MEDIA BACKGROUNDER

VMware vSphere®5: The Best Platform for Cloud Infrastructures

Overview
Announced July 12, 2011 at the VMware Cloud Infrastructure Launch event in San Francisco, VMware vSphere® 5 will continue to set the standard in virtualization with nearly 200 new and enhanced capabilities.

The foundation of VMware's cloud infrastructure suite is VMware vSphere, the most trusted, widely deployed virtualization platform in the world. Architected to support the broadest range of virtual and cloud infrastructure needs, VMware vSphere is broadly utilized by enterprises, small and mid size businesses (SMBs), public cloud service providers and as a foundation for the growing virtual desktop infrastructure (VDI) market. An increasing number of customers are standardizing on VMware vSphere as their strategic IT platform. As such, VMware vSphere has attracted a broad ecosystem of industry leaders that support and extend this foundation.
Read more about ecosystem support for VMware vSphere 5.

VMware vSphere 5 Features and Benefits
Enhancements and new features in VMware vSphere 5 will deliver better application performance and availability for all business-critical applications and introduce advanced automation capabilities to free IT from manual processes and be more responsive to the needs of the business, including:

- **4X larger VMs scale to support any application.** With VMware vSphere 5, VMware will make it easier for customers to achieve 100 percent virtualization. VMware vSphere 5 will be capable of running virtual machines (VMs) that are four times more powerful than VMware vSphere 4, supporting up to 1 terabyte of memory and up to 32 virtual CPUs. These VMs will be able to process in excess of 1 million I/O operations per second, which will far surpass current requirements of even the most resource-intensive applications. For example, VMware vSphere 5 will be able to support a database that processes more than two billion transactions per day.

- **Updates to vSphere High Availability (HA) offer the best protection against unplanned downtime.** VMware vSphere 5 will feature a new HA architecture that is not only easier to set up (customers can get their applications set up with HA in minutes), but is more scalable and offers superior availability guarantees.

- **Intelligent Policy Management: three new automation advancements will deliver cloud agility.** VMware vSphere 5 will introduce three new features that automate datacenter resource management to help IT respond to the business faster while reducing operating expenses. These features will deliver intelligent policy management: a "set it and forget it" approach to datacenter resource management. Customers will define the policy and establish the operating parameters, and VMware vSphere 5 will do the rest. VMware vSphere 5 intelligent policy management features will include**:**
    - ***Auto-Deploy*** will enable IT to automatically deploy servers "on the fly" and will be able to reduce the time it takes to deploy a datacenter with 40 servers from 20 hours to 10 minutes. Once the servers are up and running, Auto-Deploy will also automate the patching process, making it possible to instantly apply patches to many servers at once.
    - ***Profile-Driven Storage*** will reduce the number of steps required to select storage resources by grouping storage according to user-defined policies (i.e. gold, silver, bronze). During the provisioning process, customers will simply click to specify which level of service the VM requires, and VMware vSphere will automatically use the storage resources that best align with that level of service.
    - ***Storage DRS*** will extend the automated load balancing capabilities VMware first introduced in 2006 with Distributed Resource Scheduler™ to include storage characteristics. Once a customer has set the storage policy of a VM, Storage DRS will

automatically manage the placement and balancing of the VM across storage resources. By automating the ongoing resource allocations, Storage DRS will eliminate the need for IT to monitor or intervene, while ensuring the VM maintains the service level defined by its policy.

- **The most advanced hypervisor architecture in the smallest footprint.** VMware vSphere 5 is the first version of VMware vSphere built exclusively on ESXi™, the only hypervisor purpose-built for virtualization that runs independently from a general-purpose operating system. With an ultra-thin architecture, ESXi delivers industry leading performance, reliability and scalability all within a footprint less than 100MB, which means streamlined deployment and configuration as well as simplified patching and updating and better security.

Comments on the News

- "Virtualization has become the preferred IT environment for the enterprise, and as we move along the journey to cloud computing, customers are increasingly standardizing on VMware vSphere®," said **Bogomil Balkansky, vice president product marketing, VMware**. "The enhancements we've made to VMware vSphere 5 provide for a robust, reliable platform for any business application. As our customers achieve higher levels of virtualization, VMware will help them amplify the value of their investments by continuing to innovate, delivering the cloud computing capabilities – automation, intelligent policy management – that will accelerate their path to IT transformation."

- "Korean Air introduced VMware's vSphere 4 to improve customer satisfaction and efficiency of IT resources. Our team has earned tangible achievements in cost saving and management," said **Young Won, Korean Air General Manager of IT Quality Team.** "After testing VMware vSphere 5, we saw that the model is very suitable and qualified for critical business applications. It met our expectations with its high availability, flexibility and performance."

- "We own and operate a 3,000+ core datacenter prototype, managed exclusively by the VMware cloud management software stack. VMware virtualization and cloud infrastructure provides us with an environment that is cost-effective, flexible, reliable and efficient," said **Ada Gavrilovska, Research Scientist, Center for Experimental Research in Computer Systems (CERCS) at Georgia Tech.** "In our virtualized datacenter, VMware vSphere allows us to customize our monitoring and management processes and conduct research on a range of topics related to virtualized cloud management. Starting this fall, this datacenter will be used more broadly by the Georgia Tech community, for research and instruction."

Read what partners are saying about VMware vSphere 5.

New Licensing Model Extends Benefits of Pooling Beyond Technology

With the introduction of VMware vSphere 5, VMware is evolving the product's licensing to lay the foundation for customers to adopt a more "cloud-like" IT cost model based on consumption and value rather than physical components and capacity. VMware vSphere 5 will continue to be licensed per processor (CPU), however, VMware is eliminating the current, restrictive physical entitlements of CPU cores and physical RAM per server and replacing them with a single, virtualization-based entitlement of pooled virtual memory, or vRAM.

Pooled vRAM is the total amount of memory configured to all VMs in a customer's environment. Each VMware vSphere 5 CPU license will entitle the purchaser to a specific amount of vRAM, which can be pooled across the entire vSphere environment to enable a true cloud or utility based IT consumption model. There are no restrictions on how vRAM capacity can be distributed among VMs: a customer can configure many small VMs or one large VM. VMware vSphere has made it possible for customers to maximize hardware utilization and efficiency by pooling CPU, memory, storage and networking. With these licensing changes, VMware is extending the concept of pooling – one of the foundational elements

of cloud computing – beyond technology to the business, allowing the pooling of licenses for maximum utilization and value.

Because VMware vSphere 5 is still licensed on a per-CPU basis, customers can continue leveraging established purchasing, deployment and license-management processes. For more information on VMware vSphere 5 licensing, visit: http://www.vmware.com/files/pdf/vsphere_pricing.pdf

Pricing and Availability
VMware vSphere 5 is expected to be available in Q3 2011. VMware vSphere 5 will be available in packages and prices that address the widest range of customer requirements, from SMB solutions starting at $83 per processor to full enterprise editions for the most demanding environments at $3,495 per processor.

Additional Resources
- Learn more about VMware vSphere 5
- Visit the VMware vSphere blog
- Get product graphics, datasheets and videos
- Learn more about the VMware cloud infrastructure suite launch
- Read "*VMware Unveils VMware vSphere 5 and Cloud Infrastructure Suite*" blog post by VMware CTO, Steve Herrod
- Read "*VMware Building the Foundation for the Cloud Era*" blog post by VMware vice president of product marketing, Bogomil Balkansky
- Twitter: @VMwareEvents (hashtag #vmwarecloud)

Forward-Looking Statements
This document contains forward-looking statements including, among other things, statements regarding the expected availability of VMware vSphere 5, updates to VMware's suite of cloud infrastructure products and VMware vSphere Storage Appliance, the features planned for such products and their expected benefits for users, the planned introduction of new licensing models for VMware products and expectation for the transformation of IT. These forward-looking statements are subject to the safe harbor provisions created by the Private Securities Litigation Reform Act of 1995. Actual results could differ materially from those projected in the forward-looking statements as a result of certain risk factors, including but not limited to: (i) adverse changes in general economic or market conditions; (ii) delays or reductions in information technology spending and government subsidies; (iii) competitive factors, including but not limited to pricing pressures, industry consolidation, entry of new competitors into the virtualization market, and new product and marketing initiatives by our competitors; (iv) our customers' ability to develop, and to transition to, new products and computing strategies, (v) the uncertainty of customer acceptance of emerging technology; (vi) rapid technological and market changes in virtualization software and platforms for cloud and desktop computing; (vii) changes to product development timelines; (viii) our ability to protect our proprietary technology; (ix) our ability to attract and retain highly qualified employees; and (x) the successful integration of acquired companies and assets into VMware. These forward looking statements are based on current expectations and are subject to uncertainties and changes in condition, significance, value and effect as well as other risks detailed in documents filed with the Securities and Exchange Commission, including our most recent reports on Form 10-K and Form 10-Q and current reports on Form 8-K that we may file from time to time, which could cause actual results to vary from expectations. VMware assumes no obligation to, and does not currently intend to, update any such forward-looking statements after the date of this release.

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