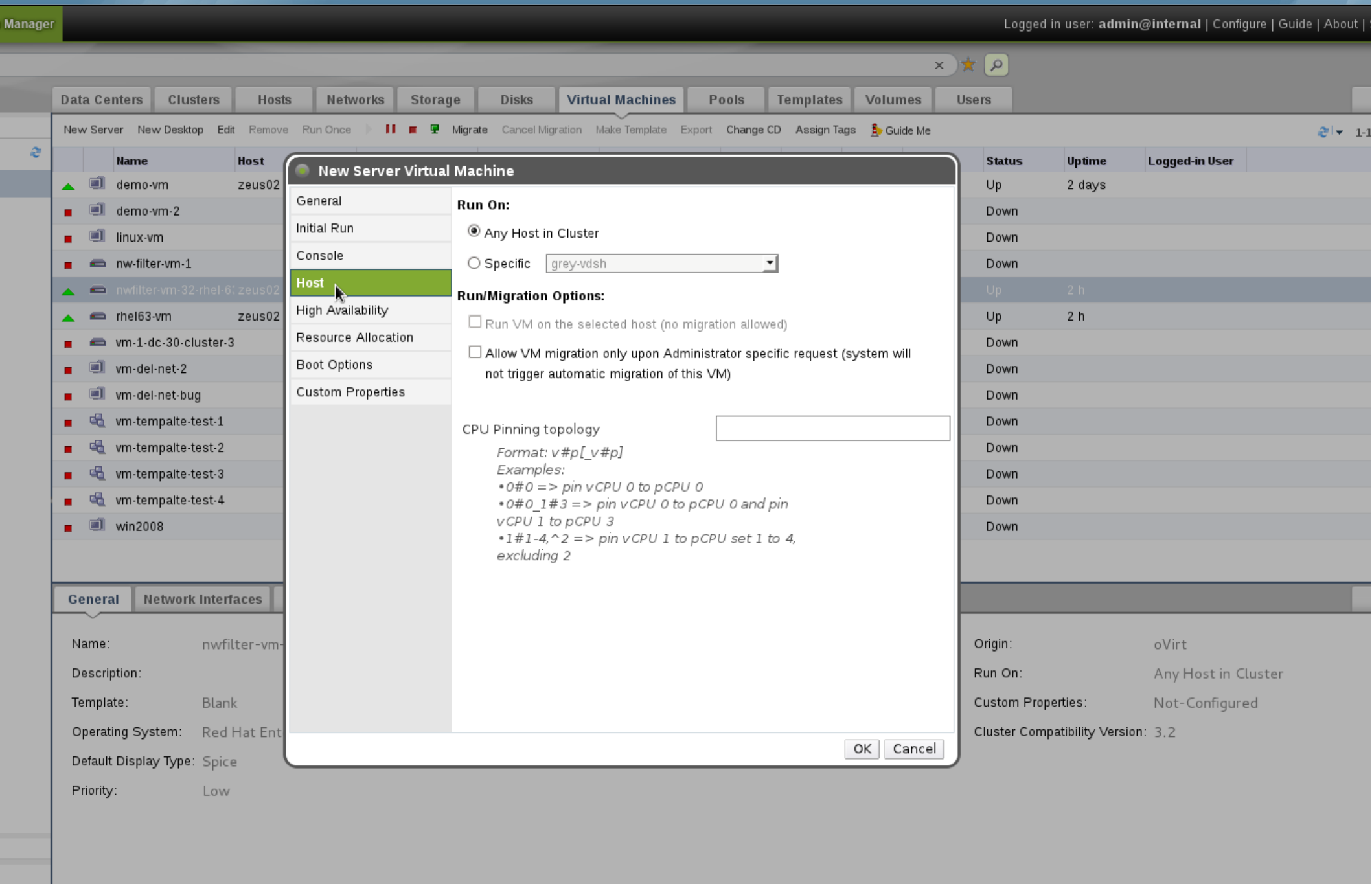
Even Windows via Sysprep



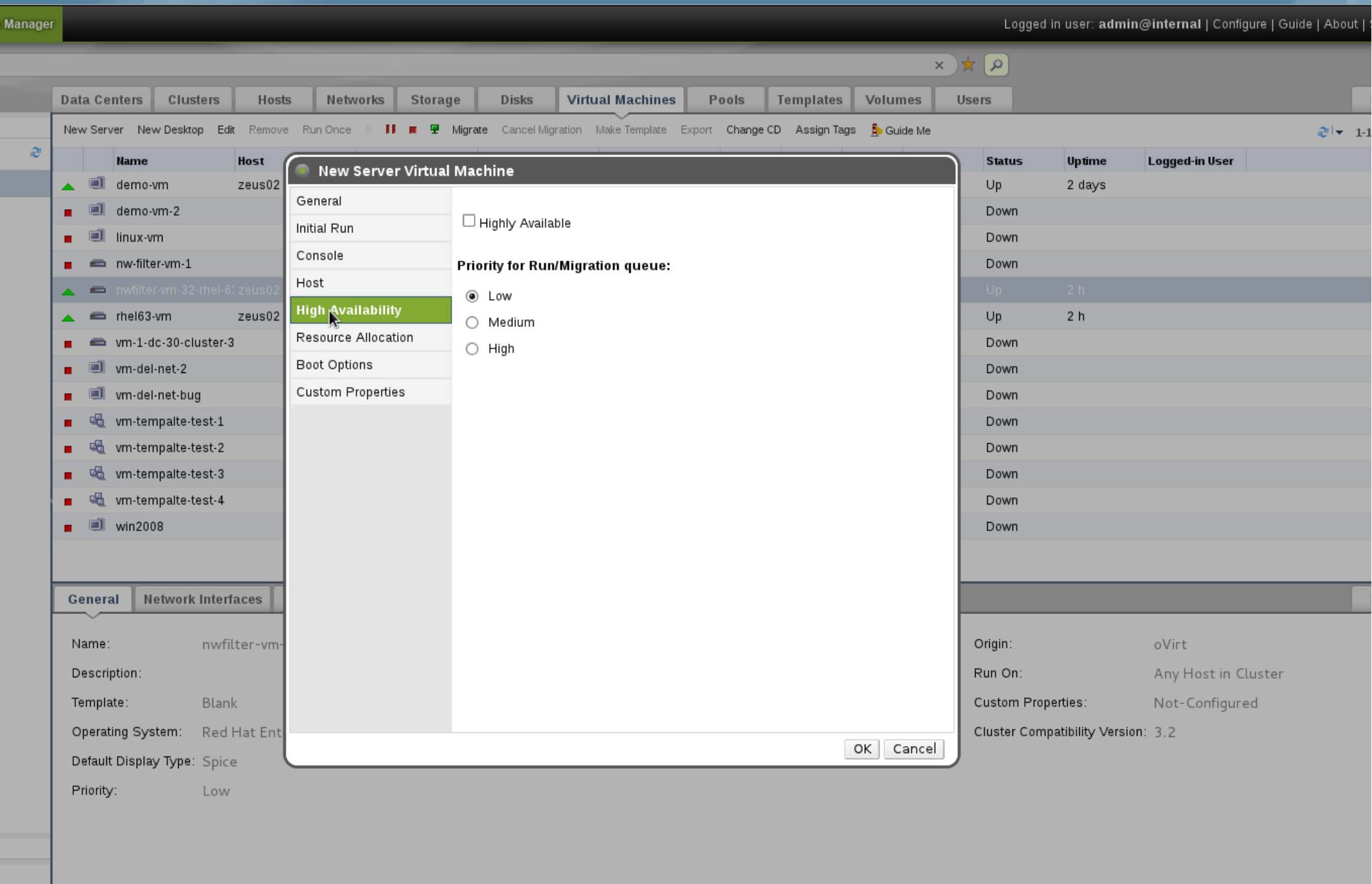
Console Details (SPICE or VNC)



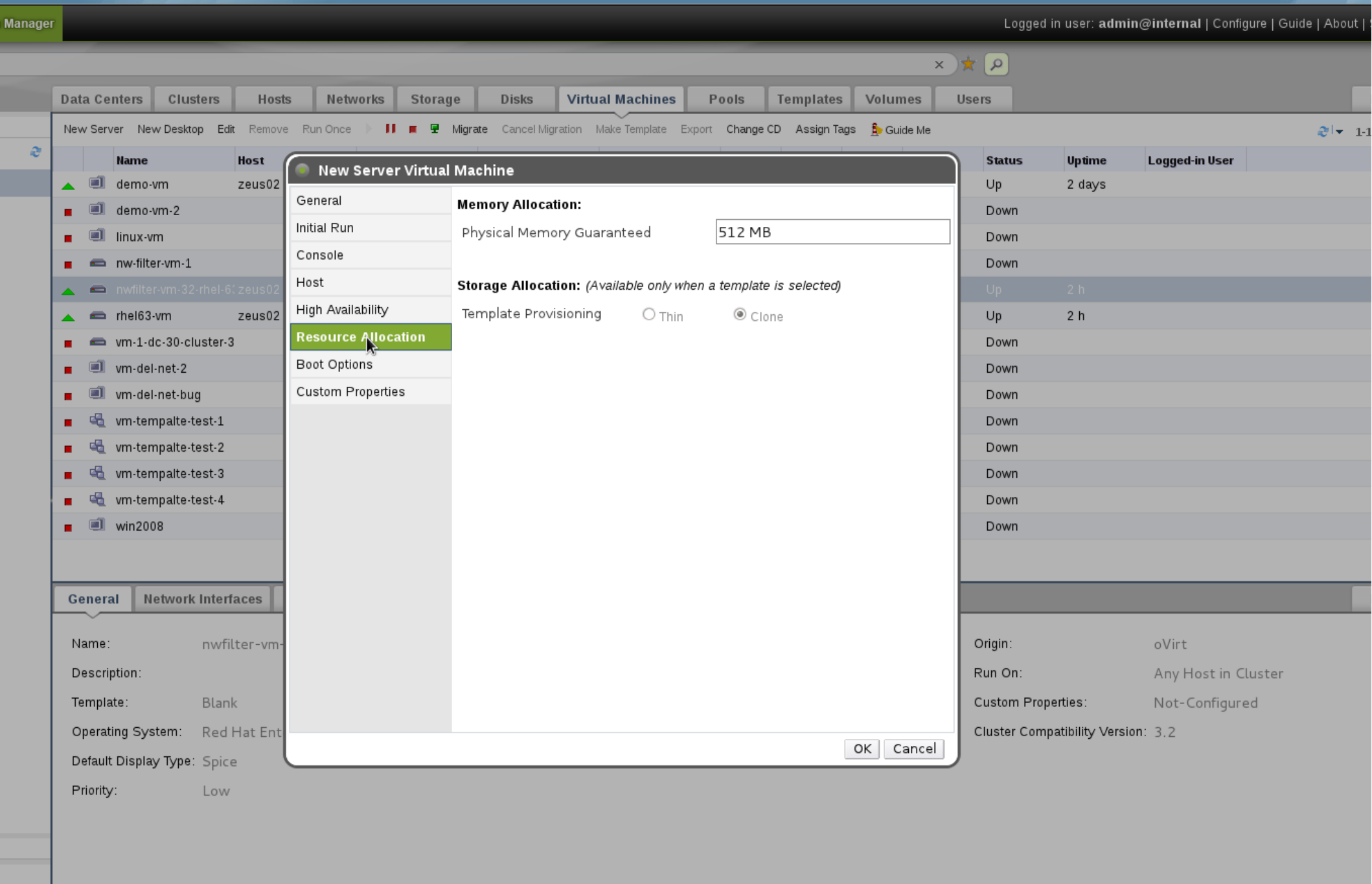
Host Aspects



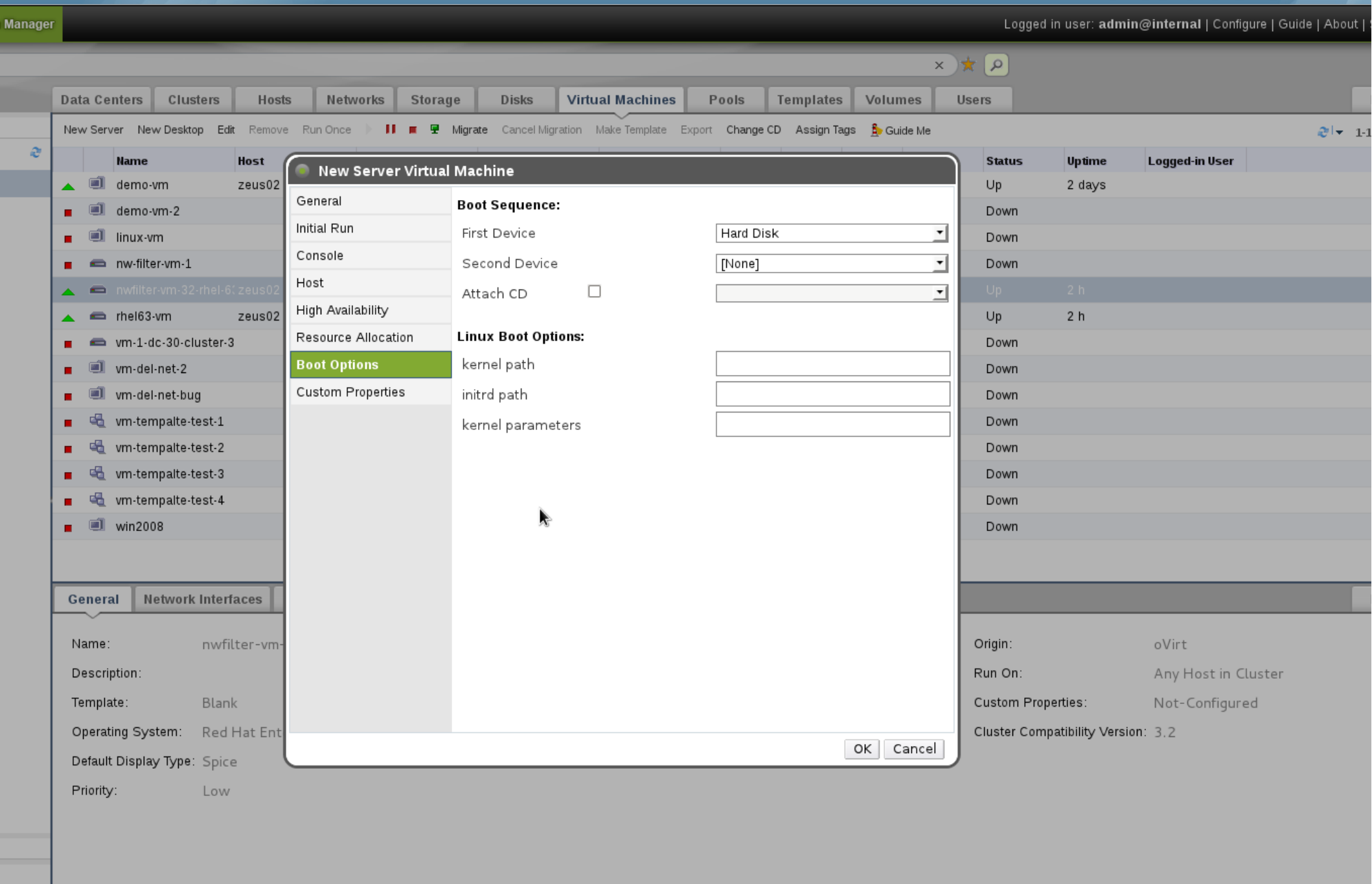
High Availability



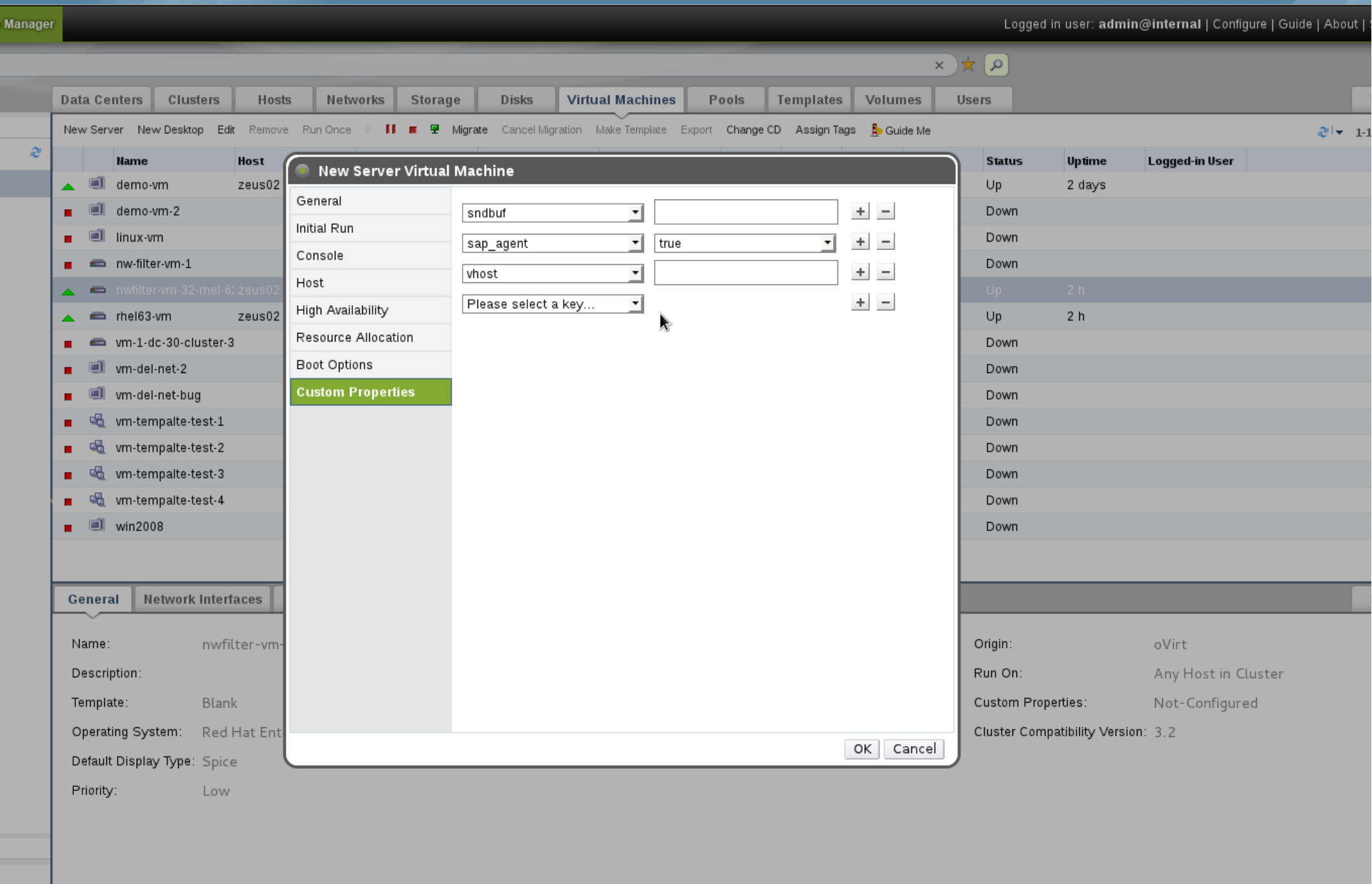
Control Allocated Resources (Disk, Memory)



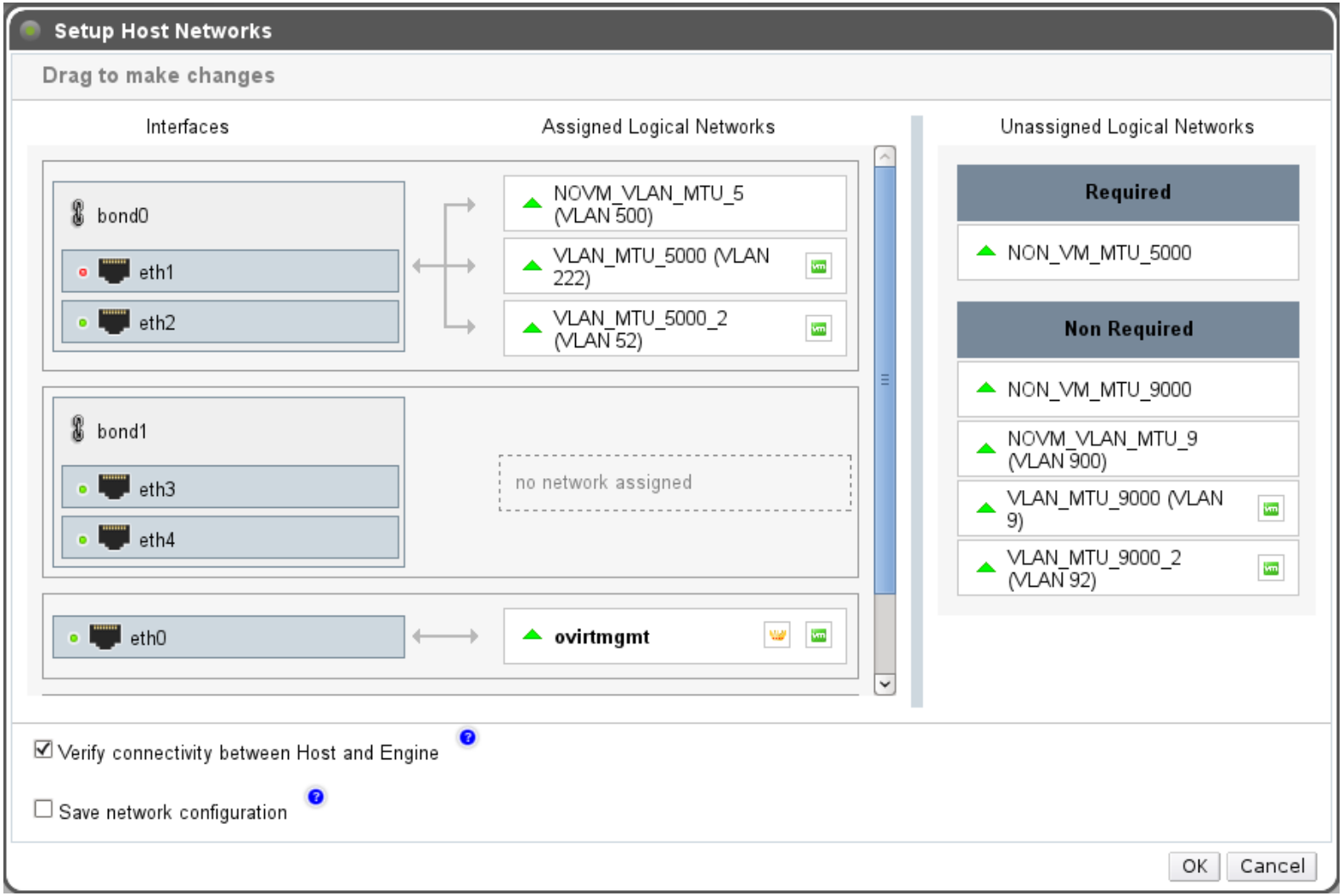
Boot Devices



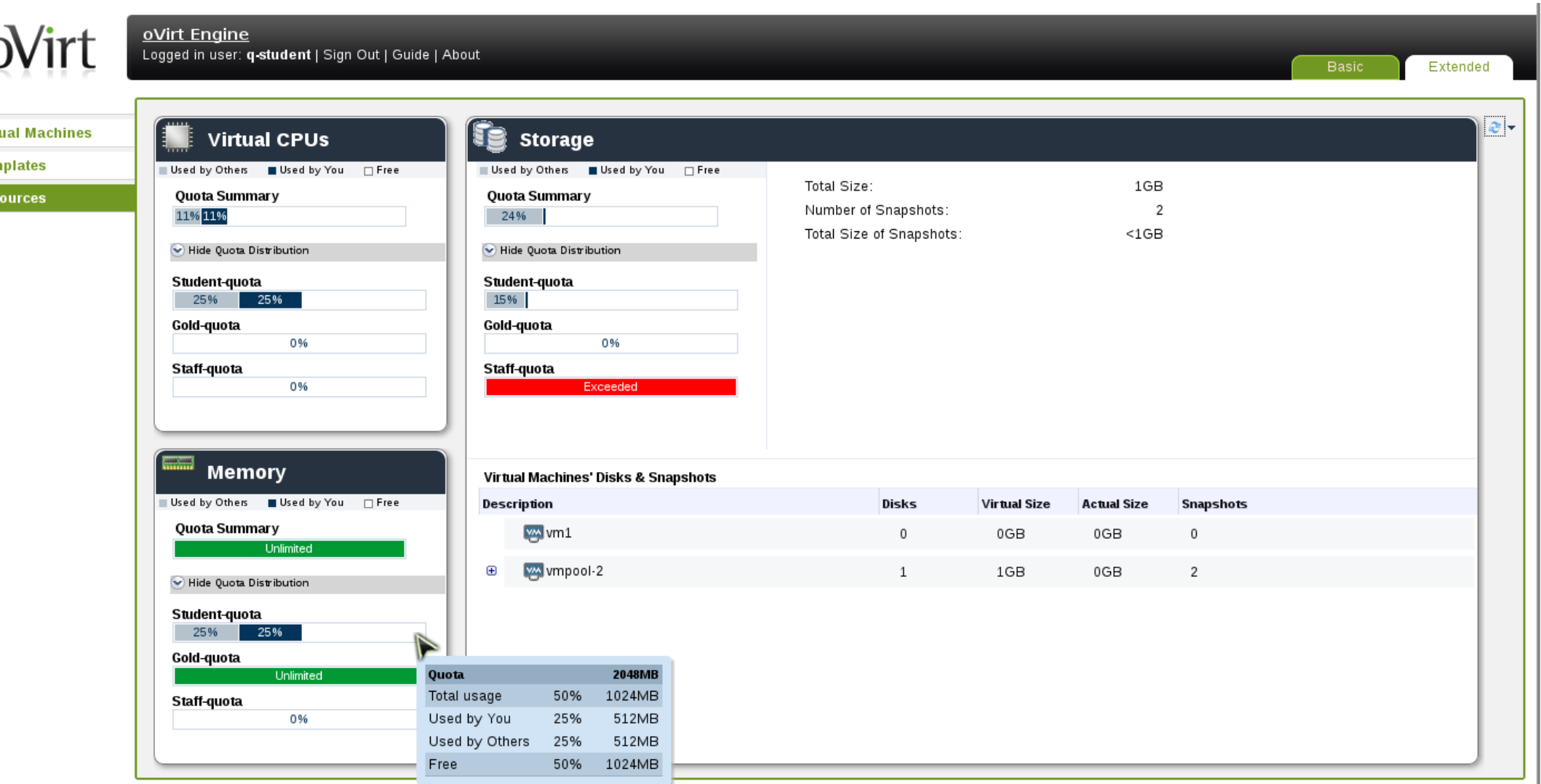
Advanced Options via Custom Properties



Setup Networks: Dialog

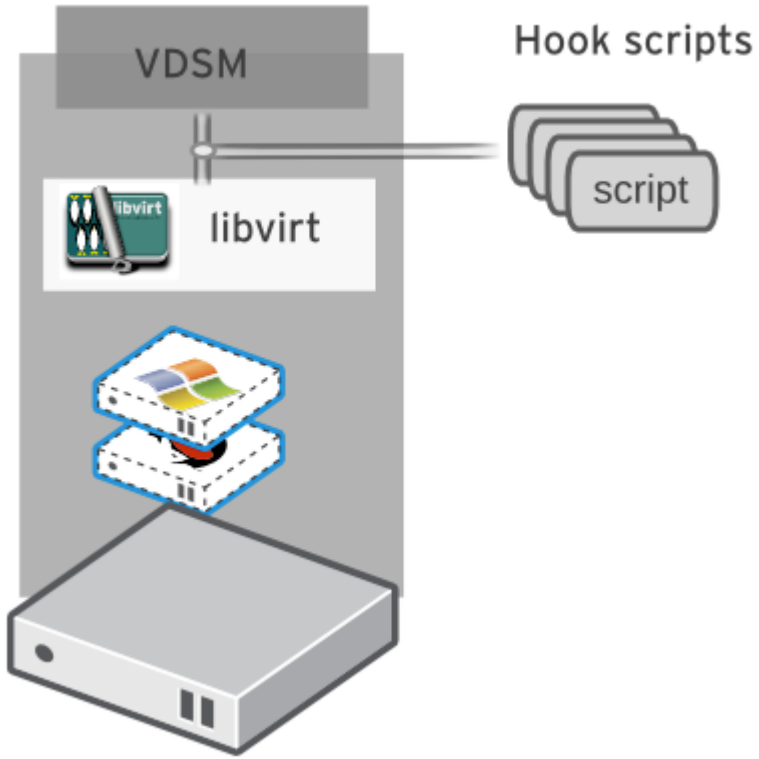


Controlling resources: Quota



Hooks

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



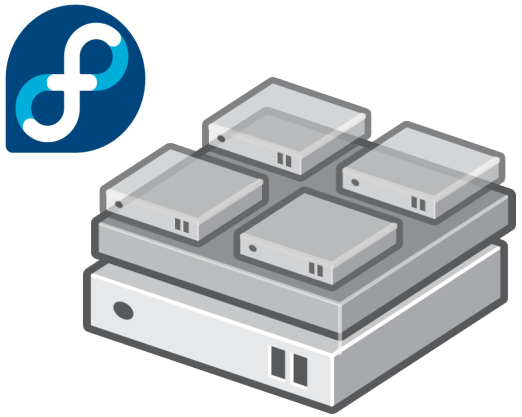
Hooks

- 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

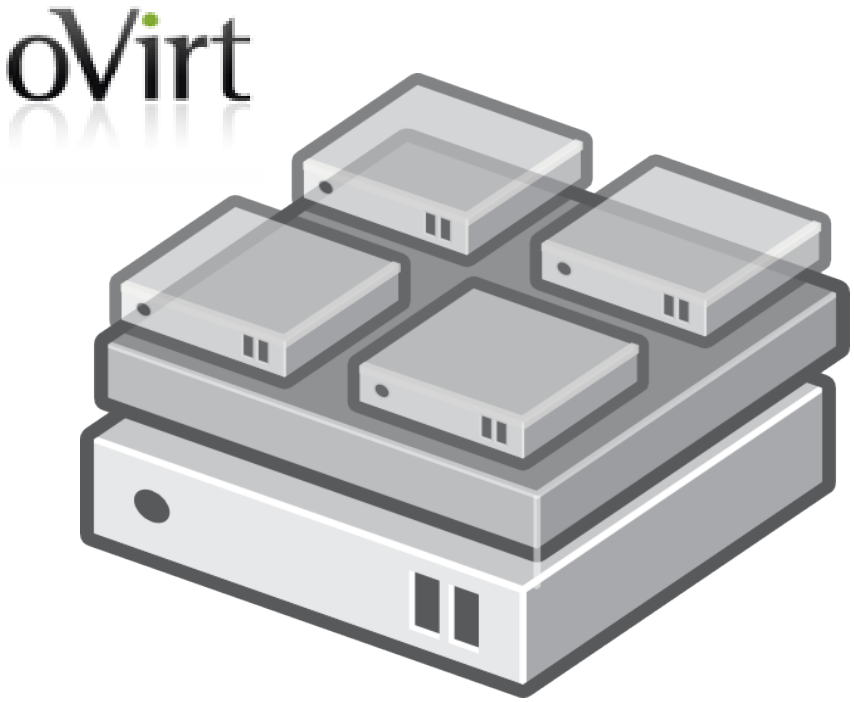
oVirt - Full Host

Full Host

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

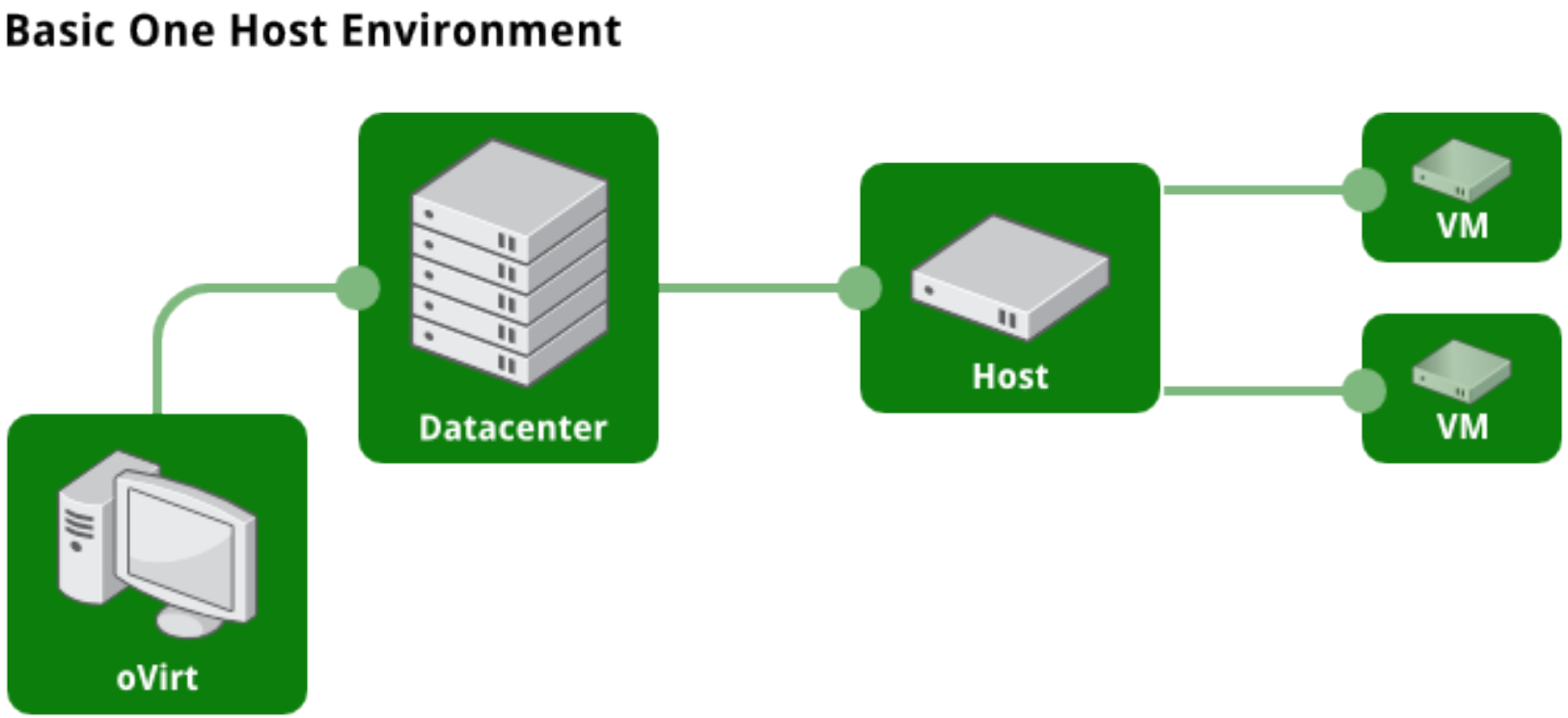


oVirt Node

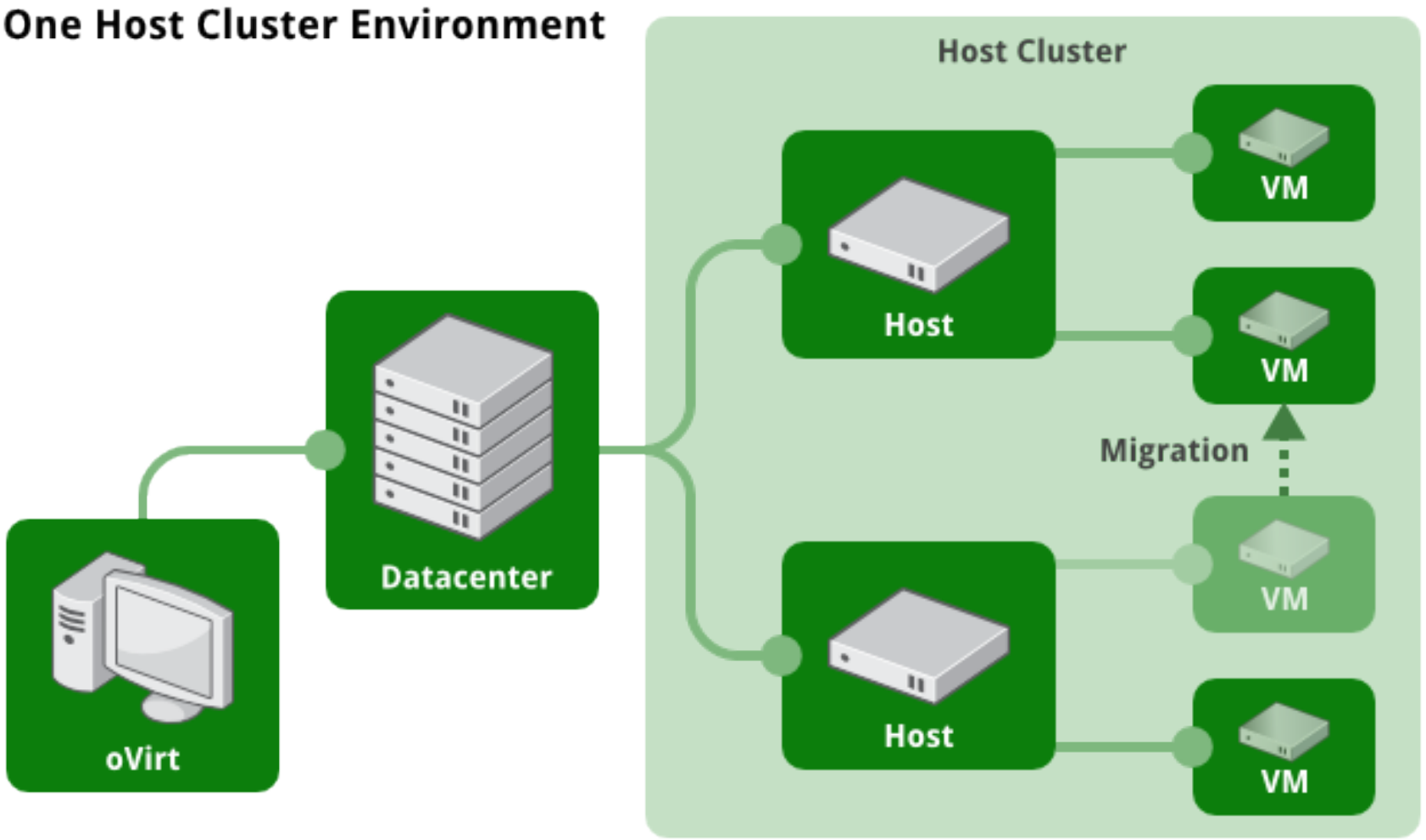


- Standalone hypervisor
  - Small footprint ~ 170MB
    - Customized 'spin' of Fedora + KVM
    - 'Just enough' Fedora to run virtual machines
    - Runs on all RHEL hardware with Intel VT/AMD-V CPUs
  - Easy to install, configure and upgrade
    - PXE boot, USB boot, CD or Hard drive

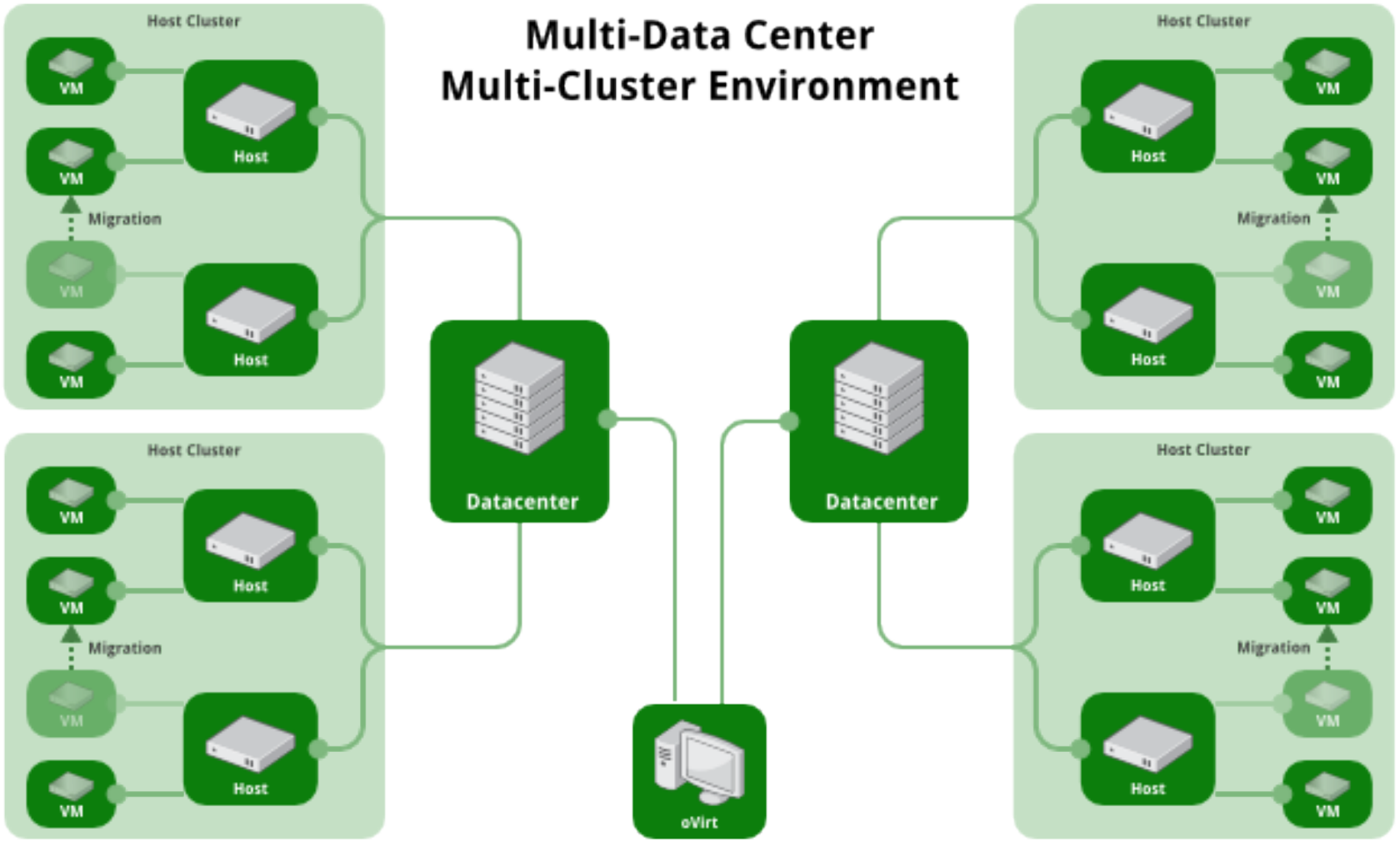
Example 1: One Host Environment



Example 2: Multiple hosts



Example 3: Multi-Datacenter/Multi-Host



Features

Feature	Description
Scalability	Extend your virtualization environment by adding more host nodes
High Availability	Restart guest VMs from failed hosts automatically on other hosts
Host Live Migration	Move running VM between hosts with zero downtime
Storage Live Migration	Move running VM between storage domains with zero downtime
Network Filtering	Control network traffic in your virtualization environment
Port Mirroring	Mirror network traffic to a specific VM
Image Management	Template based provisioning, thin provisioning and snapshots
Live Snapshots	Take snapshot of a running virtual machine
Direct LUNs	Being able to attach block devices as volumes directly to virtual machines
Shared/Floating Disks	Share and hotplug disks between virtual machines

Features

Feature	Description
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
Monitoring Tools	For all objects in system – VM guests, hosts, networking, storage etc.
SLA-MOM	A policy engine to help with memory management
Reports	Customized JasperReports and JasperServer reporting tools
OVF Import/Export	Import and export VMs and templates using OVF files
V2V & P2V	Convert Physical servers or VMs from Vmware and Xen
Remote Access	SPICE and VNC protocols for accessing your virtual machines
USB and Smartcards	Passthrough USB and Smartcards to VMs

Features

Feature	Description
Gluster Support	Manage your Gluster volumes and bricks, and integrate them with oVirt
REST API	RESTful web service using HTTP methods to control oVirt objects
Development Tools	Python SDK and CLI Shell

New in 3.2

Infrastructure
- The administration portal supports custom user interface (UI) plugins written in JavaScript.
- Live Snapshots of a virtual machine can now be created without first having to stop it.
- Support has been added for the Windows 8, Windows 8 x64, and Windows 2012.

Storage
- Supporting storage live migration. Enables migration of disks between storage without downtime.
- Supporting storage domain live upgrade. Enables upgrade from the old to the new V3 domain, online.

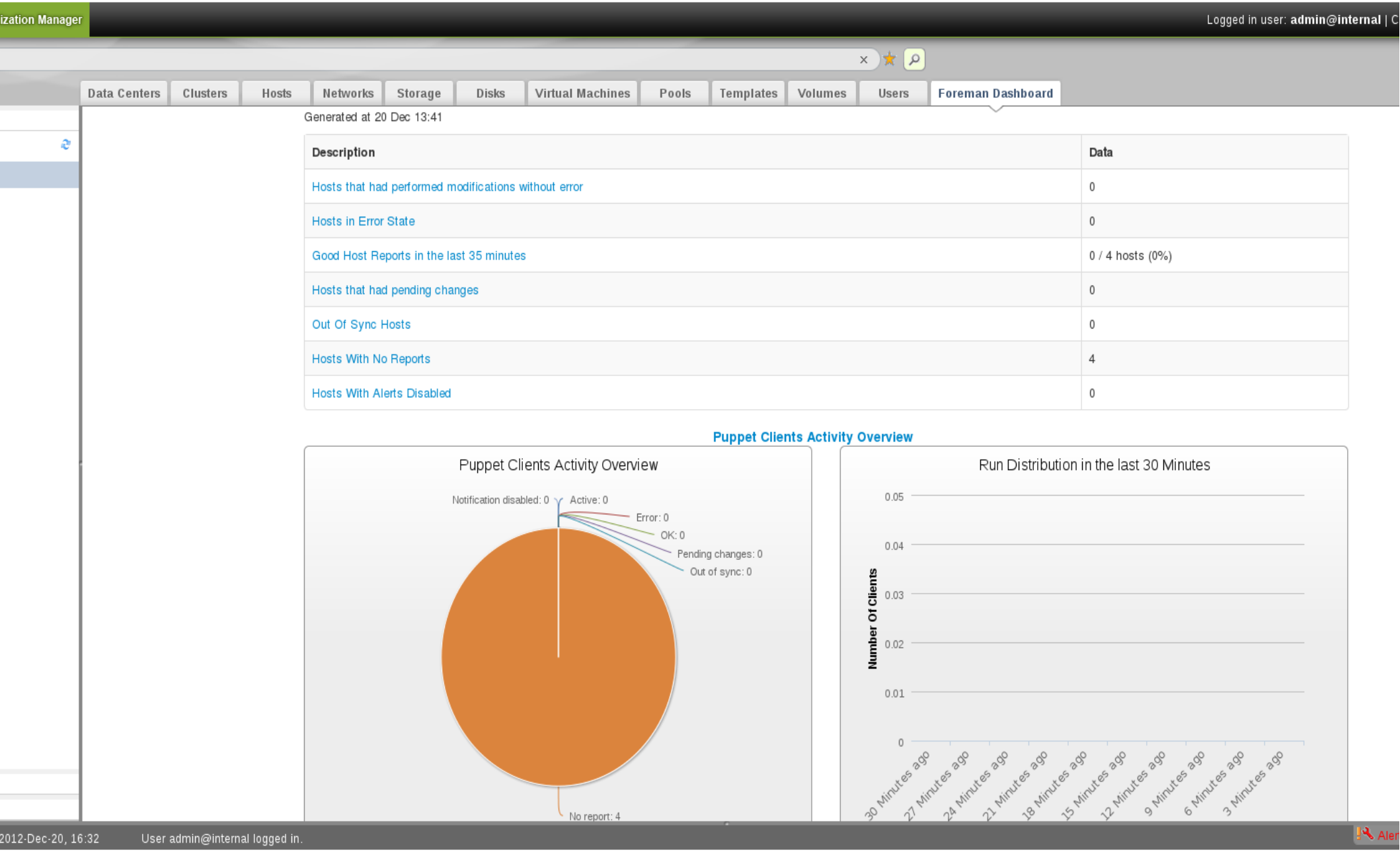
Performance
- Memory Overcommit Manager (MOM) is enabled by default for hosts. It provides the ability to manage memory ballooning and Kernel Same-page Merging (KSM) of the Linux kernel

Virtualization
- Virtual machines can now utilize the host's CPU flags, enables better performance in VM.
- Clusters can now be configured to treat host CPU threads as cores for the purposes of virtual machine resource allocation and migration.

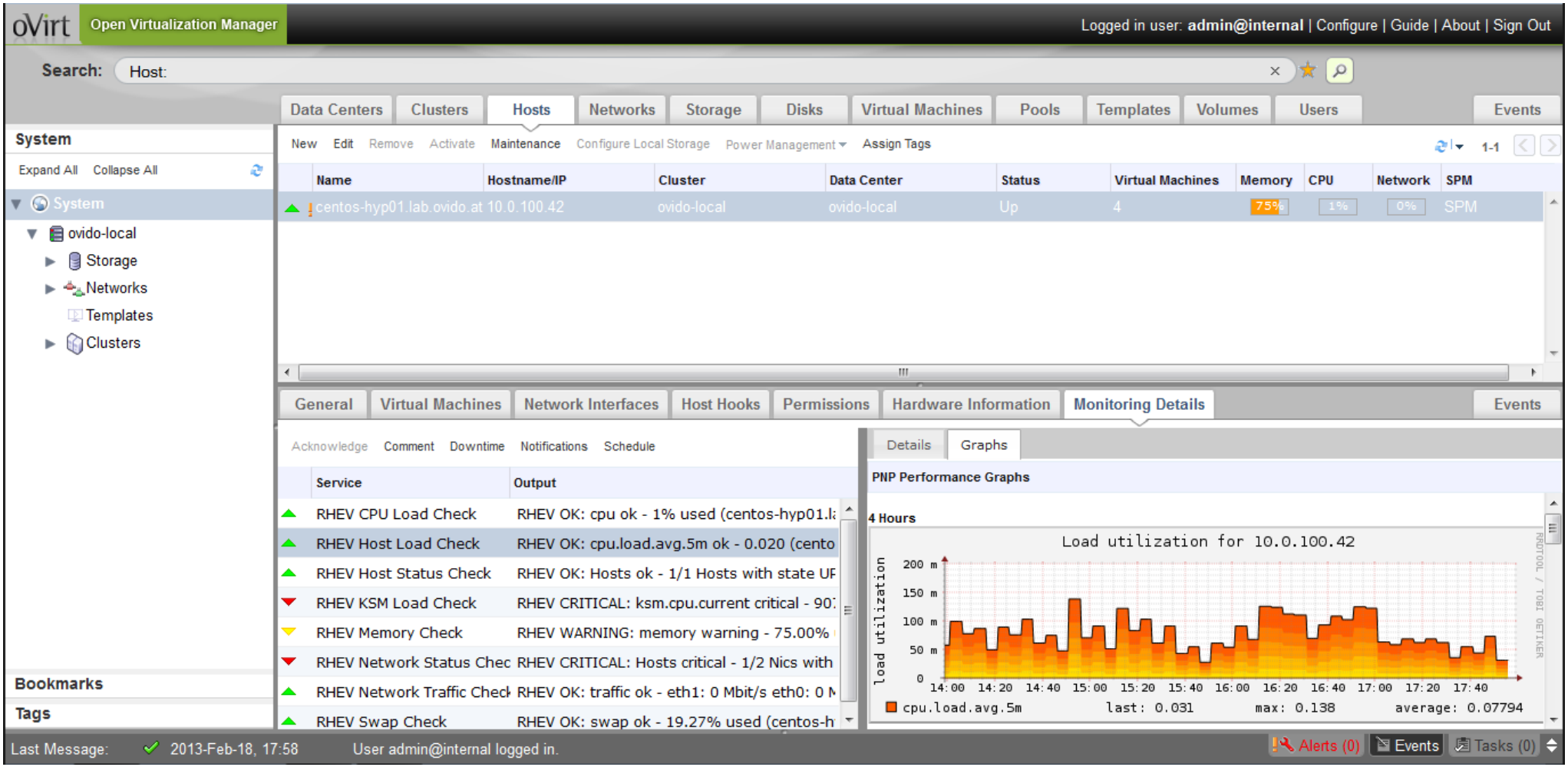
User Interface
- A new "Network" tab has been added to the main resource tabs
- oVirt Engine now retrieves and displays host BIOS information when a host is added to the engine

35+ additional new features listed at: http://www.ovirt.org/OVirt_3.2_release_notes

UI-Plugin: Foreman main tab



UI-Plugin: oVirt Monitoring sub-tab



More info at: https://labs.ovido.at/monitoring/wiki/ovirt-monitoring-ui-plugin

Getting oVirt

- Obtain from oVirt website
- Live USB - http://wiki.ovirt.org/wiki/OVirt_Live
- Build from source
- Fedora repositories
  - yum install ovirt-engine
  - engine-setup
  - Add managed hosts

How To Contribute

Join the community
- Find bugs, File Them, Correct Them.
- Translate, Write Documentation.
- Design Interfaces, Develop new features
- Share your experiences.

Everyone can make a difference.

- **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