



VMware Cloud Infrastructure and Management

Intelligent Virtual Infrastructure.
Delivered Your Way.



Transform Your Business. Evolve Your IT Model.



CLOUD ADOPTION

A cloud adoption study by IDG Research found that “a significant number of CIOs agreed that the cloud is far more than a mechanism to support one-off projects or commodity business applications. Rather, it is a platform for IT transformation. Some visionaries even identified its potential to transform the business itself.”²

In today’s highly competitive markets, enterprises need IT to be more agile. Yet current business demands are quickly exceeding IT capabilities. End users want immediate access to information on a wider variety of mobile and connected devices. However, current computing silos and application portfolios running on fragmented infrastructure make it difficult for IT teams to manage systems, add new applications and handle increasing volumes of data. Decreased IT resources and legacy management tools further hinder IT efforts to maintain service levels and reduce operational costs. Businesses are looking for a better approach.

Cloud computing represents a profound shift in the IT model. It allows IT organizations to move to a more flexible, on-demand approach—IT as a Service. Cloud computing transforms how IT builds applications, how IT runs and delivers those applications, and how end users consume applications across devices. While the cost benefits are well understood, progressive CIOs now see the cloud as a platform for IT and business transformation. A recent AbsolutData global business agility survey revealed a direct link between cloud computing and business agility in the minds of both business and IT leaders.¹

IT as a Service, delivered through a cloud model, demands a foundation of dynamic, scalable, intelligent virtual infrastructure. As the global leader in virtualization and cloud infrastructure, VMware® delivers it.

Increase Agility. Reduce Costs.

With VMware, businesses overcome the constraints imposed by their current IT environments. They transform their datacenters into intelligent virtual infrastructure through a pragmatic path that minimizes risk and disruption. By providing organizations with the flexibility to rapidly adapt to changing business needs, VMware revolutionizes the traditional paradigm of IT management from “alert and respond” to “respond and alert.” The infrastructure platform’s built-in intelligence automates and eliminates previously manual tasks, as infrastructure operations become increasingly transparent to IT operations.

Enable Your Cloud with VMware.

With VMware intelligent virtual infrastructure, you can adopt the only cloud that matters—your cloud. The VMware approach enables you to extend current investments on your journey to deploy a cloud model that meets your unique business needs. Your cloud accelerates IT, which in turn accelerates meaningful results for your business.



Transform Your Infrastructure. Build an Intelligent Foundation.

VMware cloud infrastructure and management solutions deliver intelligent virtual infrastructure to increase IT agility while reducing costs and risk. This infrastructure, designed to deliver an IT and business model optimized for business-critical workloads, enables enterprises to establish the cost structure and service levels that best suit their organizations. Intelligent virtual infrastructure is highly adaptive and can simply scale with the business. It leverages VMware vSphere to provide consistent security, management and service quality regardless of where your workloads run—in a private cloud, in a VMware enabled public cloud or in a combination of both.

With intelligent virtual infrastructure built on VMware, enterprises:

- Run business-critical applications with confidence by eliminating downtime and reducing TCO.
- Deliver high-quality service and reduce operational expenses through built-in intelligence and automation.
- Increase agility by using an enterprise hybrid cloud, providing a flexible architecture for delivering on-demand access to resources wherever they reside.

VMware solutions allow you to progress to your cloud, transforming IT at a pace that is right for you.

VMware Solutions for Your Cloud

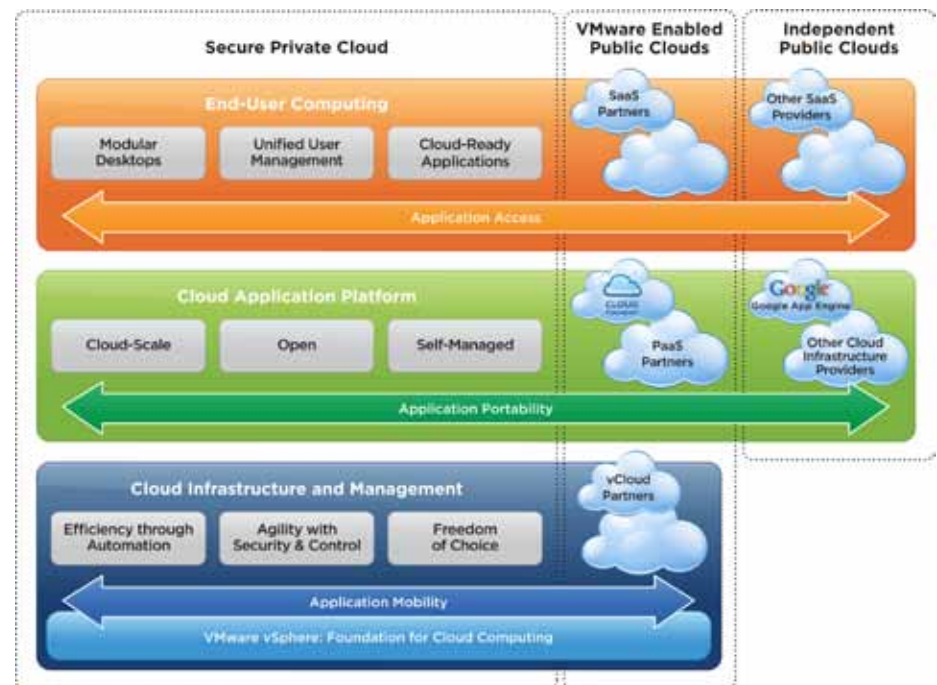


Figure 1: VMware delivers customer-proven cloud infrastructure and management, cloud application platform, and end-user computing solutions.

Improve Application Availability. Virtualize Critical Applications.

Over the years, enterprises have added servers to already brittle datacenter infrastructure to meet the constant demand for new business-critical applications, such as Oracle databases, Microsoft SQL and Exchange, SAP, and custom applications. These additions have resulted in unprecedented IT complexity and inefficiency, which has led to higher TCO and lower quality of service.

At organizations of all sizes, the need has never been greater for IT to run business-critical applications that meet end-user expectations with less downtime and cost. However, accomplishing these goals continues to present a complex challenge. According to Forrester Research, more than 70 percent of IT investment is allocated to infrastructure and application maintenance.

Increase Efficiency. Reduce TCO.

With virtualization, which removes the dependencies between software and the hardware that runs it, IT leaders transform underutilized infrastructure into elastic, automated and secure pools of compute resources available to applications on demand.

VMware cloud infrastructure and management solutions leverage virtualization to help businesses reduce infrastructure and operational costs through consolidation and automation. Today, more infrastructure is virtualized on VMware than any other platform. In its Magic Quadrant for x86 Server Virtualization Infrastructure, Gartner Inc. placed VMware in the leaders quadrant.³

With VMware, IT teams slash licensing costs by running legacy applications—without rewriting them—on the latest hardware. At the same time, IT teams dramatically reduce their server inventories, while updating their business-critical enterprise applications. Through server consolidation alone, VMware customers experience tremendous savings with higher average consolidation ratios.

Raise Service Quality.

For the most resource-intensive applications, VMware solutions guarantee high availability and scalability even in multitenant environments. While organizations see immediate cost benefits from deploying fewer servers, the real value of VMware virtualized infrastructure comes from improved reliability, higher performance and automated disaster recovery.

VMware cloud infrastructure and management solutions accelerate application delivery—from weeks to minutes—and improve service quality for end users. With the increased IT agility that comes from on-demand self-service provisioning, automated release cycles, and streamlined testing and troubleshooting, IT can focus more on innovation and less on infrastructure maintenance.

With VMware solutions, you can virtualize and run your business-critical applications confidently without sacrificing availability or service quality—and at lower costs.

University of British Columbia

“We’re proving here at UBC that VMware works in production environments; it works for Oracle database servers and everywhere in between. VMware technology lets you architect a very reliable, very dynamic solution to your computing needs.”

Michael Thorson
Director of Infrastructure,
University of British Columbia



Siemens IT Solutions and Services

“By understanding the impact of change, we better understand how we need to staff up or redeploy staff to higher-value activity to drive increased volume and improve efficiency. With VMware solutions, we can make the best use of the labor we have and optimize our total systems.”

David Frazier
Director, Competency Center for
Siemens IT Solutions and Services



Reduce Operational Expenses. Enable Intelligence and Automation.

When businesses virtualize their environments, they increasingly automate their operations to begin realizing the benefits of cloud computing. However, dynamic infrastructure and self-service capabilities require a new approach to management. Moreover, traditional IT management tools are not well equipped to support virtual environments. Designed to manage specific applications or data silos, traditional tools lack the built-in automation and control necessary to meet the continuously changing demands of dynamic, virtualized environments. In addition, most legacy tools are too costly and complex.

IT management must change. Inefficient and manual processes need to be replaced with automation, plus adaptive security and compliance to effectively control inherently dynamic virtual and cloud environments. Only VMware solutions give IT the power to balance workloads dynamically in response to changing business conditions, standardize the management of cloud infrastructure, and adhere to the increasing number of security and compliance standards. With intrinsic management, optimization and security capabilities, VMware solutions free IT staff and resources from routine management and enable them to focus on innovation.

Automate Operations. Manage Proactively.

Operations management disciplines are converging in the cloud. Performance, capacity and configuration management are becoming inseparable because of the dynamic nature of converged infrastructure. Configurations are fluid, capacity is shared and sourced from many places (multiple providers, infrastructure tiers, etc.), and all of these moving parts can impact performance. As a result, an enterprise needs intelligence—in the form of visibility across the system—and analytics to discern what is important amid increasing amounts of data.

VMware solutions deliver zero-touch infrastructure and operations with intelligence that enables an integrated approach to performance, capacity and configuration management. Patented analytics provide actionable intelligence across the stack. They allow you to automate manual processes for maximum efficiency and agility. For example, VMware solutions enable you to understand “normal” performance conditions by analyzing baseline service health and track trends. With smart alerts, you are automatically notified of impending performance degradation.

With powerful visualization of performance, capacity and configuration issues, and risks, you can resolve problems rapidly. In addition, a comprehensive, customizable view of your infrastructure

Infrastructure and Operations Management



Figure 2: VMware virtualization and cloud management provide a new approach to managing IT in the cloud era.

and applications from the datacenter to the virtual machine level provides you with a single source of truth.

Overall, this integrated approach to automating operations enables IT teams to be proactive and ensure optimal performance. VMware solutions help you discover root causes across technology silos in seconds, accelerate problem analysis and resolution, and reclaim unused resources with comprehensive visibility and automated configuration management.

Provide Adaptive Security.

Deliver Continuous Compliance.

You can tailor VMware solutions to meet your organization's specific security, compliance and remediation requirements through a single console. VMware provides a comprehensive framework for securing virtual datacenters and cloud environments at all levels—host, network, application, data and endpoint. With this virtualization-aware security, businesses can centralize security across the virtual datacenter, secure the edge of the virtual datacenter, protect applications from network-based threats, and offload antivirus

and antimalware processing for endpoints. This protection includes adaptive trust zones to isolate applications with different trust levels and to quarantine compromised applications.

VMware delivers strict compliance and accelerated remediation capabilities using dynamic discovery and classification of business-sensitive data. In addition, security is transparent and auditable, and access to the firewall and logs is controlled. Leveraging continuously automated compliance capabilities across virtual and physical environments, you can meet operational best practices and comply with increasingly demanding guidelines and regulatory requirements.

With VMware solutions, you get all of the visibility and protection for your infrastructure with none of the constraints, making it easier to maintain control, stay in compliance and mitigate risk.



Hybrid Cloud Customer Success

With a secure, compliant and managed hybrid cloud infrastructure, Consona's IT department ensures application portability between resources hosted onsite and offsite, provides its internal teams with the flexibility they need to expand or shrink capacity, and delivers fast provisioning of test and development environments for multitiered applications with large databases. Consona's hybrid cloud infrastructure has resulted in significant savings because the company has avoided the need to expand its physical datacenter footprint.

Consona's hybrid cloud infrastructure is based on VMware and BlueLock, a VMware vCloud Service Provider.



Increase IT Agility. Leverage the Enterprise Hybrid Cloud.

The recent AbsolutData study on cloud computing and business agility revealed that agility is linked to improving corporate revenue, cost efficiency and risk profiles, with 66 percent of the more than 600 respondents identifying business agility as a priority.⁴ For most enterprises, the hybrid cloud will be the most strategic and economical model. Hybrid cloud deployment would reduce typical total IT expenditures by approximately 20-30 percent.⁵

A hybrid cloud infrastructure is an environment where IT resources (from hardware to application level) are delivered by a combination of approaches, such as virtualized private clouds onsite and public cloud resources offsite. Moreover, some of the resources are purchased from third-party suppliers including Software-as-a-Service (SaaS), Infrastructure-as-a-Service (IaaS) or Platform-as-a-Service (PaaS) vendors. Portability of applications and software environments between public and private clouds is a key feature of hybrid cloud infrastructures. IT needs a common architecture to support the ability to move applications from its private cloud to public clouds when additional compute resources are needed, without compromising on security requirements. At the system level, portability is typically enabled by a virtualization layer that bridges internal and external resources.⁶

Through line-of-business owners, such as sales or customer service, many businesses have embarked on cloud computing through a public

cloud. This has created challenges for internal IT organizations responsible for maintaining IT compliance and control. With an attractive rate card, the on-demand, inexpensive self-service compute capacity offered through public clouds is driving enterprise IT to assess how it can deliver IT services faster, at lower cost, with the same security and control.

Adopt a Practical, Evolutionary Roadmap to Your Cloud.

VMware delivers the enterprise hybrid cloud, providing IT agility without compromise and enabling cost-effective, on-demand access to resources wherever the workloads reside. Enterprise hybrid clouds based on solutions from VMware and VMware vCloud ecosystem partners combine the security, performance and control of private clouds with the economics and scale of public clouds. VMware solutions provide standardization for IaaS to ensure that applications and data are portable and accessible across clouds.

Only VMware provides IT organizations with the flexibility to choose the infrastructure model, service levels and cost structure that best meet their needs. Businesses can work with preferred providers and move workloads in and out of a VMware enabled public cloud with little or no application rewriting, without lock-in or compromising security policies. With the open and evolutionary VMware approach, enterprises can minimize risk and disruption.

Ensure Interoperability and Portability Across Clouds.

VMware solutions are based on open standards, a common platform, and a common management and security framework. This ensures interoperability and portability across the entire cloud infrastructure regardless of deployment choice. Today, VMware partners with more than 3,500 service providers.

As a result, applications are portable between private and public clouds because VMware works closely with these service providers to leverage its secure and managed virtual

infrastructure platform. In fact, all five of the leading cloud providers in the most recent Gartner Inc. Magic Quadrant for Cloud Infrastructure as a Service and Web Hosting⁷ are partially or wholly VMware based. With VMware solutions, businesses can quickly and easily begin a pragmatic path to the enterprise hybrid cloud that allows IT to innovate while protecting investments.

Only VMware delivers a true enterprise hybrid cloud—your cloud—tailored to meet the specific needs of your business. Your business is different; your cloud should be, too.



VMware Enables the Enterprise Hybrid Cloud

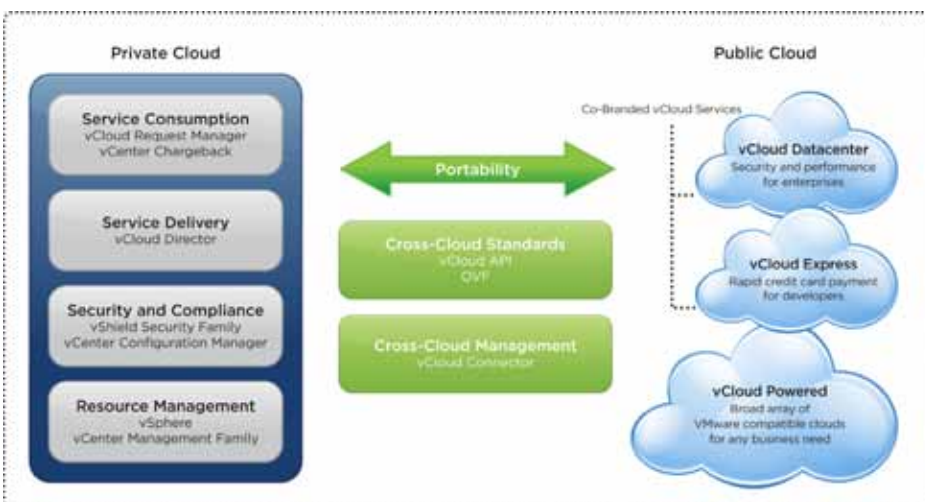


Figure 3: VMware solutions are based on open standards to ensure interoperability and portability across cloud infrastructures.

Hybrid Cloud Customer Success

Asset management company LAMCO believed implementing a hybrid cloud infrastructure would be the world-class solution it needed to manage revenue, cost and risk as it handled the wind-down of Lehman Brothers Holdings Inc. (LBHI). The VMware based hybrid cloud infrastructure provided by BlueLock allowed LAMCO to immediately reduce \$1M in IT expenses each month, outsource support personnel—managing with just three—and use a pay-as-you-grow, operational expense-based procurement model requiring minimal upfront capital. It also helped LAMCO increase transparency, providing the company with capabilities to meter and charge back expenses.



VMWARE SOLUTIONS DELIVER RESULTS

Reduce datacenter and capital costs by as much as 60%.

Cut energy costs by up to 80% by reducing power, cooling and real estate needs in the datacenter.

Decrease time spent on routine administrative tasks by about a third.

Achieve an increase of more than 50% in application availability and performance after virtualizing business-critical applications.

Choose to Lead. Team with VMware.

By dramatically reducing IT complexity, VMware has transformed IT for more than 250,000 customers over the course of more than a decade. VMware cloud infrastructure and management solutions transform IT by enabling your cloud, so that you can deliver greater value to your business.

Proven, award-winning VMware solutions help you build intelligent virtual infrastructure that delivers significant agility, cost and security benefits. They enable a cloud infrastructure with consistent protection, performance and quality of service.

VMware solutions allow you to virtualize and run critical business applications with confidence. They provide zero-touch infrastructure and automate operations to deliver high quality of service while dramatically reducing operational cost. Moreover, they enable the enterprise hybrid cloud to deliver IT agility without compromise, providing cost-effective, on-demand access to resources wherever the workloads reside.

VMware cloud infrastructure and management solutions allow IT to gracefully handle the proliferation of new workloads and applications, streamline processes, and quickly address changing business needs. Intelligent virtual infrastructure is delivered your way so IT can meet your unique business challenges.

Only VMware can help your IT environment evolve into an intelligent virtual infrastructure that is scalable, cost-effective and automated. With your cloud, your business-critical applications run at business-critical levels of availability and responsiveness without disruption, and you preserve your existing investments.

Your Cloud.
Intelligent Virtual Infrastructure.
Delivered Your Way.

1 AbsolutData. "Business-Agility Survey." February 2011.

2 IDG Research. "Global Cloud Computing Adoption: Transformation Is in the Air." January 2011.

3 Gartner Inc. "Magic Quadrant for x86 Server Virtualization Infrastructure." Thomas J. Bittman, Philip Dawson and George J. Weiss, May 2010.

4 AbsolutData. "Business-Agility Survey." February 2011.

5 VMware and EMC research, 2010.

6 IDC. "Accelerate Hybrid Cloud Success: Adjusting the IT Mindset." February 2011.

7 Gartner Inc. "Magic Quadrant for Cloud Infrastructure as a Service and Web Hosting." Lydia Leong and Ted Chamberlin, December 2010.

The Magic Quadrants are copyrighted 2010 by Gartner, Inc. and are reused with permission. The Magic Quadrant is a graphical representation of a marketplace at and for a specific time period. It depicts Gartner's analysis of how certain vendors measure against criteria for that marketplace, as defined by Gartner. Gartner does not endorse any vendor, product or service depicted in the Magic Quadrant, and does not advise technology users to select only those vendors placed in the "Leaders" quadrant. The Magic Quadrant is intended solely as a research tool, and is not meant to be a specific guide to action. Gartner disclaims all warranties, express or implied, with respect to this research, including any warranties of merchantability or fitness for a particular purpose.

VMware cloud and infrastructure management solutions include:

VMware vSphere®

Industry-leading platform for virtualization and cloud infrastructure that speeds the transition to your cloud with existing resources and supports the enterprise hybrid cloud.

VMware vCenter™

Seamless end-to-end management solutions that help accelerate service delivery, transform operational efficiency, automatically assure compliance and reduce business risks.

VMware vShield™

The foundation for trusted cloud infrastructures. Adaptive and simplified security with a single framework to protect virtual and cloud infrastructures at all levels—host, network, application, data and endpoint.

VMware vCloud®

Solutions and services that provide secure, on-demand access to shared infrastructure resources while simplifying infrastructure management.

VMware Services and Support

Expertise to help architect, design and validate cloud strategies and to help accelerate IT by integrating cloud capabilities.

To learn more, www.vmware.com/cloudinfrastructure.



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