PRESENTED BY RED HAT

LEARN. NETWORK.
EXPERIENCE OPEN SOURCE.

www.theredhatsummit.com

Red Hat Powered VDI: Setting a New Standard for Desktop Virtualization

Session#208

Jeff Jameson, Product Marketing Manager
Dave Simmons, Sr. Solutions Architect

May 5, 2011

AGENDA

- VDI: Market Benefits & Barriers
- Solving Desktop Challenge
- Partner & ISV Community
- Feature overview
- The KVM Hypervisor
- Desktop Security
- Desktop Management
- SPICE
- Competitive Pricing

“This is the year for VDI!”

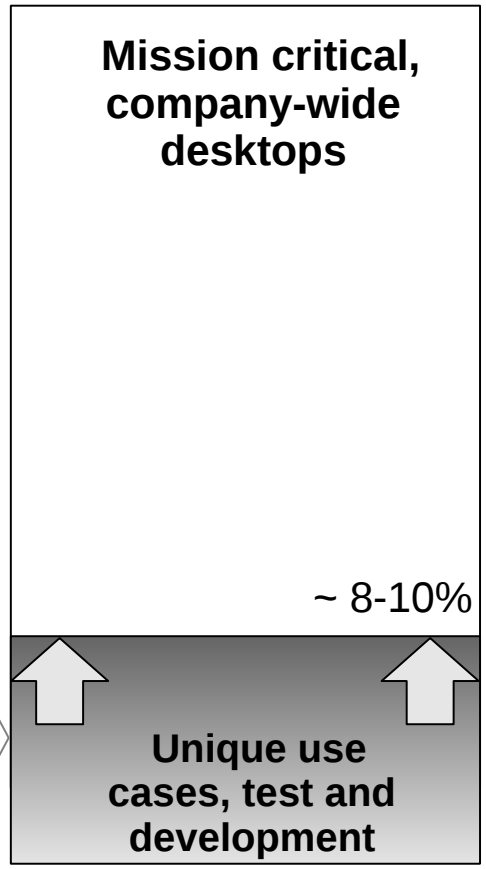
....Isn't it?

VDI: MARKET BENEFITS AND BARRIERS

BENEFITS

- Desktop Management
- Data Security
- Resource Flexibility & Efficiency (cloud)
- Reduce costs

PENETRATION

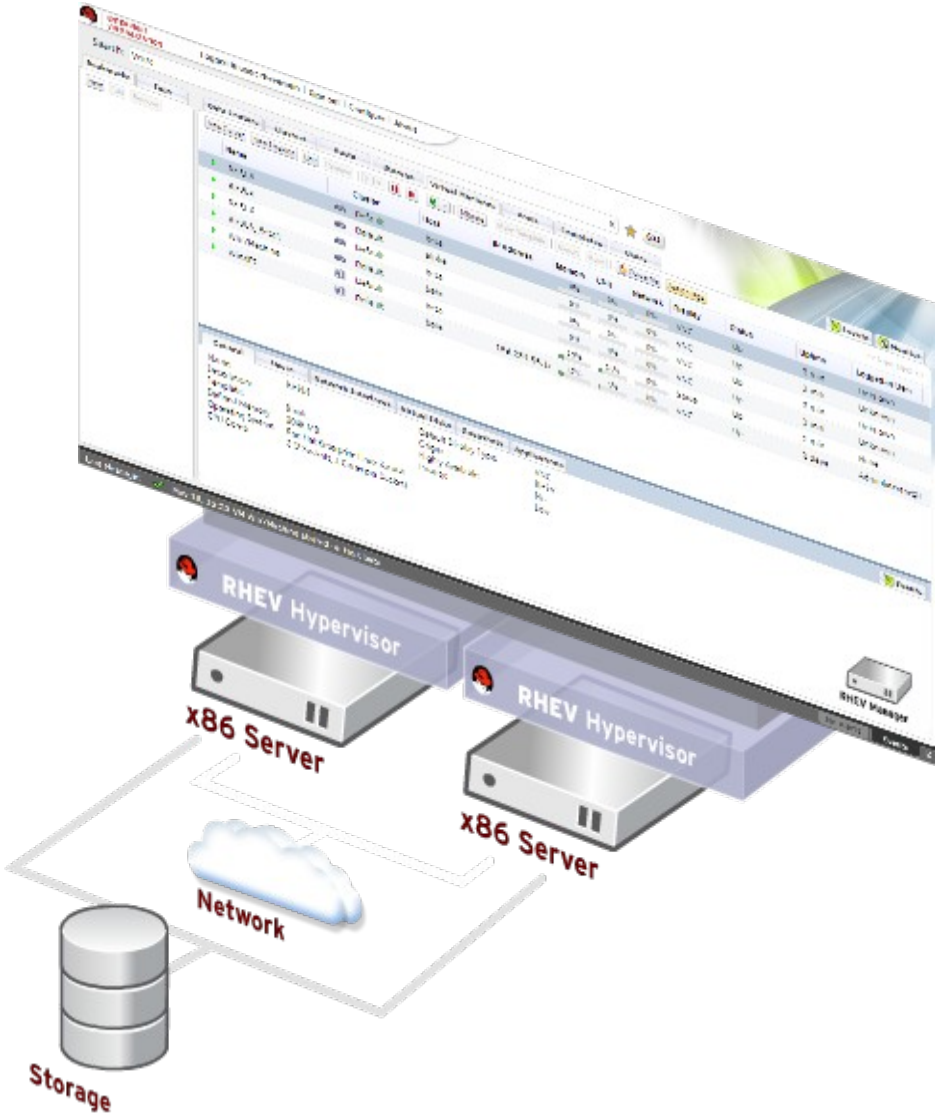


BARRIERS

- Cost & licensing
- User experience and scalability
- Security
- Application support

SOLVING DESKTOP CHALLENGES: RED HAT ENTERPRISE VIRTUALIZATION FOR DESKTOPS

- **Advanced KVM hypervisor technology**
- Refined **centralized management**
- Industry leading **scalability and VM density**
- Highest kernel-level **security** and isolation with SELinux
- Incredible **end-user experience**, including bi-directional audio & video
- Choice of **client device**
- **Up to 75% cost savings relative to VMware!**



AND DON'T FORGET WINDOWS...

- Supported guest desktop operating systems
  - Red Hat Enterprise Linux 3, 4, 5, & 6 (32 and 64 bit)
  - Windows XP SP3+ (32 bit)
  - Windows 7 (32 and 64 bit)
- Microsoft SVVP certified
- Support WHQL drivers to be delivered by RHEV Tools or Windows Update
- V2V (Virtual to Virtual) migration tool for Windows VMs

LEVERAGE THE RED HAT PARTNER COMMUNITY

Seamlessly Integrating 3rd party solutions into RHEV

- Expansive partner community
  - ISV and IHV partners
  - Certified solutions with vendors, including Windows-based
- Red Hat maintains technology relationships
  - APIs offer direct product integration
  - Open source software accelerates technology development by interacting with ISVs, IHVs, and our customers

RHEV for DESKTOPS PARTNER COMMUNITY

Application Virtualization	User Virtualization	Printing	Thin Clients	Broker
endeavors technologies	AppSense	ThinPrint	IGEL TECHNOLOGY	LEOSTREAM
InstallFree	RES Software	UniPrint	10ZiG TECHNOLOGY	
	tricerat		WYSE	
	RINGCUBE		devon IT alternative desktop computing	

Visit in Partner Pavilion:
IGEL: Booth #904
Leostream: Booth #203

Red Hat Enterprise Virtualization for Desktops:

Feature Overview

Dave Simmons, Sr. Solutions Architect

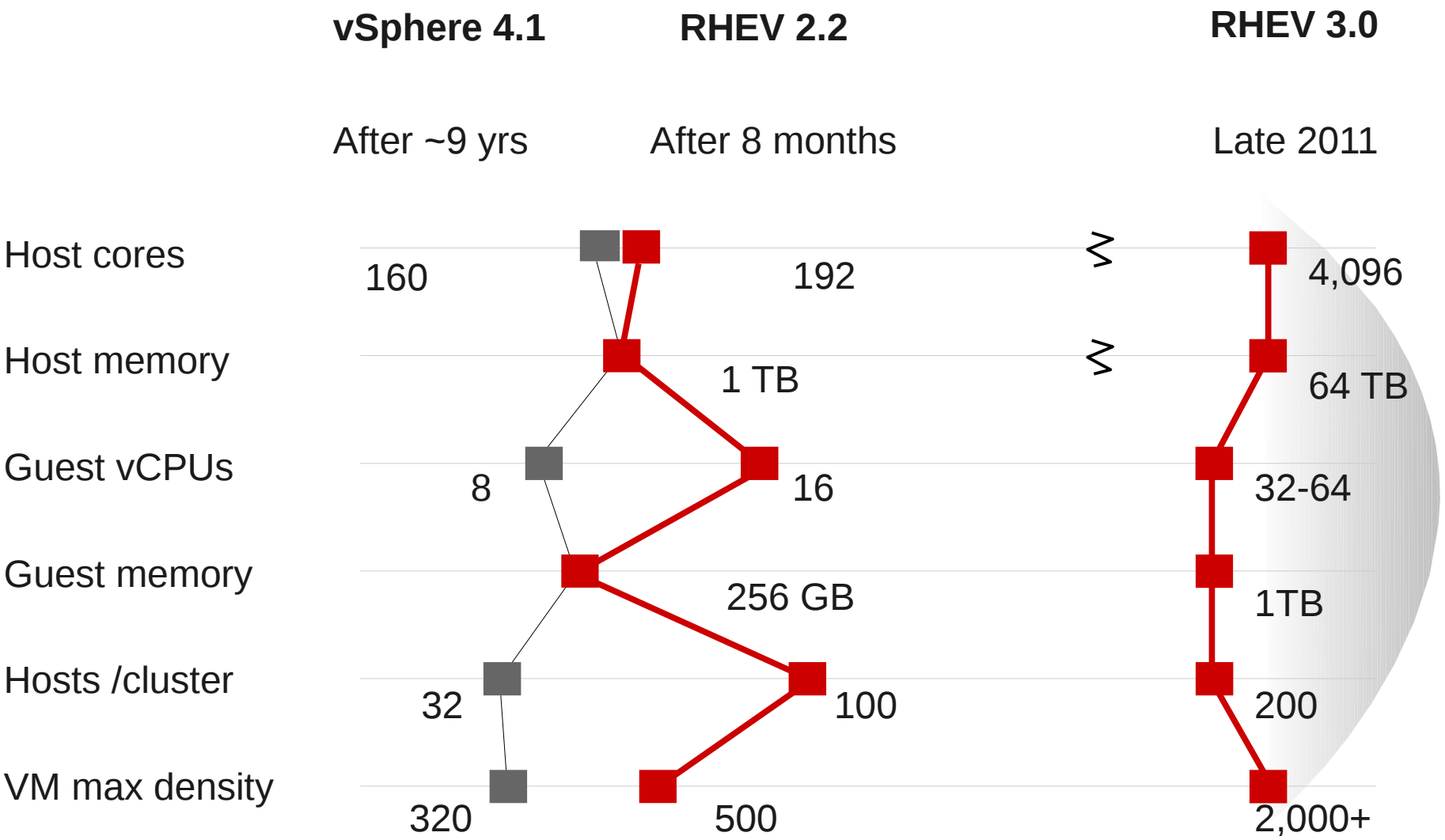
ENTERPRISE-CLASS DESKTOP MANAGEMENT

Feature	Description
High availability	Restart guest VMs from failed hosts automatically on other hosts
Live migration	Move running VM between hosts. 0 downtime, 0 sessions lost
Memory Overcommit	Commit more memory than physically availalble (KSM technology)
System scheduler	Continuously load balance VMs based on resource usage/policies
Power saver	Concentrate VMs on fewer servers during off-peak hrs. Save power
SSL encryption	Ensures a secure tunnel between the client device and host server
Maintenance Manager	0 downtime for VMs during planned maintenance window
Image management	Snapshots, Template-based provisioning, etc
Linked Images	Reduce storage up to 90% with thin provisioning
Desktop Pools	Group identical desktop VMs from a template for on-demand use
Monitoring & reporting	For all objects in system – VM guests, hosts, networking, storage etc.
V2V	Convert Vms from Vmware and RHEL/Xen to RHEV

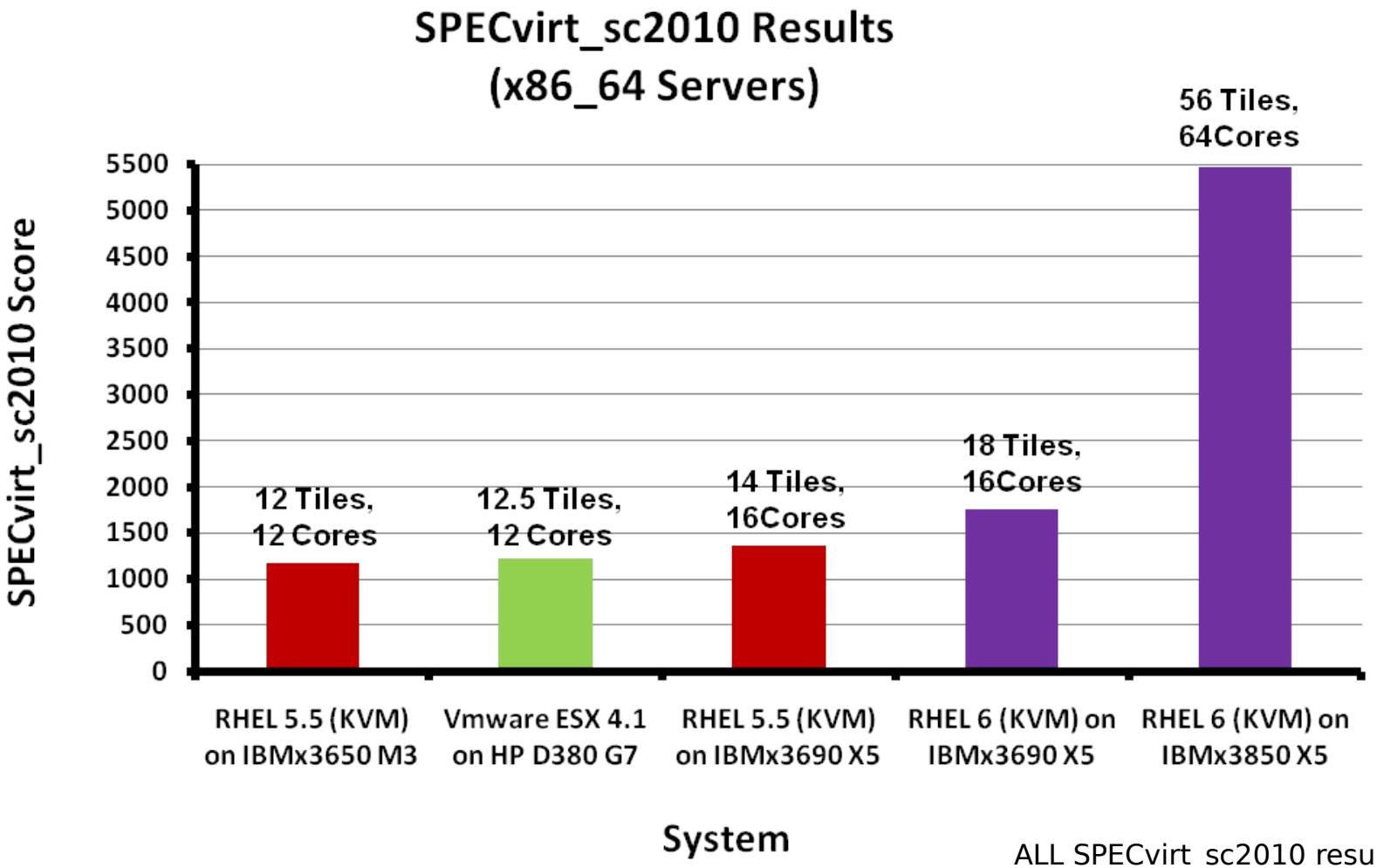
BENEFITS OF KVM HYPERVISOR

- Leverages Linux – no need to re-invent the wheel
  - Built on trusted, stable enterprise grade platform
  - Scheduler, memory management, hardware support etc
  - Ease of management – use same tools for managing physical servers and hypervisors
- Advanced host features
  - Inherit scalability, NUMA support, power management, hot-plug, etc. from Linux – others have to develop from scratch
  - SELinux security, advanced scheduler, RAS support etc

INDUSTRY LEADING SCALABILITY



OUTSTANDING PERFORMANCE ON OPEN INDUSTRY BENCHMARKS



"SPECvirt_sc2010 Benchmark Results " December 2010

ALL SPECvirt_sc2010 results published to date use RHEL as the guest / VM Operating System! RHEL 6 shows 29% better SPECvirt performance than RHEL 5.5 (KVM) on the same hardware!

INDEPENDENT REVIEWS SHOW RED HAT COMING ON STRONG

Test Center Scorecard — InfoWorld

	Management	Performance	Reliability	Scalability	Installation	Overall Score
	25%	20%	20%	20%	15%	
Citrix XenServer 5.6.1	7	8	8	7	9	7.7 GOOD
	25%	20%	20%	20%	15%	
Microsoft Windows Server 2008 R2 Hyper-V	8	8	9	8	7	8.1 VERY GOOD
	25%	20%	20%	20%	15%	
Red Hat Enterprise Virtualization for Servers 2.2	8	8	8	9	9	8.4 VERY GOOD
	25%	20%	20%	20%	15%	
VMware vSphere 4.1	9	9	9	9	9	9.0 EXCELLENT

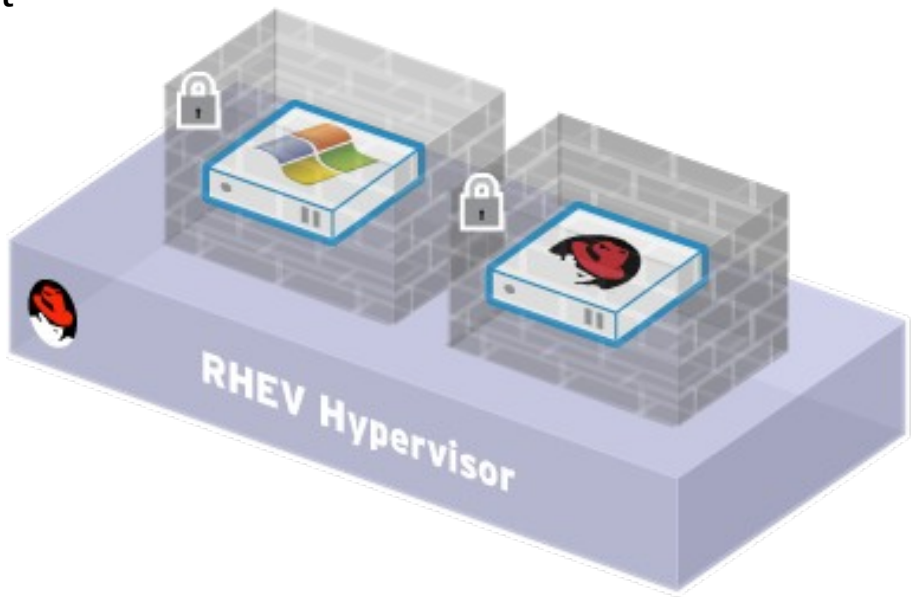
Source: InfoWorld, *Virtualization shoot-out: Citrix, Microsoft, Red Hat, and VMware,* April 13, 2011

http://bit.ly/rhevshootout

***Study did not take into account product cost!**

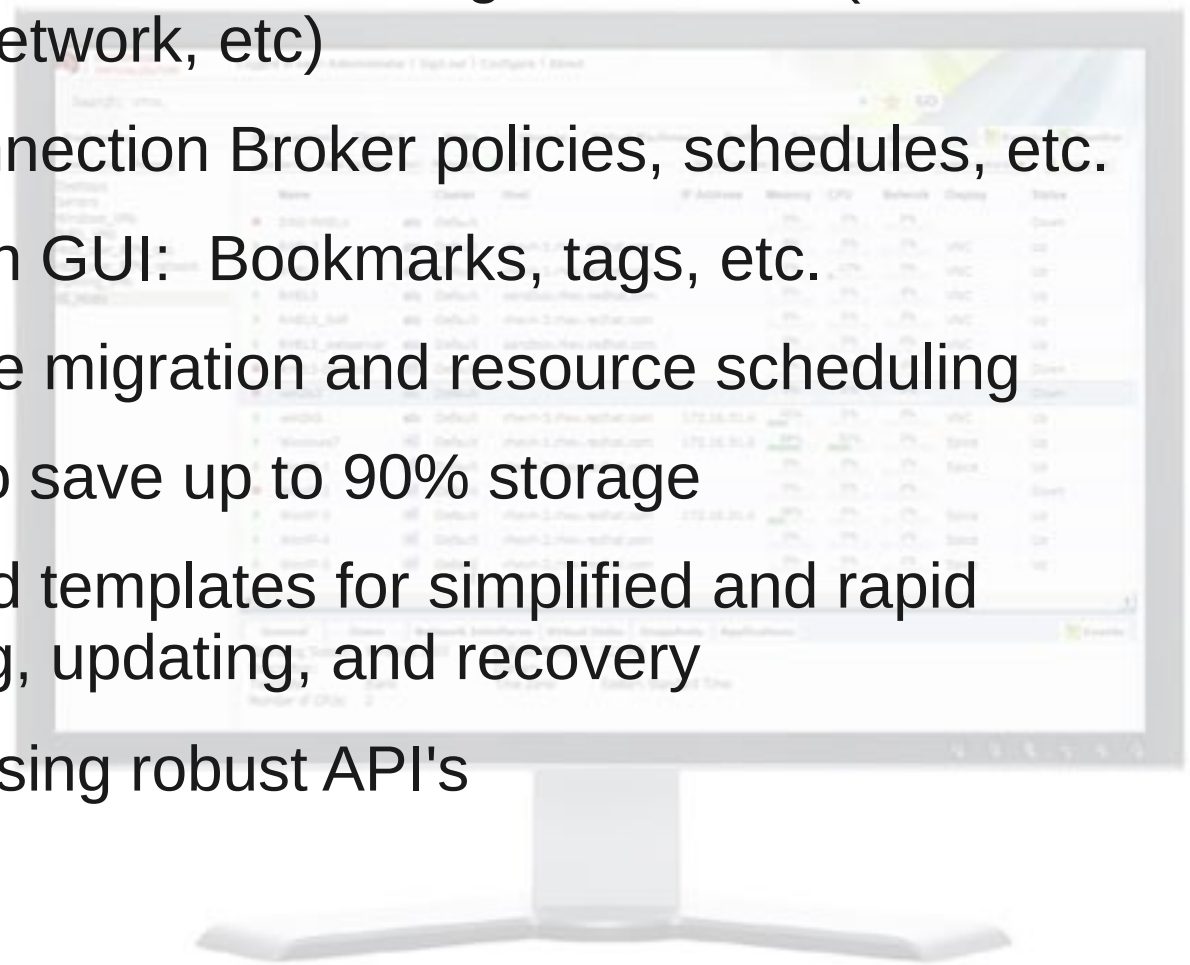
ADVANCED DESKTOP SECURITY

- SELinux security policies maintain VM infrastructure on hosts
  - Provides protection and isolation for virtual machines and host
  - Compromised virtual machine cannot access other VMs or host
- sVirt Project
  - Sub-project of NSA's SELinux community. Provides more granular security policies
  - Multilevel security. Isolate guests
  - Contain any hypervisor breaches
  - Will be included in RHEL 6
- SSL encapsulation
  - Creates secure tunnel from host to client device

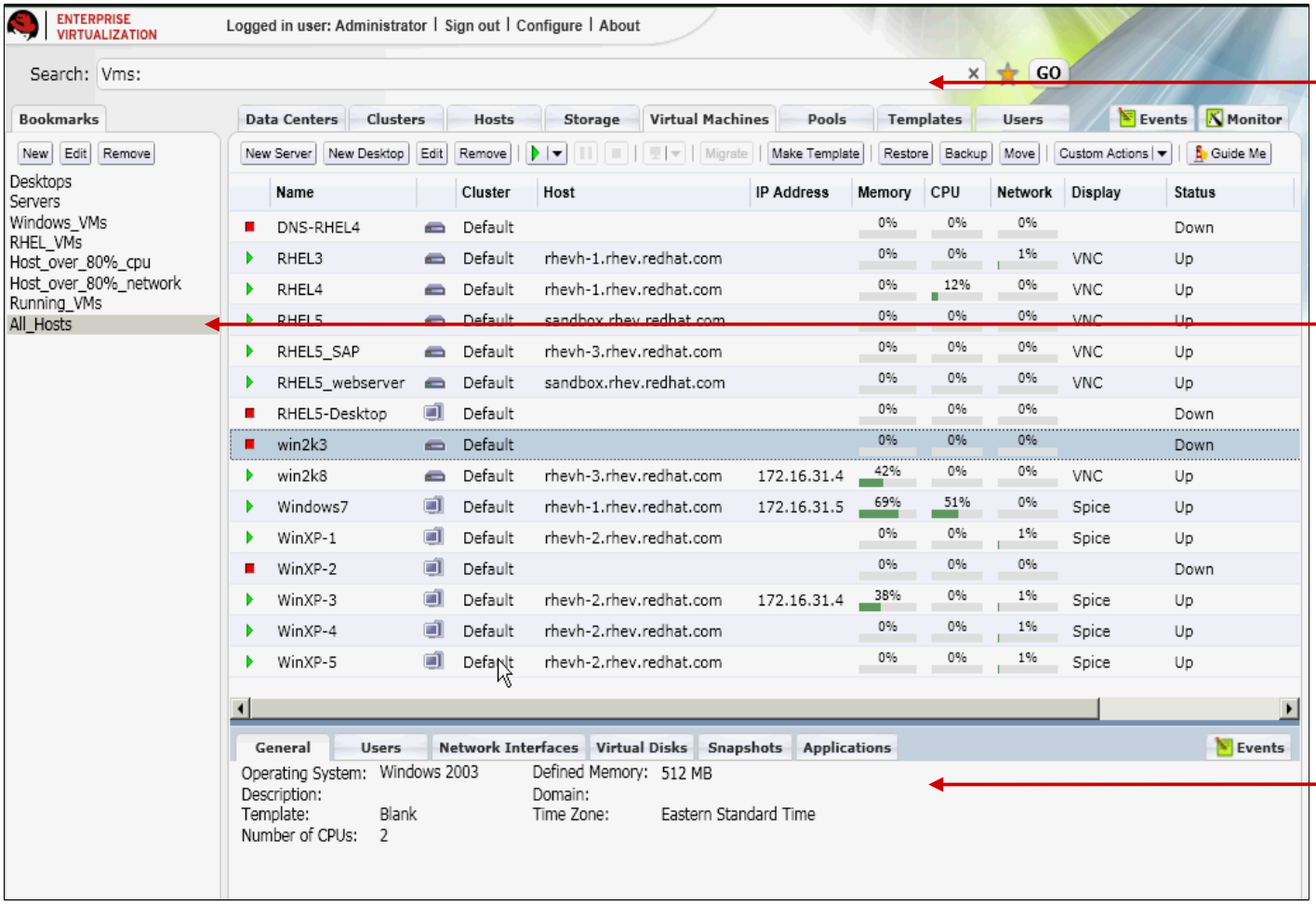


ADVANCED CENTRALIZED MANAGEMENT

- Single point of administration to manage all assets (hosts, VMs, templates, storage, network, etc)
- Manage desktop Connection Broker policies, schedules, etc.
- Intuitive search-driven GUI: Bookmarks, tags, etc.
- Create policies for live migration and resource scheduling
- Thin provision VMs to save up to 90% storage
- Create snapshots and templates for simplified and rapid provisioning, patching, updating, and recovery
- 3rd party integration using robust API's



ADVANCED DESKTOP MANAGEMENT



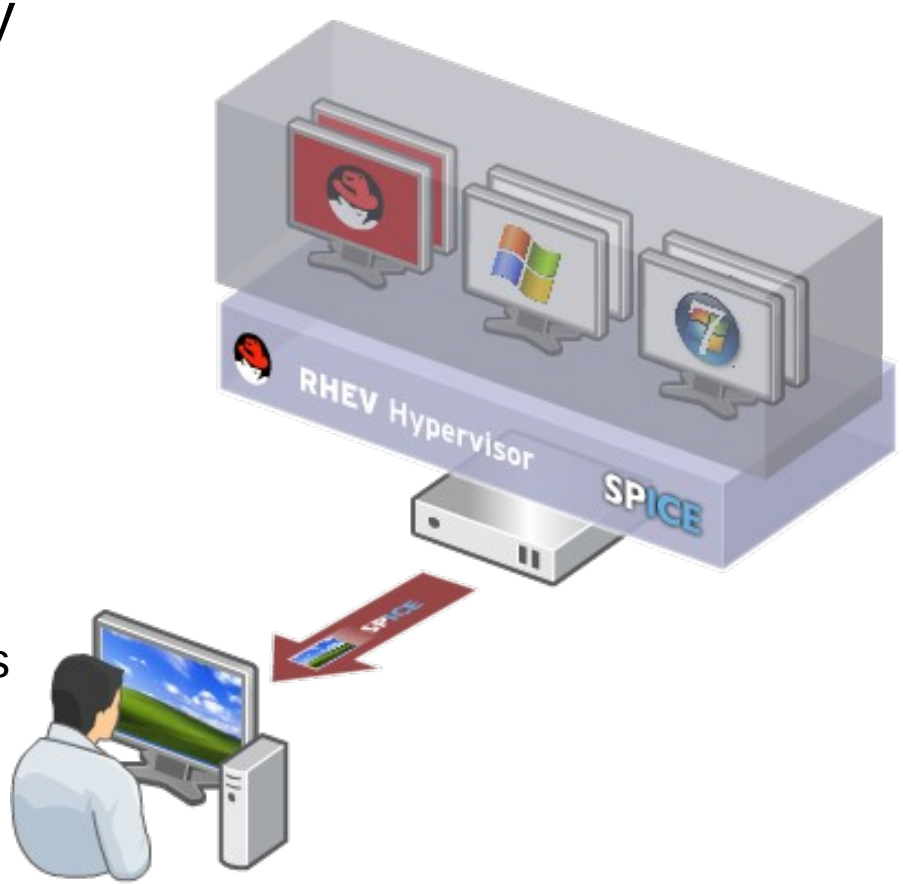
Search-driven UI makes managing thousands of objects easy

Bookmarks, tags, and other advanced GUI functions

Cross-correlate information across users, VMs, hosts, applications, status, etc.

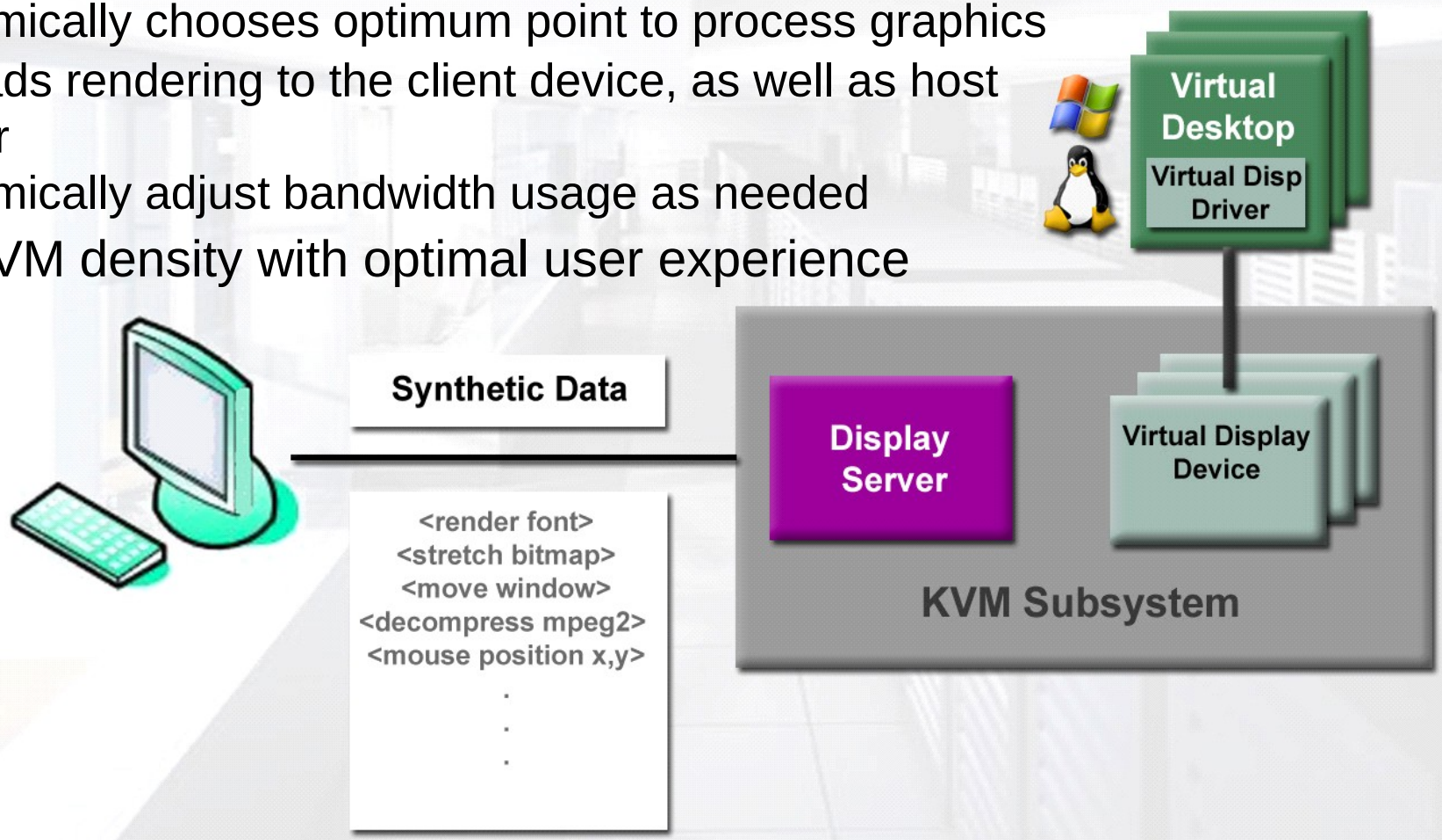
SPICE: EXCEPTIONAL USER EXPERIENCE

- Designed and created explicitly for desktop virtualization
- Open source protocol
- Exceptional user experience
  - Bi-directional audio & video
  - VoIP & video conferencing
  - HD quality video
  - High resolution display
  - Multiple monitor capable
  - USB redirection for storage & devices
  - Print to local or network printers



SPICE: HOW DOES IT WORK?

- Adaptive/intelligent protocol
  - Dynamically chooses optimum point to process graphics
  - Offloads rendering to the client device, as well as host server
  - Dynamically adjust bandwidth usage as needed
- Highest VM density with optimal user experience



WHAT CLIENT DEVICE SHOULD I USE?

- Access via web browser
  - Active X component (Win)
  - Mozilla XPI (Linux)

- Nearly any standard PC
  - Windows or RHEL 5.5+
    - Desktops, laptops, etc
- Thin Clients
  - Windows XPe or Windows Embedded Standard 2009
    - Wyse, HP, DevonIT, IGEL, 10zig, and more...
  - Linux-based thin clients
    - IGEL shipping now, 10zig soon, Wyse by EOY

Red Hat Enterprise Virtualization for Desktops:

Pricing, Competition, Wrap up...

Jeff Jameson, Product Marketing Manager

RED HAT SUBSCRIPTIONS

Provides continuous value and support for your virtualization infrastructure now and in the future

- Product Access
- Updates
- Patches
- Knowledge Base
- Support options
- Certification

> The subscription model .... a winning formula, one that more vendors should consider adopting.....
>
> *Editor, CNET News*
> *October 20, 2009*

SIMPLIFIED SUBSCRIPTION PRICING MODEL

SERVER VIRTUALIZATION

- Complete management feature set (high availability, live migration, system scheduler, power saver etc.)
- High-performance KVM Hypervisor (RHEV-H)

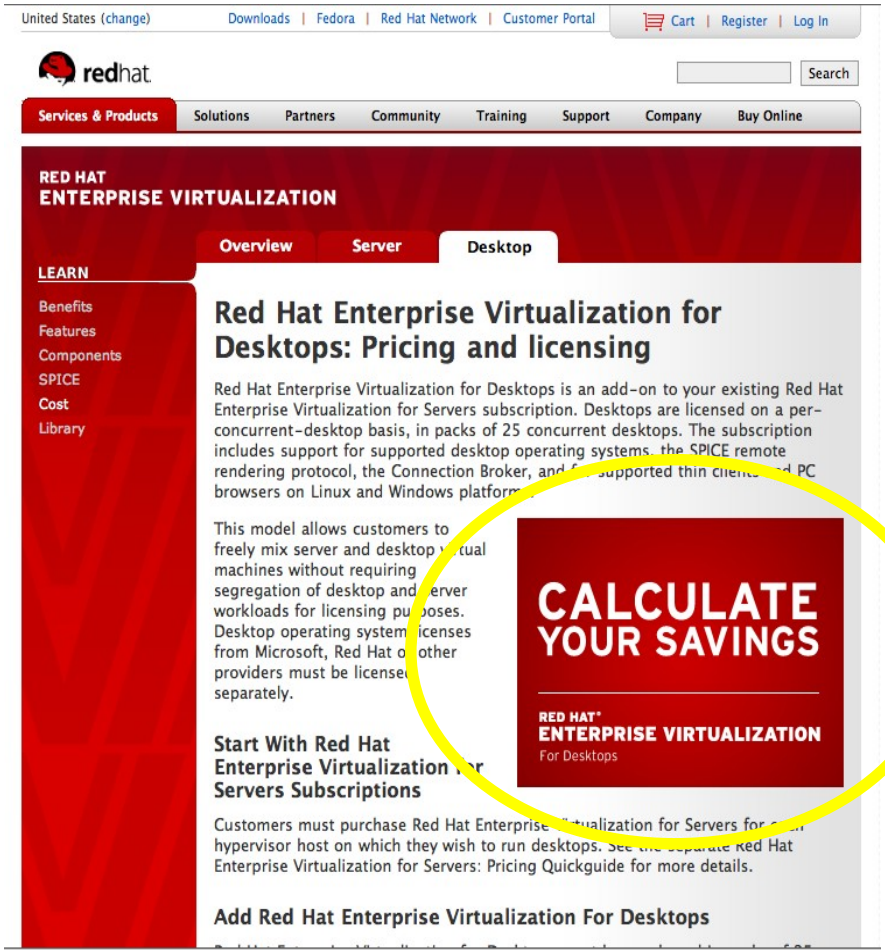
DESKTOP VIRTUALIZATION

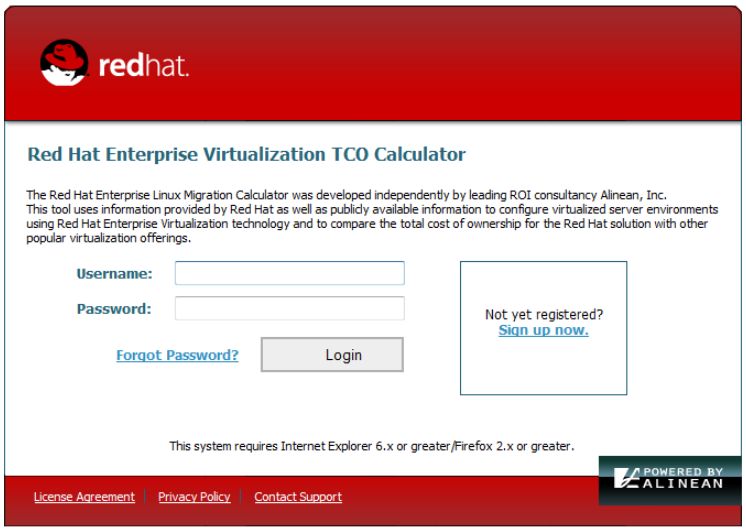
- Add-on to RHEV infrastructure
- SPICE, connection broker, desktop pools, etc.
- Packs of 25 desktops

HOW DOES PRICING COMPARE?

	Red Hat	VMware	Citrix
	Enterprise Virtualization for Desktops 2.2	View Enterprise	XenDesktop, VDI Edition
1 year cost*	$4,494	$18,750	$19,500
3 year cost*	$13,482	$26,250	$25,500
3 year cost w/hardware	$30,282	$43,050	$59,100
Avg. cost/desktop/yr	$101	$144	$197
Rich user experience	√ (SPICE)	√ (PCoIP)	√ (ICA/HDX)
Multiple monitors	√	√	√
Windows XP/7 guests	√	√	√
RHEL desktop guests	√	Partial	Partial
Desktop pooling	√	√	√
Memory over-commit/ high density	√	√	**NO**

CALCULATE TCO & ROI YOURSELF...





www.redhat.com/rhev/desktop/cost

RESOURCES

- Try it for yourself!
  - Visit the SPICE Cafe in the main lobby

- Learn more about RHEV For Desktops...
  - **redhat.com/rhev/desktops**

- Learn more about RHEV...
  - **redhat.com/rhev**

UPCOMING RHEV SESSIONS (too many to list!)

- ~~**RHEV Overview:** Wed 2:00pm~~
- **Implementing RHEV at Qualcomm:** Thurs 10:20am
- **Red Hat Powered VDI:** Thurs 10:20am
- **RHEV Architecture:** Thurs 11:30am
- **RHEV 3.0 Deep Dive:** Thurs 2:00pm
- **Real World RHEV Panel:** Thurs 3:10pm
- **Enabling RHEV with NetApp Storage:** Fri 9:45am
- **Building Private IaaS Clouds:** Fri 9:45am
- **Red Hat Expert Forum:** Fri 9:45am

FOLLOW US ON TWITTER

www.twitter.com/redhatsummit

TWEET ABOUT IT

#summitjbw

READ THE BLOG

http://summitblog.redhat.com/