

# Competing with VMware for Linux workloads

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26 June 2014



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## Agenda

- What is VMware?
- Why are they so successful?
- How does VMware position their solutions?
- What is the buying criteria?
- How can z/VM more effectively compete?

## Common VMware misconceptions

1. VMware invented virtualization
2. VMware invented cloud computing
3. VMware is a cloud computing strategy



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1. VMware is part technology and part sales and marketing genius. As a result of their marketing efforts many people in IT (especially the newer generations) believe that VMware invented virtualization.
2. VMware does not recognize z/VM as a real competitor. They do not reference z/VM in literature or in their sales training, etc.
3. Obviously, z/VM is the original and most powerful hypervisor in the world.
4. “Cloud” in its modern incarnation, is a formalization of compute models that have existed well before VMware. Again, marketing genius...
5. The Mainframe has championed many aspects of cloud (or utility) computing for most of its history, poor marketing by mainframe community to date...
6. Similar to “no one gets fired by buying Oracle”, there are IT leaders who basically equate buying the VMware stack with having a cloud strategy. A product is not a strategy.
7. A cloud computing strategy spans platforms, both inside and outside of a companies data center. System z must become a core participant in an enterprise’s cloud strategy.

# What is VMware?



Image: VMware

vCloud Suite provides all components for building and running a private cloud infrastructure, based on VMware vSphere, that leverages the software-defined data center architecture.

This architectural approach delivers virtualized infrastructure services (compute, network, security and availability) with built-in intelligence to automate the on-demand provisioning, placement, configuration and control of applications based on defined policies.

vCloud Suite 5.5 is composed of the following integrated products:

- **VMware vSphere:** Compute virtualization platform with policy-based automation
- **VMware® vCenter™ Operations Management Suite™:** Integrated, proactive performance, capacity, and configuration management for dynamic cloud environments.
- **VMware vCloud Director®:** Virtualized data centers with multi-tenancy and public cloud extensibility “
- **VMware® vCenter™ Site Recovery Manager™:** Automated disaster recovery planning, testing, and execution
- **VMware vCloud® Networking and Security™:** Networking and security with ecosystem integration for a virtualized compute environment
- **VMware vCloud® Automation Center™:** Self-service and policy-enabled cloud service provisioning

Source: <https://www.vmware.com/files/pdf/products/vCloud/VMware-vCloud-Suite-Datasheet.pdf>

## So what does VMware do?

Simply put...

- vSphere – combines the ESX x86 hypervisor with a variety of management utilities and interfaces for admins
  
- vCenter – wraps vSphere with a layer of APIs and operationally focused UI (dashboards, reports, configuration, monitoring)
  - Allows for policy-based automation
  - Useful for DC operators and managers to manage server environment
  
- vCloud – wraps vCenter in a layer of APIs, and presents all virtualized infrastructure and services in catalog form.
  - Main construct is Virtual Data Center (vDC) – vDCs are templated IT services that can be cloned, moved, ordered, etc.
  - vCloud bridges on-premise and MSP data centers, allows for workload portability between the two.

## What is the VMware ESX?

- Linux based hypervisor
  - Intel arch based
- Multiple management options
- Part of larger package

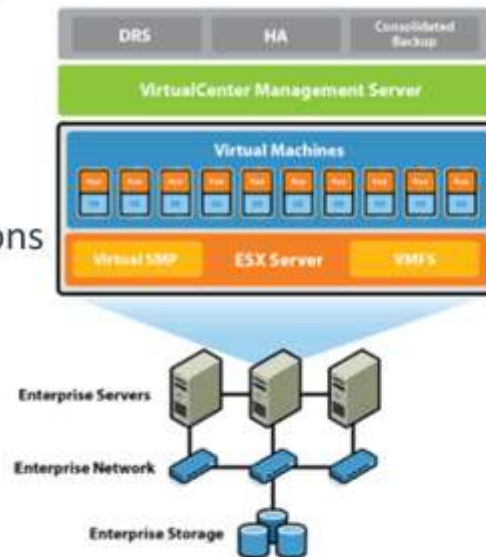


Image: VMware

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- ESX (“Elastic Sky X”) is a Linux based hypervisor (variant of Red Hat Linux), that emulates the Intel architecture for guest machines created on top of ESX host.
  - Intel architecture was not originally designed for virtualization, which results in higher CPU overhead than z/VM.
  - ESX hypervisor can be managed by CLI, web UI and remote console with a familiar interaction model / language to Linux folks.
  - ESXi is a compact version of ESX, available as free download
  - Both ESX and ESXi can host Linux and Windows guests
- ESX is not typically purchased on it’s own, but as part of a vCenter license, that includes vSphere (the management layer wrapped around ESX)

Source: [http://en.wikipedia.org/wiki/VMware\\_ESX](http://en.wikipedia.org/wiki/VMware_ESX)

## VMware History

1. The only enterprise grade x86 virtualization technology in the early days.
2. Seized the market opportunity for server consolidation.
3. EMC backing accelerated their market share and made entry difficult for competitors.
4. Invested in a portfolio of integrated management and automation tools. (vCenter, vCloud)
5. Lowered barrier to entry for junior IT staff to manage virtualized servers.
6. Invested in packaging of popular business applications (virtual appliances) and creating a very large ecosystem of ISVs and integrators to compliment their core offerings. [VMware Solution Exchange](#)
7. Actively targets MSPs with VCloud hybrid cloud offerings – Customers who have vCloud on-premise can move workloads to cloud providers running vCloud. [vCloud Service Provider Program \(VSPP\)](#)
8. VMware continues to diversify its Software-Defined Data Center portfolio, which is resonating in the market.

Source: Network World



Source: <http://www.networkworld.com/article/2222838/virtualization/vmware-success-relies-on-diversification.html>

Source: <http://en.wikipedia.org/wiki/VMware>



## Challenges to VMware

### Growing Competition for VMware in Virtualization Market

Over the years, VMware ( VMW ) has established itself as a dominant player in the growing virtualization market. However, the company's flagship product, the vSphere Hypervisor, which provides a virtual operating platform to guest operating systems, faces increasing competition from players such as Microsoft ( MSFT ), Citrix and Oracle ( ORCL ). Currently, VMware accounts for about 56% of the virtualization market, but its market share has been declining steadily in recent years.

Source: NASDAQ



Source: <http://www.nasdaq.com/article/growing-competition-for-vmware-in-virtualization-market-cm316783>

## Challenges to VMware (cont)

### A battle on the home front

VMware's platform for server virtualization has always been central to its business since it allows for selling additional products. VMware has a dominant position in this market, but two competitors might start taking significant market share.

The first is **Microsoft** (NASDAQ: MSFT), which has gradually been improving its virtualization offerings. In particular, Windows Server 2012 includes an updated version of Microsoft's virtualization product, **Hyper-V**. Microsoft will cease mainstream support for Windows Server 2008 in 2015, which means many companies might consider a move to Windows Server 2012 at the same time that they look to virtualize their IT infrastructure. This might give Microsoft's virtualization products a viable chance.

On the other end, open-source provider **Red Hat** (NYSE: RHT) has been investing in its Linux virtualization initiative, the Kernel-Based Virtual Machine, or **KVM**. The important development here is that IBM has recently put its weight behind KVM, with one IBM engineer stating, "We want KVM to be a big enough presence in the market to keep prices low and affect the way other vendors do business." Whether or not this was a direct jab at VMware, it's clearly not good news.

Source: Motley Fool



Source: <http://www.fool.com/investing/general/2014/04/07/who-can-stop-vmware.aspx>

## Challenges to VMware (cont)

WHICH OF THE FOLLOWING PRIVATE CLOUD INFRASTRUCTURES ARE USED AT YOUR COMPANY?

Responses indicate that OpenStack is gaining on VMware, although VMware is still in the lead.



Image: Tesora

Tesora commissioned a survey of North American developer communities to better understand the database choices they are making, and their preferences and expectations going forward. The survey had more 500 respondents, with 40% from organizations with more than 1,000 employees.

Source: <http://www.tesora.com/resources/infographic>

# vCenter – examples of systems admin user experience

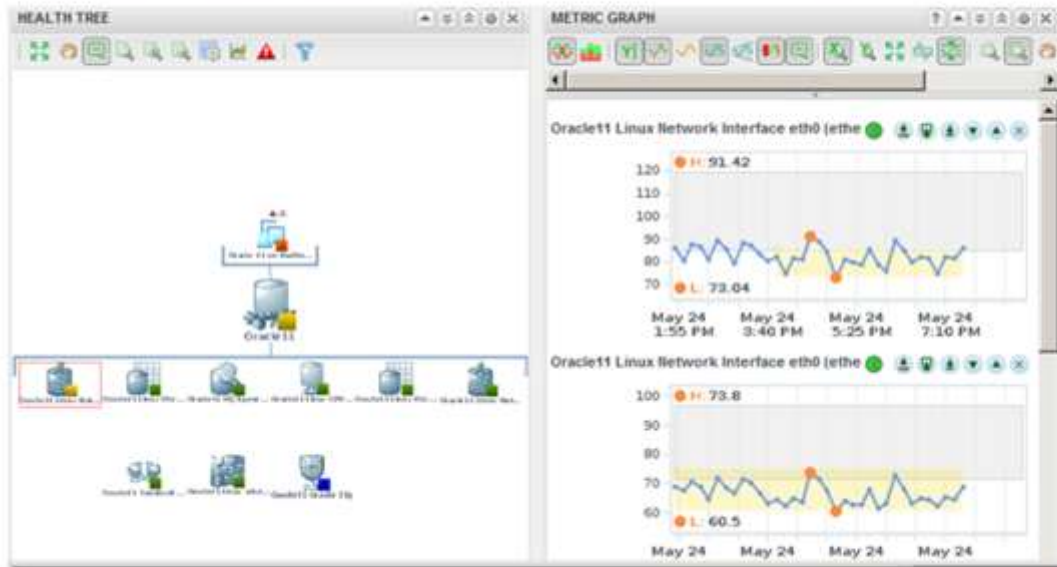


Image: Virtualization Impact

- Effective use of dashboards to help operations visualize anomalies. They have a robust policy engine, so sysprogs can configure the alerting that drives the displays

Source: <http://www.virtualizationimpact.com/?cat=75>

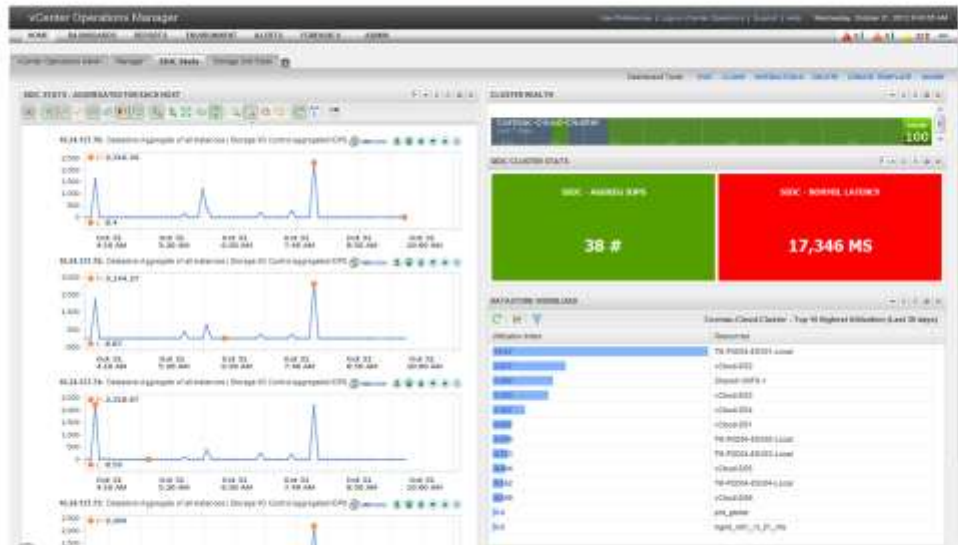
## vCenter – examples of systems admin user experience



- A specific screen monitoring health and network performance of an Oracle Linux guest.

Source: <http://blogs.vmware.com/management/2013/06/now-available-vcenter-operations-management-5-7-1-with-hyperic-5-7-2.html>

# vCenter – examples of systems admin user experience



14

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Image: Blog of Cormac Hogan

Source: <http://cormachogan.com/2012/11/06/vcenter-operations-manager-caught-out-by-new-sew-solution-licensing-step/>

## Hypervisor Selection Criteria

### Criteria 1:

- Performance
- Hardware Compatibility
- Ease of use/management
- Reliability
- Scalability
- Costs



### Criteria 2:

- Configuration granularity
- Performance
- Scalability
- Integration with Mgmt Tools

Are these technical or business?

Source: KEMP Technologies

Source: Burton Group

## Business Buying Criteria

- Costs
  - Energy Savings
  - Operational Cost
  
- Politics
  - Relationships
  - Market Leadership
  - Knowledge (or lack thereof)



# Competing with VMware for Linux Workloads

CA	IBM	VMware	
AppLogic for System z	SmartCloud Orchestrator	vCloud Director	<b>Cloud Layer</b> Self-service consumption for end users Automated Service Delivery Virtualized IT Services
Guest Manager	Wave	vCenter	<b>Operational Layer</b> Modern UI for Operators/Admins Simplify repeatable operations Operational Automation
VM Manager Suite	z/VM System Mgmt tools	vSphere	<b>Administration Layer</b> Granular controls, CLI/3270 Specialized skills Programmable
z/VM	z/VM	ESX	<b>Hypervisor</b>

## How do we effectively compete?

- Identify z executive sponsor?
- Drive Linux on z with the same tools as on x?
- Prepare business case?
  - Performance?
  - Identify suitable workloads?
  - Applicable cost savings?
  
- What worked for you? What didn't?

## Further Discussion / Questions



Image: freeimages

## Resources For Your Edification

- [The Mainframe and Virtualization](#)
- [A Comparison of Management of Virtual Machines with z/VM and ESX Server](#)
- [Be Our Guest](#)
- [Wikipedia - VMware](#)
- [Wikipedia - VMware ESX](#)
- [Wikipedia - Comparison of Virtualization Platforms](#)
- [Motley Fool - VMware Competition](#)
- <https://dancingdinosaur.wordpress.com/tag/zvm/>
- [VMware's Success Relies on Diversification](#)
- [Virtualization 101 - Everything you need to know to get started with VMware](#)
- [LinkedIn Conversation - zLinux vs x86 Costs](#)
- [VMware vCloud Suite Datasheet](#)



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