VMware End-User Computing Platform

End-User Freedom.
IT Control.
For nearly two decades, PCs running Microsoft Windows applications have defined how users work. With PCs, businesses successfully transformed paper documents, file folders, memos and forms into digital versions that made their employees more efficient. Yet this transformation also created disconnected users and computing silos that now—as the pace of end-user technology accelerates—challenge organizations to maximize IT efficiency and workforce productivity. Today, more and more enterprises are operating applications on non-Windows platforms, and many of these applications either leverage a mobile device operating system or are hosted in the cloud.

As consumers, today’s employees have high expectations of IT. In their private lives, users purchase mobile devices that they like, load their favorite “apps” and connect to Web-based services. They collaborate with friends, family and contacts. Their personal computing environment helps them to be productive—wherever and whenever they use it. However, when end users bring their personal devices to work, they encounter resistance from IT teams trying to manage existing environments and feeling pressure to reduce costs while maintaining system security and availability. In the post-PC era, the increasingly complex task of managing greater end-user demands, device diversity and operating system-neutral applications has competitive organizations looking for a new approach to end-user computing.

Give End Users and IT What They Both Need.
Virtualization and cloud computing are accelerating the shift to the post-PC era while enabling greater IT and business agility. When organizations offer IT-as-a-service (ITaaS) capabilities—delivered through a cloud model on a foundation of dynamic, scalable and intelligent virtual infrastructure—end users have the flexibility to access the applications and data they want, on the devices they prefer. At the same time, IT teams have the tools and resources they need to comply with internal and industry mandates—and to transition from reacting to delivering high-value, on-demand services that increase efficiency and workforce productivity.

Leverage Your Cloud.
VMware end-user computing solutions use virtualization and a cloud computing approach to improve legacy infrastructure while addressing the requirements of end users and IT teams. As you adopt the only cloud that matters—your cloud—VMware solutions enable your organization to manage its existing environment better, integrate new applications and data services for greater workforce freedom, and improve IT control. Designed to meet your unique business needs, your cloud accelerates IT and end-user productivity, which in turn accelerates meaningful results for your business.
Mobility is critical to post-PC-era success. While IT organizations want to meet end-user demands for a consistent experience across devices—at home, on the go and in the office—IT must ensure that the business computing environment is secure, easy to manage and in continuous compliance.

VMware is building the platform for the post-PC era. Improving end-user freedom without compromising IT control, the platform is based on three key tenets:

- **Simplify** – Transform end-user assets (including operating system, applications and data) from computing silos into centralized IT managed services.
- **Manage** – Create a single, central point for IT to enable end-user access to IT services across the public and private cloud—with control over when an end user has access and at what level of security.
- **Connect** – Improve end-user connectivity to IT services and to other end users with the freedom to choose the best device and application for the task at hand.

In addition, VMware offers your IT organization a prescriptive end-user computing journey—from modernizing your existing environment and embracing cloud-based services at your preferred pace to enabling your cloud with the right approach, assets and devices for your organization and end users. Your cloud includes your policies, keeping IT in control and ensuring that your environment is efficiently managed, compliant and secure.

“In 2011, unit shipments of smartphones and media tablets, together, roared past PC shipments. In 2012, that gap will widen dramatically as 895 million of these mobile devices ship compared with less than 400 million PCs.”

Frank Gens
Senior Vice President and Chief Analyst
IDC

Figure 1: VMware solutions enable IT to simplify and convert existing computing silos to centralized services, then manage them better as IT connects end users to the services they demand.
When applications, data and the operating system are decoupled from the endpoint—and moved into the datacenter to be centrally managed in the cloud—IT teams gain a more streamlined and secure way to deliver and manage end-user assets. Desktop and application virtualization free these components from hard drives, providing agile services that employees can access on demand across devices and locations. This centralization both simplifies existing infrastructure—by turning desktops, applications and data into managed services—and readies organizations to quickly deliver new services while further optimizing end-user management.

**Deliver Greater Flexibility. Increase Control.**

VMware® View™ virtual desktop infrastructure enables organizations to adopt this more efficient, flexible, user-centric computing approach. The solution automates the management of thousands of desktops and securely delivers desktops as a service to users from a central location—with levels of availability and reliability unmatched by traditional PCs.

VMware View provides secure access to a desktop environment, including applications and data from any device, when and where a user needs it. It provides end users with the highest levels of mobility, as well as high-fidelity performance across locations. Moreover, VMware View with PC-over-IP (PCoIP) delivers a rich, personalized desktop for user access to data, applications, unified communications and multimedia content.

Tightly integrated with VMware View, VMware ThinApp® is an agentless application-virtualization solution that can be used on both virtual and physical desktops. It simplifies application delivery by eliminating conflicts and streamlining image management for VMware View virtual desktops, maintaining applications independently of the underlying operating system.

**Standardize on a Proven Platform.**

VMware View is built on the industry-leading VMware vSphere® virtualization platform. vSphere provides unparalleled performance, scalability, reliability and availability for virtual desktop environments. Organizations can standardize on a single common platform for their entire IT infrastructure—from the desktop to the datacenter—to enable private and public cloud-based desktop services.

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**University of Connecticut School of Business**

“Our vision is to offer our students access to virtual desktops wherever and whenever they need them. VMware View technology has put us on the path to realizing this dream, allowing students and faculty to focus on teaching and seamlessly using any device to access our instructional platforms.”

Jeremy Pollack
Director of IT
University of Connecticut School of Business

True user-centric computing requires a new end-user management paradigm—one that increases productivity while meeting workforce needs to access services across a variety of endpoints. In this new model, an end user might request resources from a laptop one minute, then use a tablet or mobile device the next. Applications can range from traditionally installed to Web-based to third-party-hosted software-as-a-service (SaaS) applications across the public cloud. With so many choices, users can be frustrated by having to manage many credentials across devices and applications. Every time they use an application outside of IT control, it can pose management, security and compliance challenges for the organization.

**Improve Protection.**
VMware delivers a new approach to end-user management through a universal services broker that securely manages access to desktop, application and data services as users move across clouds. VMware Horizon Application Manager™ enables IT to centrally handle users and resources—including user entitlement, resource provisioning, access, single sign-on (SSO), identity federation and license metering—according to the policies that govern the business. With control at the point of user connection to services, IT can manage delivery of, and access to, resources more efficiently than ever. In addition, IT teams can simplify security and compliance with regulatory requirements, industry standards and corporate best practices.

**Simplify Access.**
Concurrently, end users can be assigned a single set of credentials (username and password) for applications and devices that enables them to easily and securely access resources across private and public clouds. Users simply log in to a self-service corporate store to access SaaS, Web-based, enterprise and mobile applications based on their profiles. With Horizon Application Manager, IT teams can dramatically reduce the cost and complexity of application access, management and security, making it easier for organizations to adopt new services and deliver them to end users.

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**ADP Dealer Services**

“At ADP Dealer Services, we wanted to expand a virtual desktop infrastructure that was simple and scalable, and we wanted to work with an innovative company to provide that infrastructure. With a workforce that spans multiple sites, VMware View is a great solution for supporting our differentiated user base via WAN and remote connectivity. With the release of View 5 and its PCoIP optimization reducing WAN bandwidth usage, the performance and the ease of management for our virtual desktops is only going to get better.”

Bill Naughton
Chief Information Officer
ADP Dealer Services

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**VMware Delivers a Universal Services Broker**

**Figure 2:** VMware enables a unified application-management approach that centralizes cloud identity management for fast, secure access to all SaaS and Web applications.

IT organizations not only need to connect end users to resources and assets; IT also needs to connect end users with their colleagues so that they can accomplish tasks. VMware end-user computing solutions universally link people to one another and to technology, regardless of device types, platforms and locations.

Ensure Secure Data Access and Collaboration Within Your Cloud. VMware solutions enable end users to interact through a new breed of applications that support real-time sharing, collaborative workflows and multichannel communication. As users adopt these lightweight, easy-to-use, social-based applications, they can expect to get work done in a more engaging, cooperative and flexible way—moving transparently across private, public and hybrid clouds:

SlideRocket™ – An innovative, cross-platform SaaS solution for presentation creation, management and delivery. SlideRocket improves communication and drives greater results faster, more efficiently and creatively through a dynamic and collaborative platform. It blurs the lines between presentations, Web sites and multimedia content, representing a fundamental shift from PC-era solutions.

Socialcast® – An enterprise social-collaboration platform delivered as a hosted service or onsite in a private cloud. Socialcast connects people to the knowledge, ideas and resources they need to drive new levels of business performance. By integrating a robust social layer within the business applications and systems people use every day, Socialcast creates a contextual flow of ideas and engagement with today’s complex business processes.

Strides™ – A lightweight social application. Strides enables teams to manage tasks, conversations and files in one shared workspace. Team leaders can clearly define objectives and tasks while simultaneously providing team members with real-time visibility into what everyone is working on, helping teams work better together.

VMware Zimbra® – A browser-based, enterprise-class open-source email and collaboration platform. Zimbra is designed for virtualization and portability across private and public clouds, making it much simpler to manage and more cost-effective to scale. It creates a communications hub that brings email, contacts, calendar, documents, file sharing, tasks, social media and enterprise applications together in one user interface. It boosts end-user productivity—on any device or desktop, anytime, any place—at dramatically lower costs than legacy solutions.

Meet New Requirements. VMware continues to innovate. By enabling end users to easily and securely access assigned data services on their devices through standards-based HTML5, VMware will move users forward on non-Windows devices while providing access to legacy Windows applications. VMware will free data tied to a single device and enable IT to secure access and allow collaboration from any device through assigned policies.

City of Ventura

“Since deploying VMware Zimbra my staff is pretty happy because they don’t have to go to desktops anymore…. They can do an upgrade, they can train everything through the Web, so it’s just a lot easier for them…. The efficiencies we’ve seen with VMware Zimbra are lower cost of operation and lower cost of support. I’d recommend it because I think it offers the best cloud model that is out there right now.”

John Emerson
Chief Information Officer
City of Ventura

Today, many employees carry two or more devices. To help organizations seamlessly transition into the post-PC era, VMware provides a proven journey toward better end-user computing. The VMware approach includes three phases that require IT organizations to examine what they have today, plan carefully to avoid disrupting current workforce productivity and reinvest any savings into self-funded IT projects. During this process, IT teams can optimize existing investments and leverage the incremental savings to adopt new technologies in phases that systematically break free of traditional requirements and approaches to IT desktop management.

“VMware is helping us improve workflow, build a more secure environment and reduce administrative overhead of the software—those are our three biggest successes by far,” said Tim Walters, Network Administrator at McCullough-Hyde Memorial Hospital.

Phase 1: Improve What You Have Now. IT teams should evaluate how to improve existing and legacy investments first. Most current desktops and applications exist for good business reasons. IT must rationalize current desktops and applications and gain the efficiencies with them that are most important to business outcomes. IT can simplify Windows-based components with virtualization, the foundation for cloud computing, to drive operational efficiencies and cost savings.

Virtualization decouples applications and the operating system from the hardware that runs them, creating secure, efficient resource pools to enable ITaaS. This improved service-delivery model enables IT to operate much more efficiently and respond faster to employee and business needs. By leveraging key initiatives—including operating system migrations, hardware refreshes, merger and acquisition activities, and campus moves—IT can strategically transform desktops into centrally managed services, saving operating expenses while furthering IT agility.

Phase 2: Embrace the Cloud. As IT teams continue on their journey to ITaaS, they should look to reinvest savings from phase 1 to fuel innovation in phase 2. When IT organizations embrace a cloud-management paradigm, they more easily enable the adoption of resources and applications across private and public cloud services. With the ability to integrate public cloud services—such as SaaS applications—easily and securely, IT teams gain a bridge to the hybrid cloud without abandoning legacy services. Then, they can adopt and transition at a pace that is realistic for the organization as they deliver the productivity and collaboration needed for end users while maintaining the security and control that IT requires. Throughout the transition, IT teams discover that incremental cost savings and efficiencies deliver increasing returns.
Phase 3: Escape to Your Cloud.
By leveraging increasing returns, IT teams can accelerate their escape from the vicious IT cycle of upgrading and delivering traditional Windows-based PC applications. They can embrace new application-delivery models and productivity tools—such as social application and data services that connect users to one another in new, real-time and collaborative ways. When organizations are free from device and platform concerns, they can enable users to access application and data services with the freedom to move across devices and locations. VMware solutions give end users the personal freedom they desire while increasing IT capabilities to manage, control and innovate. With VMware solutions, the workplace is more productive and collaborative while IT is more efficient and agile.

Organizations that begin the journey to the cloud with VMware by virtualizing datacenters can easily extend that foundational technology to end-user computing. The VMware end-user computing platform runs on vSphere, so organizations can take advantage of a common platform and unified set of management tools. This pragmatic and prescriptive journey ensures that end users are productive and engaged, while IT maintains control and accelerates transformation to the post-PC era. IT professionals that journey with VMware enable a new world with greater workforce productivity, collaboration and mobility—a world where IT heroes drive business success.

Break the Cycle and Move to the Post-PC Era

City of Pittsburgh
“One of our major triggers for going to desktop virtualization was specifically, doing more with less. Some of the benefits for the City of Pittsburgh users with VMware View are that they can log in remotely—they can get to their computer wherever they are. Some of the benefits from our administrative side are that we derive the same benefits as our users. It’s our desk, wherever we are. We can connect in from home and troubleshoot an issue. That means we get things up and running faster if we don’t have to come into the office.... VMware View is being extended into our cloud strategy to provide infrastructure as a service to other departments.”

Alex Musicante
Systems Security Architect
Information Systems Department
City of Pittsburgh

Figure 3: VMware provides a phased approach to better end-user computing in the post-PC era.
VMware View customers have been able to lower their TCO for desktop infrastructures by 50 percent, saving more than $500 annually per user.6

Ian Song, Research Manager
Randy Perry, Vice President
IDC

Accelerate End-User Computing. Team with VMware.

End users have come to expect greater mobility and productivity from a wider variety of devices. They want their applications and data on the devices they choose—with a native experience. With VMware end-user computing solutions, users gain access to new end-user computing services that drive productivity and collaboration while providing high service-level agreements (SLAs).

At the same time, IT organizations of all sizes can enable new and better ways for users to work that go beyond the limitations of physical PCs, legacy operating systems and static management approaches. IT teams can simplify and optimize existing investments while embracing cloud-based technologies that foster innovation. Finally, IT organizations can deliver an experience that meets and exceeds end-user expectations.

VMware solutions enable IT organizations and end users to work together to deliver against business objectives while meeting compliance requirements. Only VMware can help your IT team and environment break the current technology barriers and shift the focus from reacting to delivering services for business agility and workforce productivity. Only VMware is focused on delivering a platform for common infrastructure, management and security across the entire IT environment.

VMware end-user computing solutions for the post-PC era leverage virtualization and your cloud to enable you to simplify technology complexity, manage more efficiently, and better connect your workforce to technology and to one another.

Your Cloud. End-User Freedom. IT Control.

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5 VMware Case Study. “University of Toledo.” 2009.
VMware end-user computing solutions include:

- **VMware View** – Leading desktop virtualization solution that simplifies desktop and application management while increasing security and control, and delivers a personalized high-fidelity experience for end users across sessions and devices.

- **VMware ThinApp** – Agentless application virtualization solution that simplifies and reduces the cost and complexity of application delivery, eliminating application conflicts and streamlining management.

- **VMware Horizon Application Manager** – Secure resource access and provisioning solution that helps organizations simplify, manage and connect end users to their work.

- **VMware Horizon Mobile** – Secure mobile access and provisioning solution that enables a separate, isolated work phone environment on a user’s personal device.

- **SlideRocket** – Dynamic and collaborative presentation platform that improves communication and drives greater results faster, more efficiently and creatively.

- **Socialcast** – Internal enterprise social-collaboration platform that connects people to the knowledge, ideas and resources they need to drive new levels of business performance.

- **Strides** – Social application that enables teams to manage tasks, conversations and files in one shared workspace, in realtime, helping teams work better together.

- **VMware Zimbra** – Browser-based, enterprise-class open-source email and collaboration platform that boosts end-user productivity and is easy to deploy, simple to manage and more cost-effective to scale.

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**Learn More**

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