

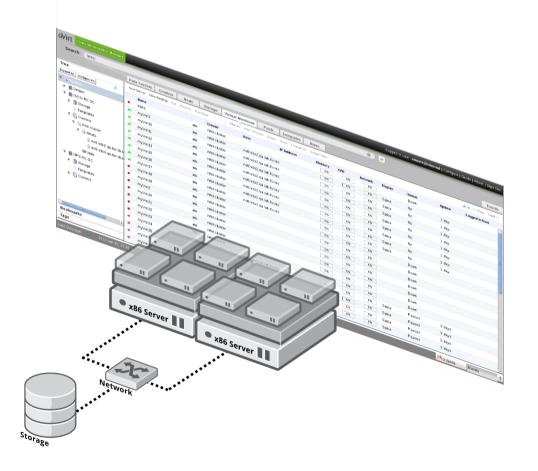
## oVirt Introduction

Shanghai 2013

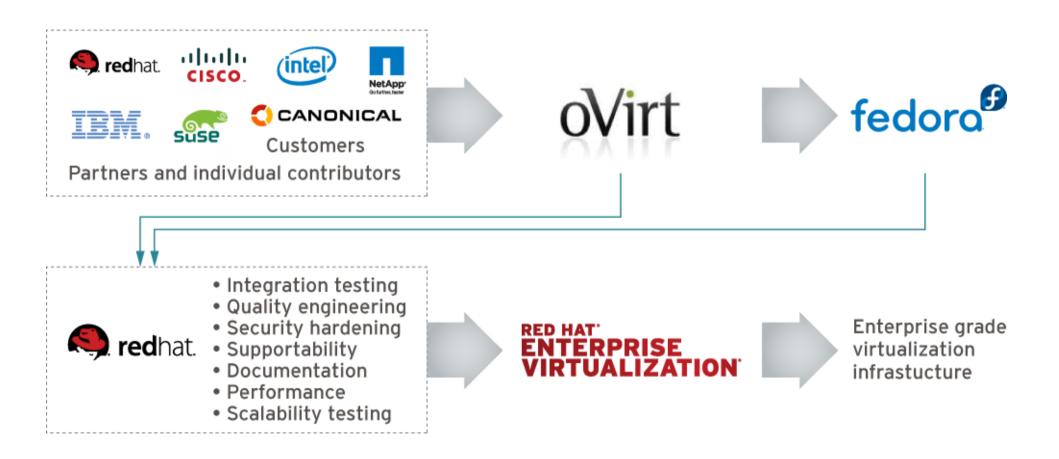
Doron Fediuck Red Hat

### 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 OVIT



### JBoss-based Java application

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

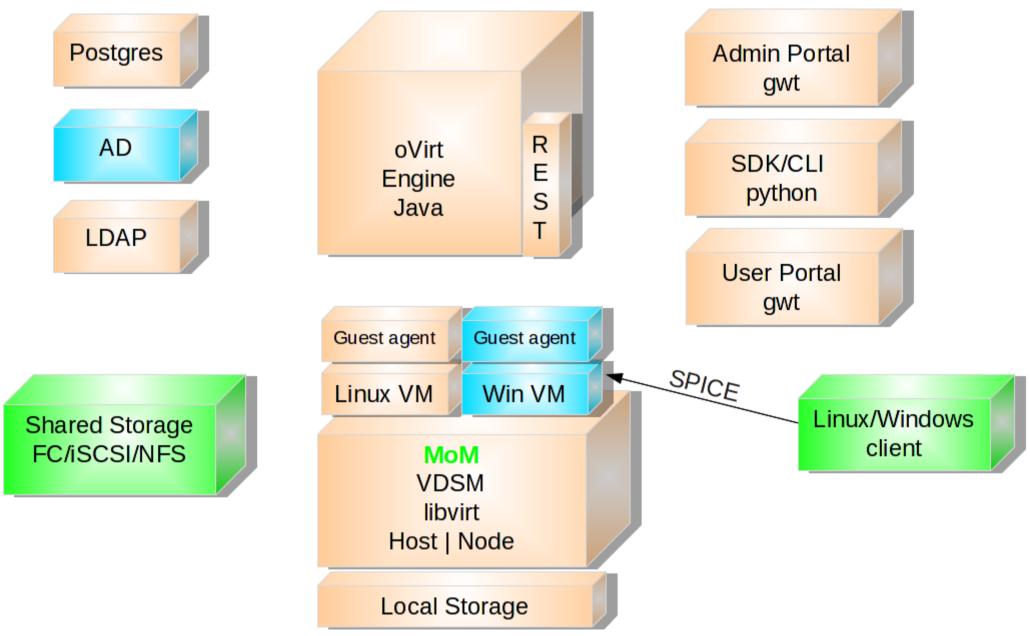
Search: Vms:	_		_					_		_	×	* 🔎			
	Data Cer	iters Cluster	s Hosts	Networks	Storage	Disks	Virtual Machines	Pools	Template	s Volu	_	Users		R.	Eve
ree	New Serve			Run Once 🗼 🖡		grade Cancel Migr	ation Make Template Exp	art Change (		_	uide Me				<b>∂</b> !+ 1-14
xpand All Collapse All 👌 🤤		Name	Host	IP Ade	Iress	Cluster	Data Center	Memory	CPU	Network	Display	Status	Uptime	Logged-in User	
System	🔺 🗉								65						
▶ 🛢 dc-30	<b>•</b> 0	demo-vm-2				Default	Default	0%	0%	0N		Down			
🔻 📋 dc-30-with-various-clusters		linux-vm				cluster-32	demo-dc-32	0%	0%	0%		Down			
🔻 📵 Storage		rrw-filter-vm-1				cluster-31	dc-31	05	05	0%		Down			
🔋 data5-dc-30-cluster-31		rwfilter-vm-32-rh	el-6: zeus02	10.35	18.154	cluster-32	demo-dc-32	24%	0%	0%	Spice	Up	2 h		
🔻 🔩 Networks		rhel63-vm	zeus02			cluster-32	demo-dc-32	32%	6%	0%	Spice	Up	2 h		
all ovirtmgmt		vm-1-dc-30-clust	er-3			cluster-30-on	dc-30 dc-30-with-variou	s-cl 0%	05	0%		Down			
Templates	• el ·	vm-del-net-2				cluster-30	dc-30	0%	0%	0%		Down			
<ul> <li>Clusters</li> <li>cluster-30-on-dc-30</li> </ul>		vm-del-net-bug				cluster-30	dc-30	ON	ON	0%		Down			
Hosts	. 4	vm-tempalte-test	1			Default	Default	05	05	0%		Down			
W VMs		vm-tempalte-test	-2			Default	Default	0%	0%	0%		Down			
R cluster-31-on-dc-30		vm-tempalte-test	-3			Default	Default	ON	ON	0%		Down			
G cluster-32-on-dc-30	. 4	vm-tempalte-test	4			Default	Default	05	05	0%		Down			
c 🗐 dc-30-with-vian-51	. 0	win2008				cluster-31	dc-31	05	0%	0%		Down			
🕨 💼 dc-31															
🕨 📔 dc-31-vlan-ovirtmgmt															
🕨 📋 Default	Genera	Network In	terfaces I	Disks Sna	oshots Ap	plications P	ermissions								Ev
🕨 🛢 demo-dc-32															
<ul> <li>test-net-on-31-dc</li> </ul>	Name:	d	emo-vm			Defined Me	mory: 103	4 MB				Origin:		oVirt	
test-net-on-32-dc	Descrip	tion:				Physical M	emory Guaranteed: 256	MB				Run On:		Any Host in Cluster	
Est-vlan	Templat	ж: В	lank			Number of	CPU Cores: 1 (:	Socket(s)	1 Core(s)	) per Soc	ket)	Custom Pro	perties:	Not-Configured	
	Operati	ng System: R	ed Hat Enterp	orise Linux 6.>	x64	Number of I	Monitors: 1					Cluster Con	patibility Versio	n: 3.2	
	Default	Display Type: S	pice			USB Policy	c Dis	ibled							
ookmarks															
ags															





## oVirt

### **Overview: architecture**



### **Administration Console**

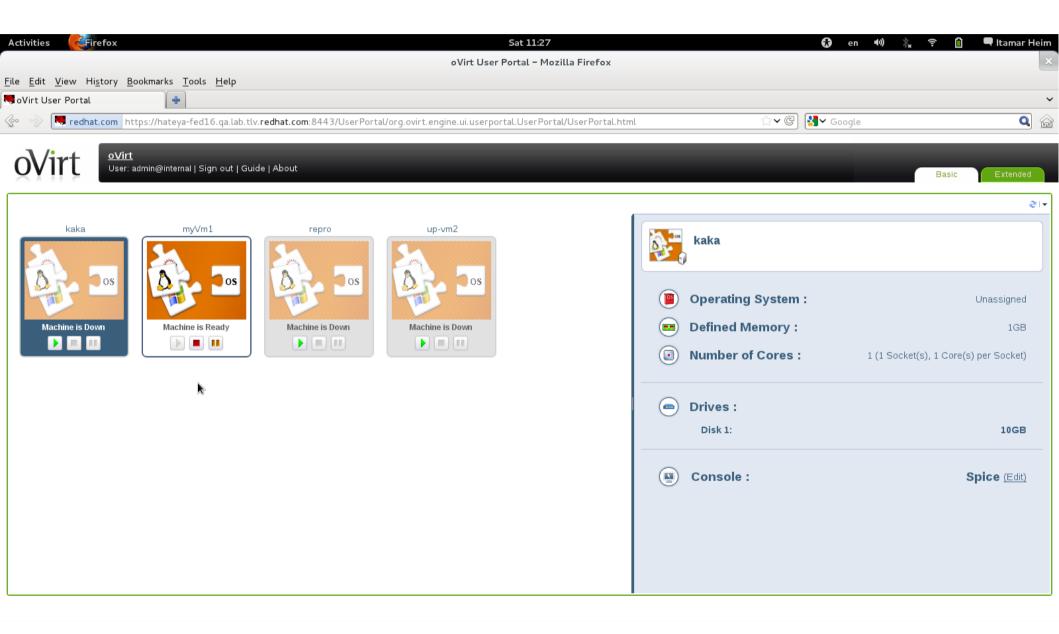
#### Firefox • 2 🗬 Itamar Heim Activities Fri 22:13 en **(**) oVirt Enterprise Virtualization Engine Web Administration - Mozilla Firefox File Edit View History Bookmarks Tools Help 🄜 oVirt Enterprise Virtualization E... 🛛 💠 ¥ 🛃 🗸 Google Q 🎧 • C 🔜 hateya-fed16.ga.lab.tlv.redhat.com:8080/webadmin/webadmin/WebAdmin.html#vms 6 oVirt Open Virtualization Manager Logged in user: admin@internal | Configure | Guide | About | Sign Out \* Q Search: Vms: Virtual Machines Data Centers Clusters Hosts Storage Pools Templates Users Events Tree New Server New Desktop Edit Remove Run Once 🕨 🔢 🔳 Migrate Make Template Export Move Change CD Assign Tags Prev Next >> æ Expand All Collapse All Name Cluster Host IP Address Memory CPU Network Display Status Uptime Logged-in User 🔻 🕥 System -0% 0% 0% kaka intel-cluster Down 目 Default myVm1 nott-vds2.ga.lab.tlv.red 0% 6% 0% Spice 1 day intel-cluster Up iSCSI-RC-DC myVm10 intel-cluster nott-vds2.ga.lab.tlv.red 0% 0% 0% Spice Up 1 day ۸ Storage ۸ myVm11 intel-cluster nott-vds2.ga.lab.tlv.red 0% 0% 0% Spice Up 1 day 上 Templates ۸ myVm12 intel-cluster nott-vds2.ga.lab.tlv.red 0% 0% 0% Spice Up 1 day 🔻 🕥 Clusters 0% 0% 0% ۸ myVm13 intel-cluster nott-vds2.ga.lab.tlv.red Spice Up 1 day 🔻 😭 intel-cluster myVm15 nott-vds2.ga.lab.tlv.red 0% 0% 0% Spice Up 1 day ▲ intel-cluster 🔻 🔒 Hosts 0% 0% 0% myVm16 nott-vds2.ga.lab.tlv.red Spice Up 1 day ▲ intel-cluster 🛭 nott-vds2.qa.lab.tlv.r 0% 0% 0% ۸ myVm17 intel-cluster nott-vds2.ga.lab.tlv.red Spice Up 1 day 🔒 nott-vds3.ga.lab.tlv.r 0% 0% 0% myVm18 intel-cluster Down 💵 VMs 0% 0% 0% myVm19 intel-cluster NFS-RC-DC Down Storage myVm2 0% 0% 0% intel-cluster Down 📡 Templates 0% 0% 0% myVm20 intel-cluster Down Clusters 0% 0% 0% myVm21 intel-cluster Down myVm22 intel-cluster 0% 0% 0% Down myVm23 0% 0% 0% intel-cluster Down н myVm24 intel-cluster nott-vds2.ga.lab.tlv.red 0% 0% 0% Spice Paused 5 days myVm25 0% 6% 0% п intel-cluster nott-vds2.ga.lab.tlv.red Spice Paused 5 days п myVm26 0% 0% intel-cluster nott-vds2.ga.lab.tlv.red 0% Spice Paused 5 days Bookmarks 0% 0% 0% н myVm27 nott-vds2.ga.lab.tlv.red 5 days intel-cluster Spice Paused Tags ~

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

÷







### **Self Provisioning Portal**

Activities	efox							s	Sat 11:27			<b>⊖</b> en ••)	*, ? □	🗬 Itamar Heim
								oVirt User Po	rtal - Mozil	la Firefox				×
<u>F</u> ile <u>E</u> dit <u>V</u> iew Hi <u>s</u>	tory <u>B</u> ookn	marks <u>T</u> ools	; <u>H</u> elp											
🤜 oVirt User Portal		<b></b>												~
📀 💿 🔜 redhat.	.com https:/	//hateya-fed]	16.qa.lab.t	tlv.redha1	<b>t.com</b> :8443/l	JserPortal/org	g.ovirt.engi	ine.ui.userportal	l.UserPortal,	/UserPortal.html	☆~(	C) 🛃 Google		Q 🏠
oVirt	oVirt User: admir	in@internal   Si	ign out   Gi	uide   Abo	put					-	-		name Basic date	Extended
Virtual Machines	New Server	New Desktop	Edit R	emove   F	<b>≀un Once</b>   Cha	ange CD   Make T	Template							@1+
Templates	à	kaka								CONSOLE				
Resources	🥸 🛥 🕽	myVm1							; ;	CONSOLE				
	à	repro								CONSOLE				
	à	up-vm2							5) (5)	CONSOLE				
	General	Network Inter		tual Disks	Snapshots	Permissions	Events	Applications	Monitor					
	Name: Descripti	kak	.ca		fined Memory: vsical Memory Gu	1024 MB Jaranteed: 512 MB			Origin: Run On:	RHEV Any Host in Cluster				
	Template		d16	-	mber of CPU Core			e(s) per Socket)		Properties: Not-Configured				
			assigned		hly Available:	false		(e) p						
	Default [	Display Type: Spi	ice	US	B Policy:	Enabled	ł							
	Priority:	Lov	W	Re	sides on Storage	Domain: hateya-	·ovirt-rc-1							
I I	<u></u>													

oVirt

### **REST API**

```
۲
                                                                     Mozilla Firefox
File Edit View History Bookmarks Tools Help
                                                                                                                        ☆ ✔ 🚼 ✔ Google
                       http://10.35.1.171/rhevm-api
                                                                                                                                                           0
🌉 http://10.35.1.171/rhevm-api
                            +
                                                                                                                                                           ~
-<api>
   k rel="capabilities" href="/rhevm-api/capabilities"/>
   k rel="clusters" href="/rhevm-api/clusters"/>
   k rel="clusters/search" href="/rhevm-api/clusters?search={query}"/>
   k rel="datacenters" href="/rhevm-api/datacenters"/>
   k rel="datacenters/search" href="/rhevm-api/datacenters?search={guery}"/>
   k rel="events" href="/rhevm-api/events"/>
   k rel="events/search" href="/rhevm-api/events?search={guery}"/>
   k rel="hosts" href="/rhevm-api/hosts"/>
   k rel="hosts/search" href="/rhevm-api/hosts?search={query}"/>
   k rel="networks" href="/rhevm-api/networks"/>
   k rel="roles" href="/rhevm-api/roles"/>
   k rel="storagedomains" href="/rhevm-api/storagedomains"/>
   k rel="storagedomains/search" href="/rhevm-api/storagedomains?search={guery}"/>
   k rel="tags" href="/rhevm-api/tags"/>
   k rel="templates" href="/rhevm-api/templates"/>
   k rel="templates/search" href="/rhevm-api/templates?search={query}"/>
   k rel="users" href="/rhevm-api/users"/>
   k rel="groups" href="/rhevm-api/groups"/>
   k rel="domains" href="/rhevm-api/domains"/>
   k rel="vmpools" href="/rhevm-api/vmpools"/>
   k rel="vmpools/search" href="/rhevm-api/vmpools?search={guery}"/>
   k rel="vms" href="/rhevm-api/vms"/>
   k 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>
     </www.
   -<hosts>
      <total>6</total>
      <active>5</active>
     </hosts>
   -<users>
       etatals 7 etatals
```

~

Done

### **Add Host**

Activities <b>C</b> Firefox			Fri 22:23			€	en	<b>●</b> )	0	; 🗬 Itamar H	leim
		oVirt Enterpri	se Virtualization Engine Web Adm	inistration – Mozilla Firefox							×
<u>F</u> ile <u>E</u> dit <u>V</u> iew Hi <u>s</u> tory <u>B</u> ookma	irks <u>T</u> ools <u>H</u> elp										
🤜 oVirt Enterprise Virtualization E	. 🕈										~
📀 📎 📕 hateya-fed16.qa.lab.	tlv.redhat.com:8080/webadmin/weba	admin/WebAdmin.html#	hosts		☆∨	C 🛃 🗸	Google			Q	â
OVirt Open Virtualization Manager					L	.ogged in use	er: admin	@internal	Configure   (	Guide   About   Sigr	n Out
Search: Host:					* 0						
	Data Centers Clusters Host	s Storage Virtu	al Machines Pools Template	s Users						Eve	nts
Tree Expand All Collapse All 2	New Edit Remove Activate Maintenar	New Host	Aesian Taas							æl <del>√</del> << Prev Ne)	xt >>
	Name					Memory			SpmStatus		
<ul> <li>System</li> <li>E Default</li> </ul>	nott-vds2.qa.lab.tlv.redhat.com	General	Data Center	Default	8 VMs	25%	0%	0%	SPM		_
	<ul> <li>nott-vds3.qa.lab.tlv.redhat.com</li> </ul>	Power Management	Host Cluster	Default	0 VMs	0%	0%		None		
<ul> <li>Storage</li> </ul>	🔧 🚦 nott-vdsa.qa.lab.tlv.redhat.com				0 VMs	0%	0%	0%	None		
Templates			Name								
🔻 🎧 Clusters			🖒 Address								
🔻 🎧 intel-cluster			Root Password								
🔻 🎯 Hosts			Override IP tables	$\checkmark$							
🛛 nott-vds2.qa.lab.tlv.r											
🗍 nott-vds3.qa.lab.tlv.r											
VMs ▼ 🛱 NFS-RC-DC											
Storage											
Templates											
Clusters											
				OK Cance							
Bookmarks											
Tags											~
- Last Message: 🖌 2012-Jan-31, 23	::18:41 User admin@internal logged ii	1.						ŀ	3 Alerts	Events	¢

### **Power Management**

Activities CFirefox			Fri 22:23			E	en	•) *		🤰 🗬 Itamar H	leim
, 		oVirt Enterprise	e Virtualization Engine Web Admi	inistration - Mozilla Firefox							×
<u>File E</u> dit <u>V</u> iew Hi <u>s</u> tory <u>B</u> ookma	rks <u>T</u> ools <u>H</u> elp										
🤜 oVirt Enterprise Virtualization E	. +										~
📀 📎 📕 hateya-fed16.qa.lab.	tlv.redhat.com:8080/webadmin/web	admin/WebAdmin.html#h	osts		☆∨	C 🛃	Google			Q	
OVirt Open Virtualization Manager					L	.ogged in us	er: admin	@internal	Configure	Guide   About   Sigi	n Out
Search: Host:				*							
	Data Centers Clusters Hos	ts Storage Virtual	Machines Pools Templates							Ev	ents
Tree	New Edit Remove Activate Maintena		Assign Tage	03613	_	_	_	_	_		_
Expand All Collapse All 2		New Host								æl▼ << Prev Ne	xt >>
▼ ⓒ System	Name I nott-vds2.qa.lab.tlv.redhat.com	General	🗹 Enable Power Management		8 VMs	Memory 25%	0%	Network	<b>SpmStatus</b> SPM		^
▶ 🗐 Default	<ul> <li>nott-vds3.qa.lab.tiv.redhat.com</li> </ul>	Power Management	Address		0 VMs	0%	0%	0%	None		
🔻 📋 iSCSI-RC-DC	🔧 🛯 nott-vdsa.qa.lab.tlv.redhat.com		User Name		0 VMs	0%	0%	0%			
▶ 🔋 Storage											
Templates			Password _								
<ul> <li>Clusters</li> <li>intel-cluster</li> </ul>			Туре	bladecenter							
V 🔐 Hosts			Port								
🗍 nott-vds2.qa.lab.tlv.r			Slot								
🛛 nott-vds3.qa.lab.tlv.r			Options								
🐺 VMs			Please use a comma-separated list	t of 'key=value' or 'key'							
V 🗐 NFS-RC-DC			Secure								
▶ 🔋 Storage											
Templates			Test								
Clusters											
				OK Cancel	J						
< · · · · · · · · · · · · · · · · · · ·					·						
Bookmarks											
Tags					_	_					
Last Message - 🗸 2012-Jan-31, 23	:18:41 User admin@internal logged								3 Alerts	Events	\$

### **Setup Networks: Edit Bond**

Click the pencil icon to edit bond configuration

oVirt

Setup Host Networks		
Drag to make changes		
Interfaces	Assigned Logical Networks	Unassigned Logical Networks
🖁 bond0 🥒 📐	no network assigned	Required
• • • eth2     • • • eth3	Edit Bond Interface bond0	Non Required
<b>bond0</b> Boot Protocol: None Bond Options: mode=1 miimon=100	Bond Name: bond0 Bonding Mode: Custom: Custom mode: mode=1 miimon=100	✓ VLAN_MTU_9 OO) ✓ ITU_9000 (VLAN
• 🗮 eth1		ITU_9000_2 2)
☑ Verify connectivity between Host and Eng	jine 🧧	
□ Save network configuration <sup>●</sup>		
		OK Cancel OK Cancel

### **Add Servers or Desktops**

anager													Logge	d in user: <b>admi</b>	n@internal   Conf	igure   Guide	About
											:	× 🖈	P				
	Data	a Centers	Clusters	Host	s Networks	Storage	Disks	Virtual Machines	Pools	Templates	Volumes	Use					
	New	v Server Ne	ew Desktop Edit	: Remove	e Run Once 🕨 🚺	🔳 🖳 Migrad	te Cancel Mig	ration Make Template E:	kport Change	CD Assign Tags	s 🏂 Guide Me		_			4	<mark>∂</mark>  • 1-1
æ		Name		Host							_		Status	Uptime	Logged-in User		
		i demo		zeus02		r Virtual Mac	hine						Up	2 days			
		🗐 demo	-vm-2		General	Da	ta Center		demo-d	:-32		-	Down	-			
	•	🗐 linux-	vm		Initial Run	Но	st Cluster		cluster-	32		-	Down				
		📼 nw-filt	er-vm-1		Console	110	Stelaster		cluster			1	Down				
	<u> </u>	🛋 nwfilte		zeus02	Host	No	me					- 1					
		nheið3	3-vm	zeus02	High Availability							- 🔳	Up	2 h			
	•	车 vm-1-	dc-30-cluster-3		Resource Allocat	.1011	scription						Down				
	•	🗐 vm-de	el-net-2		Boot Options	Ba	sed on Tem	plate	Blank			-	Down				
	•	🗐 vm-de	l-net-bug		Custom Propertie				<b>513 M</b>			_	Down				
	•	🔩 vm-te	mpalte-test-1				mory Size		512 M	5		- 1	Down				
	•	🔩 vm-te	mpalte-test-2				al Virtual CF		1			- []	Down				
	•	🔩 vm-te	mpalte-test-3			۵.	Advanced Pa	rameters					Down				
	•	🔩 vm-te	mpalte-test-4			Op	erating Syst	tem	Unassi	aned		-	Down				
	•	in20 🗐	08							,		- 📃	Down				
	Ge	eneral N	letwork Interf	2936									_				
ŀ													_				_
	Na	ame:	nwfil	ter-vm-								c	Drigin :		oVirt		
	De	escription:										R	Run On:		Any Host in (	Cluster	
	Те	mplate:	Blan	c								c	Custom Pro	perties:	Not-Configur	ed	
	Op	perating Sy	stem: Red I	Hat Ent								c	Cluster Con	npatibility Versi	on: 3.2		
	De	efault Displa	ay Type: Spice	2							OK Cancel						
	Pr	riority:	Low														

## **Even Windows via Sysprep**



nager													Log	ged in user: <b>admin</b>	@internal   Config	gure   Guide	About   1
												x)*					
	Dat	ta Cent	ters Cluster	rs Host	s Networks	Storage	Disks	Virtual Machines	Pools	Templates	Volumes	Us	ers				
	Nev	w Serve	r New Desktop	Edit Remove	e Run Once 🕨 👖	📕 🖳 Migra	ate Cancel Mi	gration Make Template E	Export Change		s 💲 Guide Me	_	_				<b>∂</b>   <del>+</del> 1-1
0			lame	Host				-					Status	Uptime	Logged-in User		• • • •
			lemo-vm	zeus02	🍥 New Serve	r Virtual Ma	chine						Up	2 days	Logged in oser		
		<b>I</b> 0	lemo-vm-2		General	Ge	neral					- 11	Down	-			
		<b>I</b>	inux-vm		Initial Run	Ti	me Zone		(GMT-1	2:00) GMT-12:0	0	•	Down				
		🗢 n	w-filter-vm-1		Console	Wi	ndows					- 11	Down				
		e 1		el-6: zeus02	Host	D	omain					-					
- 1		e r	hel63-vm	zeus02	High Availability							- 1	Up	2 h			
		🗢 v	m-1-dc-30-clust	er-3	Resource Allocat	tion						- 11	Down				
		i v	m-del-net-2		Boot Options			<b>R</b>				- 11	Down				
		🗐 v	m-del-net-bug		Custom Propertie	es						- 11	Down				
		🗠 v	m-tempalte-test	t-1								- 11	Down				
	•	🖷 v	m-tempalte-test	t-2									Down				
	•	🖷 v	m-tempalte-test	t-3								- 11	Down				
	•	🖷 v	m-tempalte-test	t-4									Down				
	•	🗐 v	vin2008									- 11	Down				
			1									- 6	_	_	_	_	_
	Ge	eneral	Network In	terfaces												_	
	Ν	ame:	יח	wfilter-vm-									Origin:		oVirt		
	D	escript	ion:									- 11	Run On:		Any Host in C	luster	
	Te	emplate	e: B	lank								- 11	Custom F	Properties:	Not-Configure	ed	
	0	peratin	g System: R	ed Hat Ent									Cluster C	ompatibility Versio	n: 3.2		
	D	efault D	Display Type: S	pice							OK Cance						
		riorit∨:		ow.													

### **Console Details (SPICE or VNC)**



inager												Logged i	n user: <b>admin</b>	@internal   Config	ure   Guide   A	bout
										×	)*(	ρ				
	Data Centers	Clusters	Hosts	s Networks	Storage	Disks	Virtual Machines	Pools	Templates	Volumes	Users	5				
	New Server Ne				-		ation Make Template E					-			2	
2					• ± Wigre		autorn make remplate t	.xport change	CD Assign lags			_			<i>w</i>	▼ 1-1
	Name		Host zeus02	New Server	r Virtual Ma	chine						<b>Status</b> Up	Uptime 2 days	Logged-in User		
	<ul> <li>demo</li> <li>demo</li> </ul>		Zeusoz	General	Pr	otocol		Spice		•		Down	2 uays			
	Iinux-			Initial Run	US	SB Support		Disable	d	•		Down				
	-	er-vm-1		Console		Smartcard en	abled					Down				
		er-vm-32-rhel-6	(zeus02	Host								Up				
	👝 📼 rhel63		zeus02	High Availability								Up	2 h			
	📕 📾 vm-1-	dc-30-cluster-3	3	Resource Allocat	ion	$\sim$						Down				
	📕 🗐 vm-de	el-net-2		Boot Options							ſ	Down				
	📕 🗐 vm-de	el-net-bug		Custom Propertie	s						(	Down				
	📕 🔩 vm-te	mpalte-test-1										Down				
	📕 🔩 vm-te	mpalte-test-2									ſ	Down				
	📕 🔩 vm-te	mpalte-test-3									[	Down				
	📕 🔩 vm-te	mpalte-test-4									[	Down				
	📕 🗐 win20	08									ſ	Down				
	General M	letwork Interf	aces												_	
												_				-
	Name:	nwfi	lter-vm-								Ori	igin:		oVirt		
	Description:										Ru	ın On:		Any Host in Cl	uster	
	Template:	Blan	k								Cu	ustom Prope	erties:	Not-Configure	d	
	Operating Sy	stem: Red	Hat Ent								Clu	uster Comp	atibility Versio	1: 3.2		
	Default Displa	ay Type: Spice	e							OK Cancel						
	Priority:	Low														

### **Host Aspects**

## oVirt

Logged in user: admin@internal | Configure | Guide | About | x X Virtual Machines Data Centers Clusters Hosts Networks Storage Disks Pools Templates Volumes Users 📕 💻 🦉 Migrate Cancel Migration Make Template Export Change CD Assign Tags 🍰 Guide Me New Server New Desktop Edit Remove Run Once 1-1 👻 🚽 æ Logged-in User Name Host Status Uptime New Server Virtual Machine (i) demo-vm zeus02 Up 2 days General Run On: demo-vm-2 Down Initial Run Any Host in Cluster linux-vm Down Console O Specific grey-vdsh nw-filter-vm-1 -Down Host Run/Migration Options: High Availability 📼 rhel63-vm zeus02 Up 2 h Run VM on the selected host (no migration allowed) Resource Allocation vm-1-dc-30-cluster-3 Down Allow VM migration only upon Administrator specific request (system will Boot Options vm-del-net-2 Down not trigger automatic migration of this VM) Custom Properties vm-del-net-bug Down vm-tempalte-test-1 Down CPU Pinning topology vm-tempalte-test-2 Down Format: v#p[ v#p] Examples: vm-tempalte-test-3 Down 0#0 => pin vCPU 0 to pCPU 0 vm-tempalte-test-4 Down 0#0 1#3 => pin vCPU 0 to pCPU 0 and pin VCPU 1 to pCPU 3 win2008 Down •1#1-4, ^2 => pin vCPU 1 to pCPU set 1 to 4, excludina 2 General Network Interfaces Name: nwfilter-vm-Origin: oVirt Run On: Description: Any Host in Cluster Template: Blank Custom Properties: Not-Configured Cluster Compatibility Version: 3.2 Operating System: Red Hat Ent OK Cancel Default Display Type: Spice Priority: Low

### **High Availability**

anager		_											Logg	jed in user: <b>admin</b>	@internal   Config	gure   Guide   A	About   :
											×	()★	P				
	Dat	ta Cente	rs Cluster	s Host	s Networks	Storage	Disks	Virtual Machines	Pools	Templates	Volumes	Use					
	_		New Desktop	_			_	gration Make Template B								2	▼ 1-1
2									- Appent officinge				Carton	Underse	Lannad in Usan	~	1-1
			me mo-vm	Host zeus02	💿 New Serve	r Virtual N	/lachine						Status Up	Uptime 2 days	Logged-in User		
	•		mo-vm-2	260302	General								Down	2 days			
	2	_	JX-VM		Initial Run		🗆 Highly Availa	ble					Down				
	÷.		-filter-vm-1		Console		Priority for Duu	/Migration queue:					Down				
	-		filter-vm-32-rhe	el-6: zeus02	Host		-	n migration queue.					Up				
		🗢 rhe		zeus02	High Availabilit	у	Low						Up	2 h			
			-1-dc-30-clust		Resource Allocat	ion	<ul> <li>Medium</li> <li>High</li> </ul>						Down				
		🗐 vm	-del-net-2		Boot Options		O High						Down				
		🗐 vm	-del-net-bug		Custom Propertie	s							Down				
		🔩 vm	-tempalte-test	-1									Down				
		🔩 vm	-tempalte-test	-2									Down				
		🔩 vm	-tempalte-test	-3									Down				
		🔩 vm	-tempalte-test	-4									Down				
		🗐 wir	12008										Down				
- I,																_	_
L	Ge	eneral	Network Int	terfaces													
	N	lame:	n١	wfilter-vm-								c	Origin:		oVirt		
	D	escriptio	n:									F	Run On:		Any Host in C	luster	
	Te	emplate:	BI	lank								C	Custom P	roperties:	Not-Configur	ed	
	0	perating	System: Re	ed Hat Ent								_ (	Cluster Co	ompatibility Version	n: 3.2		
	D	efault Dis	splay Type: S <sub>l</sub>	pice							OK Cancel	IJ					
		riority:		w													

### **Control Allocated Resources (Disk, Memory)**

Logged in user: admin@internal | Configure | Guide | About | x X Virtual Machines Data Centers Clusters Hosts Networks Storage Disks Pools Templates Volumes Users II 📕 🖳 Migrate Cancel Migration Make Template Export Change CD Assign Tags 🍰 Guide Me New Server New Desktop Edit Remove Run Once 1-1 👻 🚽 æ Uptime Logged-in User Name Host Status New Server Virtual Machine demo-vm zeus02 Up 2 days General Memory Allocation: demo-vm-2 Down Initial Run Physical Memory Guaranteed 512 MB linux-vm Down Console nw-filter-vm-1 Down Host Storage Allocation: (Available only when a template is selected) High Availability Template Provisioning O Thin Clone rhel63-vm zeus02 Up 2 h **Resource** Allocation vm-1-dc-30-cluster-3 Down Boot Options vm-del-net-2 Down Custom Properties 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 General Network Interfaces Name: nwfilter-vm-Origin: oVirt Run On: Description: Any Host in Cluster Template: Blank Custom Properties: Not-Configured Cluster Compatibility Version: 3.2 Operating System: Red Hat Ent OK Cancel Default Display Type: Spice Priority: Low

### **Boot Devices**

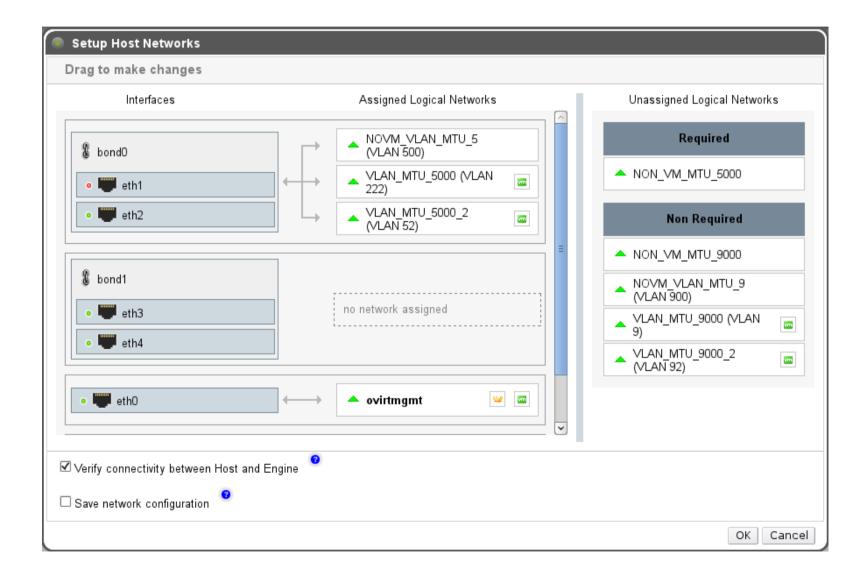
anager												Logged	in user: <b>admi</b>	n@internal   Config	ure   Guide   About	
										×	)*(	2				
	Data Ce	nters Cluster	rs Host	s Networks	Storage	Disks	Virtual Machines	Pools	Templates	Volumes	Users	s				
		ver New Desktop	Edit Remove			ate Cancel Mig	ration Make Template E	xport Change							ر با⊛	-1
æ		Name	Host							-		Status	Uptime	Logged-in User		
	<b>_</b> I	demo-vm	zeus02	🔘 New Serve	r Virtual Ma	chine						Up	2 days	Logged in osei		
		demo-vm-2		General	Bo	ot Sequence	:					Down	,			
		linux-vm		Initial Run	Fir	rst Device		Hard D	isk	•	1	Down				
		nw-filter-vm-1		Console	S	econd Device	e	[None]		•		Down				
	<u> </u>		el-6:zeus02	Host	At	tach CD				•						
	🔺 📼	rhel63-vm	zeus02	High Availability								Up	2 h			
	. 👄	vm-1-dc-30-clust	er-3	Resource Allocat	ion Lir	iux Boot Opt	ions:					Down				
		vm-del-net-2		Boot Options	ke	ernel path						Down				
		vm-del-net-bug		Custom Propertie	es in	itrd path						Down				
	• 🗠	vm-tempalte-test	t-1		ke	ernel parame	ters					Down				
	• 🗳	vm-tempalte-test	t-2									Down				
	• 🗠	vm-tempalte-test	t-3									Down				
	•	vm-tempalte-test	t-4									Down				
		win2008				k						Down				
	Genera	al Network In	torfaces									_	_	_		
	Genera	al Network III	terraces												_	
	Name:	n	wfilter-vm-								Or	rigin:		oVirt		
	Descrip	ption:									Ru	un On:		Any Host in Cl	uster	
	Templa	ate: B	lank								Cu	ustom Prop	erties:	Not-Configure	d	
	Operati	ing System: R	ed Hat Ent								Cli	uster Comp	atibility Versi	on: 3.2		
	Default	: Display Type: S	pice							OK Cancel						
	Priority	/: L	ow													

# Advanced Options via Custom Properties OVirt

lanager	L													Logge	ed in user: <b>admin</b>	@internal   Config	jure   Guide	About
													x)*					
	Dat	ta Center	Clusters	Host	s Networks	Storage	Disks	Virtual Mach	ines	Pools	Templates			ers				
	-		New Desktop Ed					ration Make Temp	_									<mark>∂</mark>   <del>▼</del> 1-1
æ		Nan		Host					- 1					Status	Uptime	Logged-in User		11
			io-vm	zeus02	🍥 New Serve	r Virtual Ma	achine							Up	2 days	Logged in oser		
		🗐 den	o-vm-2		General	s	ndbuf	•				+ -		Down				
		🗐 linu	(-vm		Initial Run		ap_agent	•	true			+ -	- 11	Down				
		🛋 nw-	ilter-vm-1		Console		host					+ -		Down				
		🛋 nwf		6(zeus02	Host								- 11					
		📼 rhei	63-vm	zeus02	High Availability	LF	Please select :	a key 🗾				+ -		Up	2 h			
		🛋 vm-	L-dc-30-cluster-	3	Resource Allocat	ion			20					Down				
	•	🗐 vm-	del-net-2		Boot Options									Down				
	•	🗐 vm-	del-net-bug		Custom Propert	ties								Down				
	•	🔩 vm-	empalte-test-1										1	Down				
	•		empalte-test-2										- 11	Down				
	•		empalte-test-3										- 11	Down				
	•		empalte-test-4										- 11	Down				
	•	🗐 win	2008											Down				
	G	eneral	Network Inter	faces														
				later										_			_	_
	N	lame:	nwfi	ilter-vm-										Origin:		oVirt		
	D	escription												Run On:		Any Host in C	luster	
	Т	'emplate:	Blan	nk										Custom Pr	roperties:	Not-Configure	ed	
	C	Operating S	ystem: Red	Hat Ent										Cluster Co	mpatibility Versior	: 3.2		
	D	)efault Dis	olay Type: Spic	e								OK Cance	IJ					
	P	Priority:	Low	/														



### **Setup Networks: Dialog**



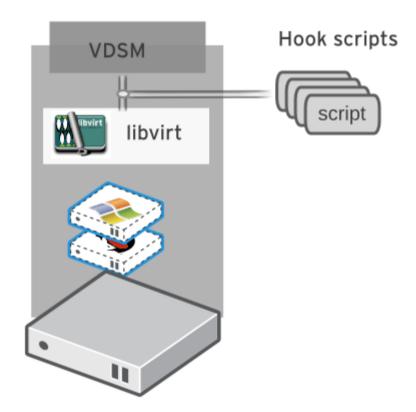
### **Controlling resources: Quota**

	age					
Used by Others ■ Used by You  □ Free Quota Summary 11% 11% → Hide Quota Distribution Student-quota 25% 25% Gold-quota 0% Staff-quota 0%	Distribution Dia	Total Size: Number of Snapshots: Total Size of Snapshots:		1GB 2 <1GB		
Memory Virtual Mach						
Used by Others Used by You Free Description	hines' Disks & Snapshots	Disks	Virtual Size	Actual Size	Snapshots	
Quota Summary		0	0GB	0GB	0	
Unlimited  Hide Quota Distribution	npool-2	1	1GB	0GB	2	
Student-quota						

## oVirt

### Hooks

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



### Hooks



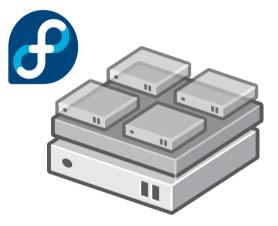
- Hook scripts are called at specific VM lifecycle events
  - VDSM (management agent) Start
  - Before VM start
  - After VM start
  - Before VM migration in/out
  - After VM migration in/out
  - Before and After VM Pause
  - Before and After VM Continue
  - Before and After VM Hibernate
  - Before and 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

## oVirt

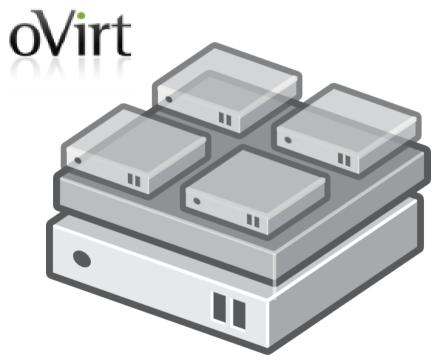
### Full Host

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



### oVirt Node

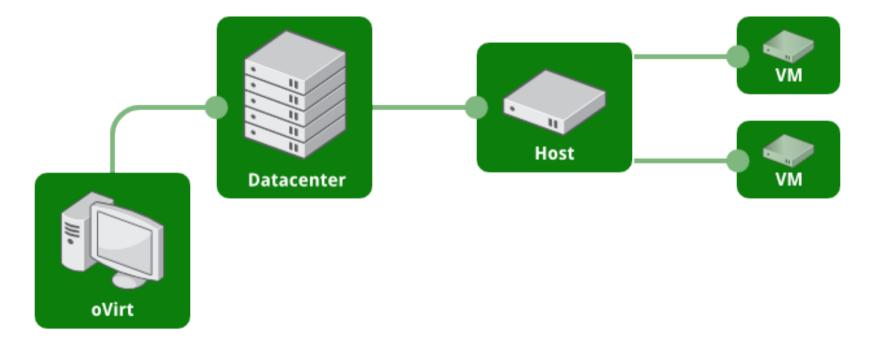




- Standalone hypervisor
  - Small footprint ~ 170MB
    - Customized 'spin' of Fedora + KVM
    - 'Just enough' Fedora to run virtual machines
    - Runs on all RHEL hardware with Intel VT/AMD-V CPUs
  - Easy to install, configure and upgrade
    - PXE boot, USB boot, CD or Hard drive

### **Example 1: One Host Environment**

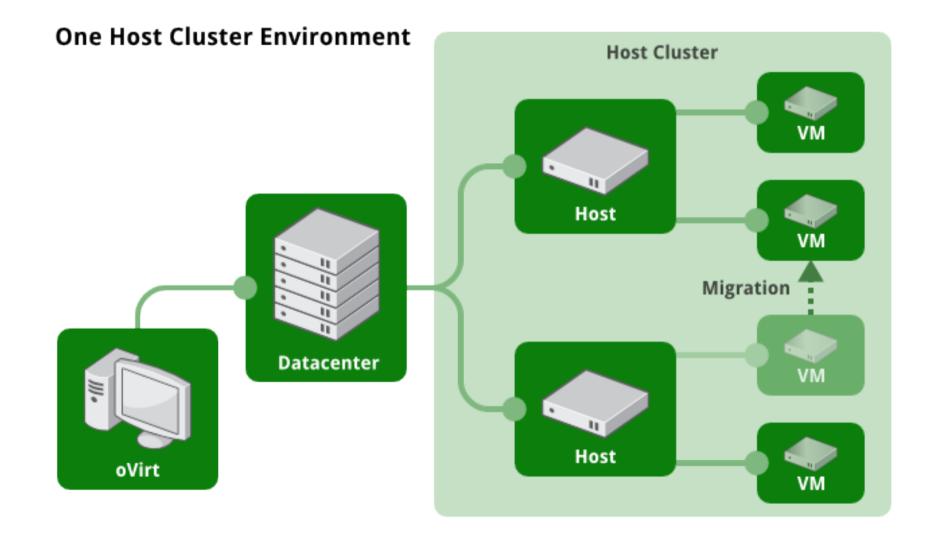
#### **Basic One Host Environment**



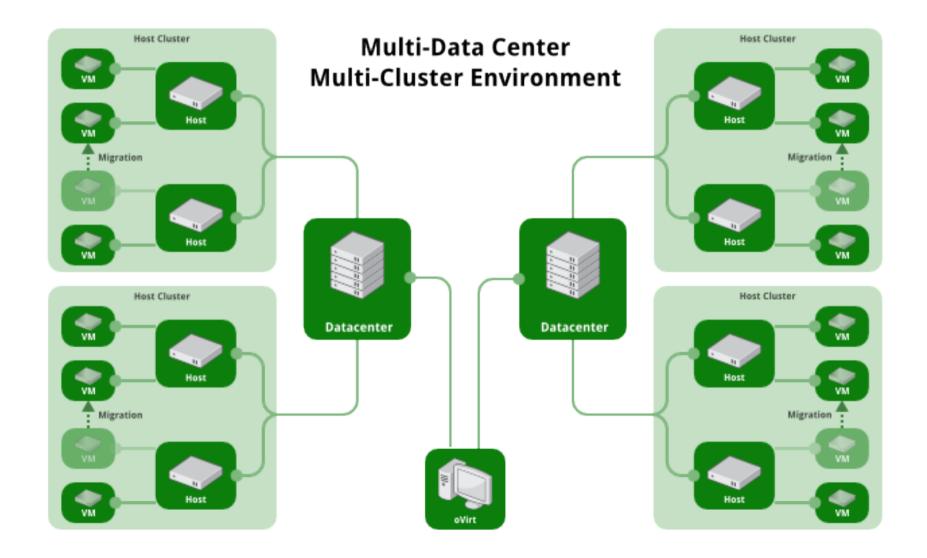
oVirt

### **Example 2: Multiple hosts**





### **Example 3: Multi-Datacenter/Multi-Host**



Virt

### **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

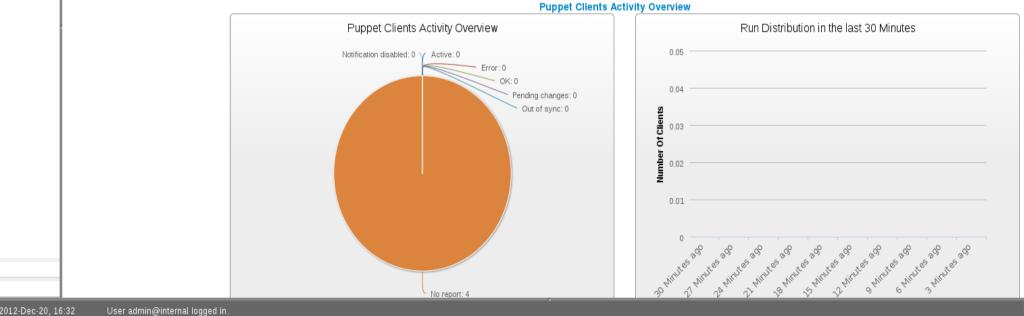
### **UI-Plugin: Foreman main tab**



ation Manager

Logged in user: admin@internal | (

											× ★ 🔎		
	Data Centers	Clusters	Hosts	Networks	Storage	Disks	Virtual Machines	Pools	Templates	Volumes	Users	Foreman Dashboard	
			(	Generated at 20	Dec 13:41							$\sim$	
9				Description									Data
				Hosts that had	l performed m	odifications w	ithout error						0
				Hosts in Error	State								0
				Good Host Re	ports in the la	st 35 minutes							0 / 4 hosts (0%)
				Hosts that had	I pending chai	nges							0
				Out Of Sync H	losts								0
				Hosts With No	Reports								4
				Hosts With Ale	erts Disabled								0



### **UI-Plugin: oVirt Monitoring sub-tab**

Search: Host:											× ★ (	<u> </u>		
	Data Centers	Clusters	Hosts	Networks	Storage	Disks	Virtual Machines	Pools	Templates	Volumes	User	rs	10	Events
stem	New Edit Rer	move Activate	Maintenance	Configure Local	I Storage Powe	r Management	Assign Tags						æl∓ 1	-1 🔇
kpand All Collapse All	2 Name		Hostname/IP	C	Cluster	Da	ta Center	Status	Virtual Mac	hines Merr	nory CPU	U Networ	k SPM	
🕥 System	🔺 Icentos-hyp									75	5%	1% 0%		
🗸 🗐 ovido-local														
Storage														
▶ 🔩 Networks														
卫 Templates														
Clusters														
							III							
	General V	/irtual Machin	es Networ	k Interfaces	Host Hooks	B Permissi	ons Hardware Info	ormation	Monitoring Deta	ails				Even
		/irtual Machin Comment Downt		k Interfaces	Host Hooks	Permissi	ons Hardware Info	_	Monitoring Deta	ails				Even
					Host Hooks	9 Permissi		ohs	Monitoring Deta	ails				Even
	Acknowledge (		time Notification	ns Schedule	Host Hooks		Details Grap	ohs	Monitoring Deta	nils				Even
	Acknowledge ( Service RHEV CPU	Comment Downt	ime Notification Output RHEV OF	ns Schedule K: cpu ok - 1 <sup>4</sup>		os-hyp01.li	Details Grap	ohs Graphs	Monitoring Deta		0.0.100	.42		Even
	Acknowledge ( Service RHEV CPU	Comment Downt	ime Notification Output RHEV OF RHEV OF	ns Schedule <: cpu ok - 1º <: cpu.load.a	% used (cent	os-hyp01.li 020 (cento	Details Grap PNP Performance G 4 Hours	ohs Graphs	~		9.0.100	.42		Even
	Acknowledge ( Service RHEV CPU RHEV Host	Comment Downt I Load Check t Load Check	Notification Output RHEV OF RHEV OF RHEV OF	ns Schedule <: cpu ok - 14 <: cpu.load.a <: Hosts ok -	% used (cent avg.5m ok - 0.	os-hyp01.li 020 (cento th state UF	Details Grap PNP Performance G 4 Hours	ohs Graphs	pad utilizati	ion for 10	9.0.100	. 42		Even
	Acknowledge ( Service RHEV CPU RHEV Host RHEV Host RHEV KSM	Comment Downt I Load Check t Load Check t Status Check I Load Check	Notification Output RHEV OK RHEV OK RHEV OK RHEV CR	ns Schedule <: cpu ok - 1º <: cpu.load.a <: Hosts ok - RITICAL: ksm	% used (cent avg.5m ok - 0. - 1/1 Hosts wi n.cpu.current (	os-hyp01.k 020 (cento th state UF critical - 90:	Details Grap PNP Performance G 4 Hours	ohs Graphs	pad utilizati	ion for 10	). 0. 100	. 42		Even
	Acknowledge ( Service RHEV CPU RHEV Host RHEV Host RHEV KSM RHEV Mem	Comment Downt I Load Check t Load Check t Status Check I Load Check nory Check	ime Notification Output RHEV OF RHEV OF RHEV OF RHEV OF RHEV W	ns Schedule <: cpu ok - 14 <: cpu.load.a <: Hosts ok - RITICAL: ksm ARNING: mer	% used (cent avg.5m ok - 0. - 1/1 Hosts wi n.cpu.current o mory warning	os-hyp01.k 020 (cento th state UF critical - 90: 1 - 75.00%	Details Grap PNP Performance G 4 Hours	ohs Graphs	~	ion for 10	0.0.100	. 42		Even
okmarks	Acknowledge C Service RHEV CPU RHEV Host RHEV Host RHEV KSM RHEV Mem RHEV Netw	Comment Downt I Load Check t Load Check t Status Check I Load Check	ime Notification Output RHEV OF RHEV OF RHEV OF RHEV CF RHEV CF	ns Schedule <: cpu ok - 1 <sup>4</sup> <: cpu.load.a <: Hosts ok - RITICAL: ksm ARNING: mer RITICAL: Hos	% used (cent avg.5m ok - 0. - 1/1 Hosts wi h.cpu.current o mory warning sts critical - 1/	os-hyp01.l; 020 (cento th state UF critical - 90: 1 - 75.00% 1 2 Nics with	Details Grap PNP Performance G 4 Hours	bhs Graphs	pad utilizati	ion for 10			20 17:40	

oVirt

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

# oVirt

### 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



## THANK YOU !

http://www.ovirt.org