RED HAT CLOUD INFRASTRUCTURE

COMPETITIVE PRICING GUIDE

RED HAT CLOUD INFRASTRUCTURE AT A GLANCE

- Provides the technologies to build and manage an open virtual datacenter or a private cloud
- Includes Red Hat Enterprise Virtualization, Red Hat CloudForms. and Red Hat OpenStack
- Potential savings of 60-70% over a similarly configured VMware vCloud over a three-year period
- Can be purchased with or without Red Hat Enterprise Linux® bundled for use as the guest operating system
- Doesn't include costly editions that force you into expensive upgrades to get the features you need
- Available on a per managed-socket pair per year subscription
- Enables easy price prediction (count your server sockets and choose your SLA)

EXECUTIVE SUMMARY

This document compares the pricing of Red Hat's hybrid cloud solution, Red Hat® Cloud Infrastructure, against the most comparable solutions from VMware. The comparison involves looking at the two common purchasing use cases and determining the total acquisition costs from a 1-3 year period.

The two use cases include:

- Use case 1: Red Hat Cloud Infrastructure versus VMware vCloud Suite 5.1

  The first use case compares building a private or hybrid cloud deployment with Red Hat Cloud Infrastructure to one built with VMware vCloud Suite 5.1. Both solutions include all the elements necessary to run and manage a governed self-service cloud.

- Use case 2: Red Hat Cloud Infrastructure versus VMware vSphere Enterprise Edition and VMware vCloud Automation Center

  The second use case compares two solutions for building a traditional virtualized datacenter with robust management tools that provide self-service, automation, governance, chargeback and service catalogs, in addition to discovery, monitoring, and orchestration tools. For this use case, Red Hat Cloud Infrastructure is compared to VMware vSphere Enterprise Edition combined with VMware vCloud Automation Center, in an effort to match features and capabilities as closely as possible.

As the use cases demonstrate, Red Hat Cloud Infrastructure can provide potential savings of 60-70% over a similarly configured VMware vCloud solution over a three-year period. Similarly, when building a traditional datacenter with robust management tools, Red Hat Cloud Infrastructure can provide potential savings of 35-55% over a similarly configured VMware solution configured with vSphere Enterprise Edition and the vCloud Automation Center, also over a three-year period.

**A few items to note:*

- *List prices as of May 2013 were used.*
- *The total costs are calculated for a 50-node cluster as an example. However, the relative comparisons hold up no matter the size of the deployment.*
- *Red Hat and VMware sell their solutions with different pricing models. Red Hat uses an annual subscription model, while VMware uses a traditional one-time, right-to-use license fee plus Software and Support (SnS) model. Both will be explained in this document.*

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COMPARING RED HAT CLOUD INFRASTRUCTURE TO VMWARE VCLOUD SUITE 5.1.

Red Hat Cloud Infrastructure and VMware for vCloud Suite 5.1 use different pricing models. It is important to understand these differences to accurately compare the acquisition costs for each.

RED HAT CLOUD INFRASTRUCTURE PRICING

Red Hat Cloud Infrastructure provides the technologies to build and manage either an open virtual datacenter or a private or hybrid cloud. It includes technologies for virtualizing and managing traditional workloads and next-generation, cloud-enabled workloads.

All of Red Hat's products are sold as annual subscriptions. A subscription can be purchased with one annual fee and renewed each year at a predictable price. With a subscription, the customer gets the right to use the software, software maintenance, free version upgrades/downgrades, technical support, hardware and software certifications, and legal indemnification.

For Red Hat Cloud Infrastructure, each server being virtualized or hosting private cloud virtual machines (VMs) needs a subscription. The pricing for a subscription is based on the number of occupied sockets in the server and scales per pair of sockets.

Additionally, customers can choose between two levels of support: premium (24x7) and standard (business hour).

SUBSCRIPTION	PRICING
Red Hat Cloud Infrastructure (without unlimited Red Hat Enterprise Linux guests)	Pricing is based on the number of sockets per server. **2 sockets:** • $3,599 for Premium (24x7) support • $2,799 for Standard (business hour) support **4 sockets:** • $7,198 for Premium (24x7) support) • $5,598 for Standard (business hour) support **8 sockets:** • $14,396 for Premium (24x7) support) • $11,196 for Standard (business hour) support
Red Hat Cloud Infrastructure (with unlimited Red Hat Enterprise Linux guests)	**2 sockets:** • $5,999 for Premium (24x7) support) • $4,599 for Standard (business hour) support **4 sockets:** • $11,998 for Premium (24x7) support) • $9,198 for Standard (business hour) support **8 sockets:** • $23,996 for Premium (24x7) support) • $18,396 for Standard (business hour) support

STEP-BY-STEP PROCESS TO CALCULATE RED HAT CLOUD INFRASTRUCTURE PRICING

1. Count the number of 2 socket, 4 socket, and 8 socket servers that will host VMs (e.g., a 2-socket server is one (1) socket pair).
2. Determine if you need Red Hat Enterprise Linux guests.
3. Choose your support level: Standard (business hour) support or Premium (24x7) support.
4. Multiply the number of 2 socket, 4 socket, and 8 socket servers by the respective support prices chosen in step 3.
5. Purchase additional subscriptions of Red Hat CloudForms if managing VMs on a VMware vSphere hypervisor.

VMWARE VCLOUD SUITE 5.1 PRICING

VMware vCloud Suite 5.1 is VMware's solution for building and managing a cloud infrastructure environment. VMware vCloud Suite 5.1 bundles a number of VMware products (vSphere Enterprise Plus, vCloud Director and vCloud Connector, vCenter Operations Management Suite, vCenter Site Recovery Manager, vFabric Application Director, vCloud Automation Center, vCloud Networking and Security) into a single solution with a single license. There are three vCloud Suite editions, including Standard, Advanced, and Enterprise, that offer different features and capabilities at different price points. **Because Red Hat CloudForms can most closely be compared to VMware vCloud Automation Center, vCloud Suite Enterprise is the most appropriate choice for comparison with Red Hat Cloud Infrastructure.**

vCloud Suite 5.1 is licensed on a per-processor basis. This is a one-time fee that provides the customer with the right to use the software. Any VMs running on processors covered by the vCloud Suite 5.1 license are entitled to all the components in the solution. All VMs running on processors not licensed with vCloud Suite (e.g., just licensed with vSphere) will need a separate license to use any of the standalone components in vCloud Suite 5.1.

In addition to the upfront per-socket license fee, there is also an annual Support and Subscription (SnS) contract fee that is required with every vCloud Suite purchase. This entitles the customer to technical support, software patches, and version upgrades. The SnS contract fee for production support is generally 25% of the list price of the VMware product license. Lastly, vCenter Server—the management system for vSphere—is not included in vCloud Suite; and therefore, it must be purchased separately and is licensed on a per-server basis.

For a typical cloud infrastructure environment, the customer will need to purchase the following four items from VMware:

PRODUCT	PRICING
1. VMware vCloud Suite license (editions include: Standard, Advanced, Enterprise)	Standard = $4,995 per processor Advanced = $7,495 per processor Enterprise = $11,495 per processor
2. vCloud Suite SnS contract fee	25% of the license fee
3. vCenter Server license	Standard = $4,995 per server
4. vCenter Server SnS contract fee	25% of the license fee

STEP-BY-STEP PROCESS TO CALCULATE VCLOUD SUITE 5.1 PRICING AND LICENSING:

1. Choose the vCloud Suite edition (Standard, Advanced, Enterprise) based on your needs.

2. Count the number of processors in all of the host servers.

3. Purchase one vCloud Suite license for each processor.

4. Buy a minimum of one vCenter Server License.

5. Purchase a SnS contract for vCloud Suite and for vCenter Server.

For more information, access the VMware vCloud Suite 5.1 Licensing, Pricing and Packaging whitepaper at **www.vmware.com.**

COMPARING RED HAT CLOUD INFRASTRUCTURE TO VMWARE VCLOUD AUTOMATION CENTER PLUS VSPHERE

For many customers, now is not the right time to build a complete private cloud infrastructure. Instead, these customers might be interested in pursuing datacenter virtualization with a rich management toolset for discovery, monitoring, reporting, and orchestration. They may also be interested in some of the private cloud tools such as self-service, automation, governance, chargeback, and service catalogs. For use case 2, the Red Hat solution that meets these requirements is Red Hat Cloud Infrastructure. VMware meets these requirements with vCloud Automation Center combined with vSphere.

VMWARE VCLOUD AUTOMATION CENTER

For use case 2 (extending the capability of a virtualization platform with private cloud tools like self-service or enhanced monitoring capability), the most appropriate VMware products to compare to Red Hat Cloud Infrastructure are the VMware vSphere Enterprise Edition platform combined with VMware vCloud Automation Center.

VMware vCloud Automation Center is available as a standalone product licensed on a per-VM basis. The one-time fee is $400 per managed VM and is available for purchase in packs of 25. The annual fee for an SnS contract is also required.

A VMware vSphere deployment consists of vSphere nodes (hypervisor and vCenter management agent) that host VMs along with vCenter Server nodes for centralized management of the VMs running on vSphere nodes. Pricing is the same two-fee structure as with vCloud Suite—a one-time license fee and an annual fee for technical support and software maintenance (SnS). Both are sold based on the number of processors running in the vSphere nodes. Additionally, the vSphere product is packaged into different editions that differ by management functionality. In general, VMware vSphere 5.1 Enterprise Edition is the most comparable product for comparison against the functionality included with Red Hat Cloud Infrastructure.

For a combined VMware vSphere and vCloud Automation Center deployment, the customer will need to make the following six purchases:

PRODUCT	PRICING
1. vCloud Automation Center for Server license	$10,000 for a 25 VM pack
2. vCloud Automation Center SnS contract fee	25% of license fee
3. VMware vSphere license (editions include: Standard, Enterprise, Enterprise Plus)	Standard = $995 per processor Enterprise = $2,875 per processor Enterprise Plus = $3,495 per processor
4. vSphere SnS contract fee	25% of license fee
5. vCenter Server license	Standard = $4,995 per server
6. vCenter Server SnS contract fee	25% of license fee

STEP-BY-STEP PROCESS TO CALCULATE VSPHERE PLUS VCLOUD AUTOMATION CENTER PRICING AND LICENSING:

1. Determine the number of VMs to be managed. Divide that number by 25 and round up to the nearest whole number.
   - This is how many vCloud Automation Center (25-packs) licenses that are needed.
2. Choose VMware vSphere Edition (Standard, Advanced, Enterprise) based on your needs.
3. Count the number of processors in all of the host servers.
4. Purchase 1 vSphere license for each physical processor.
5. Buy a minimum of 1 vCenter Server License.
6. Purchase SnS contracts (three total) for vSphere, vCenter Server, and vCloud Automation Center.

PRICING SCENARIOS

The below pricing scenarios compare the following two use cases:

- A private or hybrid cloud built with Red Hat Cloud Infrastructure versus one built with VMware vCloud Suite.
- A traditional datacenter virtualization deployment with robust management tools for discovery, monitoring, and reporting along with capabilities like self-service, automation, governance, chargeback, and service catalogs.

For each of these pricing scenarios, the acquisition costs over a one–through three–year timeframe are examined.

There are two comparisons for each use case. The first comparison assumes that there is no need for unlimited Red Hat Enterprise Linux guests. The second comparison assumes that there is a need for unlimited Red Hat Enterprise Linux guests. The costs for the hardware infrastructure have not been included since they are assumed to be the same for both a VMware and a Red Hat deployment.

USE CASE 1 – RED HAT CLOUD INFRASTRUCTURE VERSUS VCLOUD SUITE ENTERPRISE

This use case compares the price to build a private or hybrid cloud with Red Hat Cloud Infrastructure to the price to build one with VMware vCloud Suite Enterprise.

USE CASE 1A – UNLIMITED RED HAT ENTERPRISE LINUX GUESTS

The following tables show how to calculate the 1-3 year costs for a 50-node cloud cluster (50 two-socket servers hosting all the VMs running in the private cloud) with 24x7 support. It is assumed that the VMs are using Red Hat Enterprise Linux.

TOTAL COST OF OWNERSHIP	RED HAT CLOUD INFRASTRUCTURE	VMWARE VCLOUD SUITE ENTERPRISE EDITION
Number of servers (2 sockets)	50	50
Number of processors	100	100
A) License costs (one-time)		
√ Cloud software	$0	100 x $11,495 + 1 x $4,995 = $1,154,495
B) Annual support/subscription costs		
√ Cloud software	50 x $5,999 = $299,950	100 x 0.25 x $11,495 + 1 x 0.25 x $4,995 = $288,624
√ Red Hat Enterprise Linux guest operating system (unlimited)	included	50 x $3,249 = $162,450
Total first-year costs	**$299,950**	**$1,605,569**

For the first year, vCloud Suite Enterprise is more than 5x more expensive than Red Hat Cloud Infrastructure.

STEPS TO ARRIVE AT PRICE

1. Calculate the acquisition costs for each product.

FIGURE 1: FIRST-YEAR ACQUISITION COSTS

PRODUCT	QTY	PRICE	TOTAL COST
Red Hat Cloud Infrastructure (with RHEL Guest)	**50**	**$5,999**	**$299,950**
versus			
vCloud Suite Enterprise Edition			
License	100	$11,495	$1,149,500
Software and Support (SnS)	100	(.25 x $11,495)	$287,375
vCenter Server			
License	1	$4,995	$4,995
Software and Support (SnS)	1	(.25 x $4,995)	$ 1,249
Red Hat Enterprise Linux (unlimited guests), Premium	50	$3,249	$162,450
VMware Total			**$1,605,569**

2. Use Figure 1 to determine the year-by-year acquisition cost for each product.

3. Calculate the year-by-year total for each solution.

FIGURE 2: YEAR-BY-YEAR ACQUISITION COSTS

SOLUTION	YEAR 1	YEAR 2	YEAR 3
Red Hat	$299,950	$299,950	$299,950
versus			
VMware	$1,605,569	$451,074	$451,074

FIGURE 3: TOTAL CUMULATIVE COSTS

SOLUTION	YEAR 1	YEAR 2	YEAR 3
Red Hat	$299,950	$599,900	$899,850
versus			
VMware	$1,605,569	$2,056,643	$2,958,790

USE CASE #1B – RED HAT ENTERPRISE LINUX AS THE HOST OPERATING SYSTEM FOR OPENSTACK COMPONENTS ONLY

The following tables show how to calculate the 1-3 year costs for a 50-node cloud cluster (50 2-socket servers hosting all the VMs running in the private cloud) with 24x7 support. In this scenario, the unlimited Red Hat Enterprise Linux guest operating system subscription is NOT included for each of the 50 hypervisor node servers.

TOTAL COST OF OWNERSHIP	RED HAT CLOUD INFRASTRUCTURE	VMWARE VCLOUD SUITE ENTERPRISE EDITION
Number of servers (2 sockets)	50	50
Number of processors	100	100
A) License costs (one-time)		
√ Cloud software	$0	100 x $11,495 + 1 x $4,995 = $1,154,495
B) Annual support/subscription costs		
√ Cloud software	50 x $3,599 = $179,950	100 x 0.25 x $11,495 + 1 x 0.25 x $4,995 = $288,624
Total first-year costs	**$179,950**	**$1,443,119**

For the first year, vCloud Suite Enterprise is more than 8x more expensive than Red Hat Cloud Infrastructure.

STEPS TO ARRIVE AT PRICE

1. Calculate the acquisition costs for each product.

FIGURE 4: FIRST-YEAR ACQUISITION COSTS

PRODUCT	QTY	PRICE	TOTAL COST
Red Hat Cloud Infrastructure (with RHEL Guest)	**50**	**3599**	**$179,950**
versus			
vCloud Suite Enterprise Edition			
License	100	$11,495	$1,149,500
Software and Support (SnS)	100	(.25 x $11,495)	$287,375
vCenter Server			
License	1	$4,995	$4,995
Software and Support (SnS)	1	(.25 x $4,995)	$ 1,249
VMware Total			**$1,443,119**

2. Use Figure 4 to determine the year-by-year acquisition cost for each product.

3. Calculate the year-by-year total for each solution.

FIGURE 5: YEAR-BY-YEAR ACQUISITION COSTS

SOLUTION	YEAR 1	YEAR 2	YEAR 3
Red Hat	$179,950	$179,950	$179,950
versus			
VMware	$1,443,119	$288,624	$288,624

FIGURE 6: TOTAL CUMULATIVE COSTS

SOLUTION	YEAR 1	YEAR 2	YEAR 3
Red Hat	$179,950	$359,900	$539,850
versus			
VMware	$1,443,119	$1,731,743	$2,020,366

USE CASE 2 – VIRTUALIZATION WITH CLOUD TOOLS

Use case 2 is a traditional virtualization deployment with cloud management tools for better monitoring and capability like self-service, automation, governance, and service catalogs. In this use case, Red Hat Cloud Infrastructure (Red Hat Enterprise Virtualization combined with CloudForms) is compared with the combination of vSphere Enterprise edition with vCloud Automation Center.

USE CASE #2A – UNLIMITED RED HAT ENTERPRISE LINUX GUESTS

The following tables show how to calculate the 1-3 year costs for a 50-node virtual datacenter (50 2-socket servers hosting all the VMs running in the virtual datacenter) with 24x7 support.

It is assumed that the VMs are using Red Hat Enterprise Linux as the guest operating system and therefore subscriptions are needed as well. In order to calculate the vCloud Automation Center pricing, each hypervisor host is assumed to support 12 virtual servers.

TOTAL COST OF OWNERSHIP	RED HAT CLOUD INFRASTRUCTURE	VMWARE VCLOUD SUITE ENTERPRISE EDITION
Number of servers (2 sockets)	50	50
Number of processors	100	100
Number of virtual servers - 12/host avg	600	600
A) License costs (one-time)		
√ Virtualization + Cloud Tools	$0	100 x $ 2,875 + 1 x $ 4,995 +24 x $10,000 = $ 532,495
B) Annual support/subscription costs		
√ Virtualization + Cloud Tools	50 x $5,999 = $299,950	100 x 0.25 x $2,875 + 1 x 0.25 x $4,995 + 24 x 0.25 x $10,000 = $ 133,124
√ Red Hat Enterprise Linux guest OS (unlimited)	included	50 x $3,249 = $162,450
Total first-year costs	**$299,950**	**$828,069**

For the first year, the VMware solution is more than 2.75x more expensive than Red Hat Cloud Infrastructure.

STEPS TO ARRIVE AT PRICE

1. Calculate the acquisition costs for each product.

FIGURE 7: FIRST-YEAR ACQUISITION COSTS

PRODUCT	QTY	PRICE	TOTAL COST
Red Hat Cloud Infrastructure (with RHEL Guest)	**50**	**$5,999**	**$299,950**
versus			
vSphere Enterprise Edition			
License	100	$2,875	$287,500
Software and Support (SnS)	100	(.25x $2,875)	$71,875
vCloud Automation Center			
License	24	$10,000	$240,000
Software and Support (SnS)	24	(.25 x $10,000)	$ 60,000
vCloud Server			
License	1	$4,995	$4,995
Software and Support (SnS)	1	(.25 x 4,995)	$1,249
Red Hat Enterprise Linux (unlimited guests), Premium	50	$3,249	$162,450
VMware Total			**$828,069**

2. Use Figure 7 to determine the year-by-year acquisition cost for each product.

3. Calculate the year-by-year total for each solution.

FIGURE 8: YEAR-BY-YEAR ACQUISITION COSTS

SOLUTION	YEAR 1	YEAR 2	YEAR 3
Red Hat	$299,950	$299,950	$299,950
versus			
VMware	$828,069	$295,574	$295,574

FIGURE 9: TOTAL CUMULATIVE COSTS

SOLUTION	YEAR 1	YEAR 2	YEAR 3
Red Hat	$299,950	$599,900	$899,850
versus			
VMware	$828,069	$1,123,643	$1,419,216

USE CASE #2B – RED HAT ENTERPRISE LINUX GUEST OPERATING SYSTEM FOR OPENSTACK PLATFORM COMPONENTS ONLY

The following tables show how to determine the 1-3 year costs for a 50-node virtual datacenter (50 2-socket servers hosting all the VMs running in the virtual datacenter) with 24x7 support. In this scenario, the unlimited Red Hat Enterprise Linux guest operating system subscription is NOT included for each of the 50 hypervisor node servers. In order to calculate the vCloud Automation Center pricing, each hypervisor host is assumed to support 12 virtual servers.

TOTAL COST OF OWNERSHIP	RED HAT CLOUD INFRASTRUCTURE	VMWARE VCLOUD SUITE ENTERPRISE EDITION
Number of servers (2 sockets)	50	50
Number of processors	100	100
Number of virtual servers–12/host avg	600	600
A) License costs (one-time)		
✓ Virtualization + Cloud Tools	$0	100 x $ 2,875 + 1 x $ 4,995 +24 x $10,000 = $ 532,495
B) Annual support/subscription costs		
✓ Virtualization + Cloud Tools	50 x $3,599 = $179,950	100 x 0.25 x $2,875 + 1 x 0.25 x $4,995 + 24 x 0.25 x $10,000 = $ 133,124
Total first-year costs	**$179,950**	**$665,619**

For the first year, the VMware solution is more than 3.5x more expensive than Red Hat Cloud Infrastructure.

STEPS TO ARRIVE AT PRICE

1. Calculate the acquisition costs for each product.

FIGURE 10: FIRST-YEAR ACQUISITION COSTS

PRODUCT	QTY	PRICE	TOTAL COST
Red Hat Cloud Infrastructure (with RHEL Guest)	**50**	**$5,999**	**$299,950**
versus			
vSphere Enterprise Edition			
License	100	$2,875	$287,500
Software and Support (SnS)	100	(.25x $2,875)	$71,875
vCloud Automation Center			
License	24	$10,000	$240,000
Software and Support (SnS)	24	(.25 x $10,000)	$60,000
vCenter Server			
License	1	$4,995	$4,995
Software and Support (SnS)	1	(.25 x $4,995)	$ 1,249
Red Hat Enterprise Linux (unlimited guests), Premium	0	$3,249	$0
VMware Total			**$665,619**

2. Use Figure 10 to determine the year-by-year acquisition cost for each product.

3. Calculate the year-by-year total for each solution.

FIGURE 11: YEAR-BY-YEAR ACQUISITION COSTS

SOLUTION	YEAR 1	YEAR 2	YEAR 3
Red Hat	$179,950	$179,950	$179,950
versus			
VMware	$655,619	$133,124	$133,124

FIGURE 12: TOTAL CUMULATIVE COSTS

SOLUTION	YEAR 1	YEAR 2	YEAR 3
Red Hat	$179,950	$359,900	$539,850
versus			
VMware	$665,619	$798,743	$931,866

CONCLUSION

The subscription pricing for Red Hat Cloud Infrastructure has been designed to simplify the specification and purchasing of your cloud and virtualization solution. The Red Hat subscription model offers benefits to both new and existing Red Hat customers, and the straightforward, per-socket pair subscription and single, enterprise-ready edition of Red Hat Cloud Infrastructure makes specification and cost forecasting easy. Compared to a similarly configured VMware solution, the pricing of Red Hat Cloud Infrastructure is more straightforward and cost effective.

WHAT'S NEXT

For more information on Red Hat Cloud Infrastructure pricing and configuration, contact your local Red Hat sales office or Red Hat authorized partner.

REFERENCE

Red Hat product offerings, pricing, terms, and conditions are accurate as of July 1, 2013 and are subject to change.

Pricing for non-Red Hat products are based on published retail or volume license pricing in the United States as of May 2013 and is subject to change.

VMware vCloud Suite pricing, 2013,
http://www.vmware.com/products/datacenter-virtualization/vcloud-suite/pricing.html (May 2013)

VMware vSphere pricing, 2013,
http://www.vmware.com/products/datacenter-virtualization/vsphere/pricing.html (May 2013)

VMware vCloud Automation Center pricing, 2013,
http://www.vmware.com/products/datacenter-virtualization/vcloud-automation-center/buy.html (May 2013)

ABOUT RED HAT

Red Hat is the world's leading provider of open source solutions, using a community-powered approach to provide reliable and high-performing cloud, virtualization, storage, Linux, and middleware technologies. Red Hat also offers award-winning support, training, and consulting services. Red Hat is an S&P company with more than 70 offices spanning the globe, empowering its customers' businesses.

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