

vmware®



MIGRATING TO WINDOWS 7 WITH VMWARE VIEW™

The clear business case for action

Setting out the issues and exploring our options

Executive summary

Managing employee desktops is currently a time-consuming, expensive and daunting task. While people in every department now largely rely on their desktop computers to function day-to-day and deliver results – the management of that desktop estate has become a headache for the IT team, as well as a significant drain on available resources. In brief, it's taking money away from the innovative, business-building projects with which we'd all like to engage.

Until now, there has been little that could be done about it. There haven't really been any efficient methods available for updating individual devices with critical new applications and patches. Each and every platform upgrade, patch and security update can be complex and error prone. Automatic and zero touch models can be expensive to build and operate.

It's crunch time

Our organization is facing the need to migrate our desktop environment to the new Windows 7 operating system from Microsoft – for a multitude of reasons outlined on the following pages. That means we now face a choice, like so many organizations out there: to continue managing our desktop estate in an essentially cumbersome and inefficient way; or to explore a competitive new approach using cutting-edge virtualization technology from the industry leader – VMware.

This paper sets out the issues and explores the options – while providing a clear business case for moving forward with a virtualized desktop environment.

First of all, what exactly is Windows 7?

It's the latest version of Microsoft Windows, a series of operating systems produced by Microsoft for use on home and business desktops, laptops, netbooks, tablet PCs and media center PCs. This latest release has been designed to simplify the things that our people do every day, helping them to work the way they want.

Ease. Microsoft has introduced a raft of new functionality in Windows 7, making it easier for our users to access their most-used items more quickly. Windows can be arranged on the desktop quickly too, enabling a greater number of items to remain open and organized.

Performance. Microsoft has introduced a number of performance enhancements, which mean that Windows 7 starts up and shuts down more quickly. It also uses more intelligent service management to keep unnecessary services dormant until they're actually needed. All of this translates into a better user experience and greater productivity for our employees.

Please see **Appendix I** at the back of this document for a summary of some of the user benefits of Windows 7.

Why are we migrating to Windows 7?

In brief, because we have to.

Necessity. Windows XP support is scheduled to end in August 2014. In reality, by 2012 many vendors will start releasing new versions of software not supported on Windows XP. Because few companies migrated to Windows Vista, Microsoft has pushed Extended Support for Windows XP out to August 2014 - Mainstream Support ended in 2009. While that may be three years away, with a 5-year lifecycle on most desktops, companies that haven't already started to migrate are being forced to face an accelerated refresh schedule, or risk a compromised support model until they complete their upgrades.

Aging hardware. Upgrading desktops is expensive and something we only do when the business value is tangible. However supporting our aging desktop estate is also costly - and trying to run the new Windows 7 operating system on our aging computers will require extra time and expense to deliver ongoing compatibility. That makes this a sensible time to upgrade our older hardware - however desktop manufacturers aren't shipping anything other than Windows 7-enabled devices at this point.

Windows 7 won't deliver huge business benefits in and of itself - as a quick read of **Appendix I** will confirm. It's a slightly upgraded version of what we're already running on the desktop. Nevertheless, it's a move that we as a business now have to make for the reasons outlined above.

What does that mean to us?

We need to take action and migrate. The big questions are:

- How do we make the move as quickly, cheaply and simply as possible?
- Is it possible to create related operational improvements that will make the unavoidable and substantial investment required to migrate to Windows 7 pay real and lasting business dividends?

What are our options?

We have two clear options.

Option A: Migrate to Windows 7 within our current desktop environment

Many businesses are simply undertaking the migration with the desktop estate as is. The downsides of this are numerous.

Time and budget intensive. Upgrading significant numbers of desktop devices across our organization is costly and time consuming for our IT teams and therefore the business. Typically, migrating to Windows 7 could take 63,500 working hours, and \$6.6 million in budget*. It involves an arduous 7-step process, which you can find outlined in depth in **Appendix II**. We will first have to conduct a thorough hardware inventory and analysis to ensure the existing hardware will run the new operating system. Our existing Windows XP applications will not automatically be compatible with Windows 7 so we will also have to conduct regression testing particularly on all our custom-built, business critical applications, which will eat up more time and money.

Verifying that applications will run on Windows 7 is just the start. Then there's the repetitive task of physically carrying out the upgrade across the desktop estate. Numerous manual upgrades are likely to be required to get devices performing to the desired standard. Where the existing hardware can't be upgraded, new devices will need to be purchased and rolled out across the company as Windows 7 needs to run on higher performance computers than older Windows' versions, such as Windows XP.

Poor end-user experience. The manual process will be disruptive for our end-users and will inevitably bring with it bugs which will also provide heavy work for our help-desk teams.

Not future-proof. At the end of the migration process, we will still have in place an un-modernized desktop estate which means that we will have to go through the same pain and expense next time we have to conduct any kind of application upgrade or operating system migration.

*Figures from the VMware Virtualization TCO / ROI Calculator are based on a 2000-desktop environment.

Option B: Migrate to Windows 7 with VMware View™

Deploying market-leading desktop virtualization technology from VMware – a solution called VMware View – will speed and ease the migration and, importantly, deliver lasting business value.

This option will help to greatly minimize the immediate cost and disruption of moving to Windows 7. It will leave us with a ‘thin client’ desktop estate that is far easier and cheaper to manage in the future, freeing up IT expertise going forward for critical business innovation projects.

What is desktop virtualization and VMware View?

Desktop virtualization enables multiple, networked computer users to run individual desktops via a single, centrally located computer or server based in our datacenter. Users are all connected to the central machine by a proprietary Local Area Network (LAN) or a Wide Area Network (WAN) or the Internet.

This is in contrast to how we currently run our desktops: with every computer operating as a completely self-contained unit with its own operating system, peripherals and application programs all coupled together. This means that failure of one of the layers in the desktop (hardware/OS/apps/profile) can break the whole system.

Overall expenses are reduced because resources can be shared and allocated to users as needed. The integrity of user information is improved because all data is maintained and backed up in the datacenter. Software conflicts are minimized by reducing the total number of programs stored on any given machine.

All users can customize and modify their desktops to meet their specific needs and job roles – the same desktop can be securely mirrored on a range of devices, delivering genuine freedom and mobility.

VMware View is the market-leading, proven solution to enable desktop virtualization, letting us deliver desktops from the datacenter as a secure, managed service. It's the only platform on the market designed specifically for desktop virtualization.

Making a clear business case

What does desktop virtualization have to do with Windows 7 migration?

The short answer is everything.

Immediate deployment benefits

- Conducting a Windows 7 migration in a virtualized desktop environment is proven to cost half as much and be twice as fast and one third less complex.
- We can also migrate many of our critical custom built applications with ease and speed. According to analysts, the cost of custom application remediation can range anywhere from a couple of thousand to several hundred thousand dollars. If the application is suitable for virtualization, it can easily be packaged and delivered to significantly reduce costs. Also, virtualizing an application package will save a significant amount of time as opposed to repackaging the application for the new Windows 7 environment.
- Deploying new operating systems to numerous desktops can be measured in months, and in years for some large enterprises who are required to undertake the upgrade in batches. With VMware View in place, we can deliver the roll out in a matter of hours.

Long-term desktop lifecycle benefits

- Running a virtualized desktop environment will make the inevitable future migrations to new releases of Windows faster, cheaper and simpler.
- It will also mean that all future application roll outs, upgrades and security patches will be easier to manage.
- Isolating applications from the operating system and each other reduces conflicts and resulting support issues.

Benefits overview: what we gain by following Option B

- Reduced OPEX and the ability to manage costs to our advantage
- Increased productivity from existing resources
- Strategic advantage for future IT roll outs
- Increased business agility and flexibility
- Minimized risk and effortless compliance
- Improved efficiency of desktop IT staff
- Flexibility to meet the needs of our organization and ensure business continuity
- Secure access to data and IP
- Improved levels of service and faster end user support
- Ability to work securely and effectively, remotely and via mobile devices
- One seamless user experience everywhere

Please see **Appendix III** for a more detailed look at the cost, time and performance benefits of migrating to Windows 7 with VMware View

Proven ROI calculations

Using the VMware Virtualization TCO / ROI Calculator, based on a 2000-desktop environment, migrating to Windows 7 could eat up much as 63,500 working hours, and \$6.6 million in budget. To put this another way - the cost of migrating per user costs anywhere from \$1250 to \$3000, depending on the structure of the enterprise.

Despite the time and cost involved in moving to the newer versions of Windows or Office there is little payback in total cost of ownership (TCO) savings. Gartner found that as organizations get better at managing their PCs it is harder to justify mass migrations through savings in Total Cost of Ownership**. Costs will also be higher if some upgrades have been skipped. For example, the cost of moving to Windows 7 will be higher for companies who have not deployed Windows Vista and are moving direct from Windows XP, as more remediation and testing will be needed.

**Gartner RAS Core Research Note G00167193 Cost Model: Migration to Windows Vista and Windows 7, Michael A. Silver, 14 May 2009

Our next step: take action

As we have seen, there is a pressing need for us to act now. Windows 7 is upon us – and how we proceed will impact not just the ease, speed and cost of this migration, but that of future migrations too.

We're ready to help. With VMware View you will have the leading technology to make the migration to Windows 7 quick and affordable. You will also have an investment that will continue to pay real and lasting business dividends.



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Appendix I

Windows 7: At a glance guide

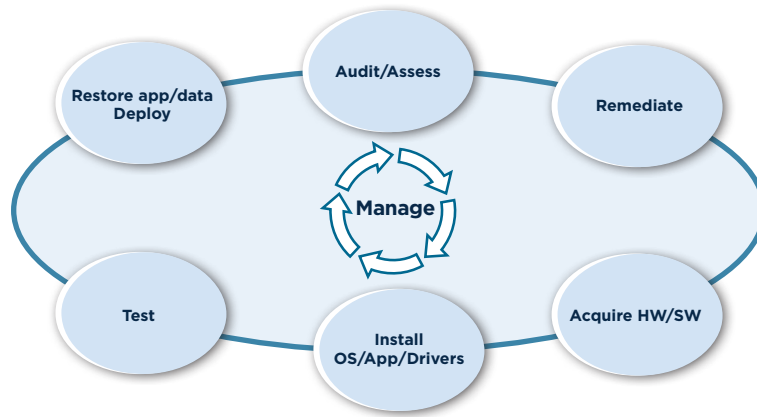
Here are examples of some of the new things that you and your people will be able to do with Windows 7.

1. **Quicker access to all of your stuff** — Use Pin and Jump Lists to keep the programs and files you use the most, right at your fingertips.
2. **Easily create and share movies** — Create great looking movies and slideshows and share them on YouTube in minutes.
3. **Manage open windows more easily** — Resize and arrange windows simply by dragging their borders to the edge of your screen.
4. **Connect to networks easily** — View and connect to any available wireless network in as few as three clicks.
5. **Quickly find what you're looking for** — Use Windows Search to find a specific file, program, or email in a few seconds.
6. **Do more and wait less** — Improvements that can accelerate sleep and resume and make your PC more responsive help you get more done.
7. **Share files and printers among multiple PCs** — From one Windows 7-based PC to another, you can share files, music, photos, and even printers across your home network.
8. **Touch and tap rather than point and click** — Windows 7 makes PCs with touch screens easier and more intuitive to use.
9. **Stay entertained effortlessly** — With Windows Media Center you get one place to enjoy your photos and music, watch and record live TV, and view free Internet TV.
10. **Manage devices more easily** — Manage printers, cameras, music players, and other devices from a single place.

Appendix II

What a Traditional Migration to Windows 7 entails

A traditional desktop refresh project can encompass as many as seven different phases, each of which represents a significant investment in labor and assets.



Using the VMware Virtualization TCO / ROI Calculator, based on a 2,000-desktop environment, migrating to Windows 7 could eat up much as 63,500 working hours, and \$6.6 million in budget.

Impact to the company

A thorough audit of 2,000 desktops can take 300-350 hours. Having an inventory tool such as SMS/SCOM or LANDesk in place ahead of the refresh project can help reduce this phase tremendously.

Audit

Understanding what is in use on the desktop and how users interact with deployed hardware and software is critical to ensuring the company's ability to incorporate those requirements into their new offerings. Frequently, new devices such as printers or applications are added, independent of any desktop computer replacement. Departments may require specific applications or devices for a group of desktops. The central desktop group may not necessarily have control over, or awareness of, these new requirements until after deployment has been carried out. Auditing their current desktops is imperative to tracking deployed software and its licensing as well as local peripheral devices.

Application Compatibility Testing and Remediation

By some estimates, up to 40% of applications that a company runs are custom-written, with the remainder being off-the-shelf. Both off-the-shelf and custom applications will need varying degrees of remediation. For some, it could be as simple as getting the right compatible version; and it could entail packaging

Impact to the company

Thousands of hours and millions of dollars spent remediating applications.

enhancements for others. There will still be a few applications that simply will not work in new environment, due to a lack of product support or a need for the application to be completely rewritten. Qualifying all applications requires regression testing with the current application set. This will validate that they are not only compatible with Windows 7, but also that they continue to work together on the new platform. Given that there are hundreds of applications in use within any company at the desk level, this represents an enormous commitment of time, budget and energy.

Impact to the company

Millions of dollars spent on software upgrades.

Hardware/Software Acquisition

Most companies will find that at least some of their off-the-shelf applications need to be upgraded. The entire enterprise desktop infrastructure may need to be upgraded as well, to handle the new operating system, drivers and applications. This includes 'software inventory and push' suites such as Microsoft System Center Operations Manager, LANDesk and OpsWare. Finally, the new desktops themselves must be purchased.

Installation

When it comes to the new hardware and software stack, preparing the 'image' – operating system, drivers, and applications – is another essential step in the refresh project. The desktop image is the fundamental unit of management – meaning that when all else fails, one can always re-image the desktop. If a company is dealing with new hardware, a new operating system and most likely some new applications too, developing a new image takes a significant amount of time to complete.

Testing and Deployment

As with remediation, thorough testing must be performed to ensure that each new device performs as required, and that system images and applications can be successfully deployed to users through the enterprise desktop infrastructure.

Restore User Data and Training

Finally, user data must be restored to the new device. User data is a key element: without this personalization, the end user will have to start afresh and work on customizing their desktop and application settings. With newer applications and working with the new OS, some training will be required to ensure that users can efficiently use their new environment.

Impact to the company

Thousands of hours and millions of dollars spent training users.

Appendix III

VMware View is the industry's first purpose built solution for delivering desktops as a managed service. Using VMware View, you can transform desktop migration and management into a simplified and automated process, reduce the total cost of desktop ownership by 50%, provide end users with a consistent, high performance desktop experience and bring the power of the datacenter and VMware vSphere™ to your desktops.

Securely Deliver Virtual Desktops as a Managed Service

Just as virtualization transformed servers in the datacenter, VMware View is transforming the desktop from being device-centric to user-centric. Virtualization decouples desktop environments from the underlying PC hardware. Desktop operating systems, applications and data can now be managed independently of each other in the datacenter for extreme business agility. Desktop management is centralized and simplified while costs are reduced.

VMware View with PCoIP delivers an optimized desktop experience complete with all applications, data and settings, to thin clients and laptops – in the office or on the road. Using VMware View allows you to balance the requirements of your business with the needs of your users, to create a seamless experience where desktops are virtual and able to follow the user – regardless of their device or location.

Standardize on a Single Virtualization Platform

By standardizing on a common virtualization platform to manage both servers and desktops from the datacenter, you minimize your operational risk. VMware View includes, and is tightly integrated with, VMware vSphere: the only virtualization platform tuned and optimized specifically for desktop workloads. You can 'power on' thousands of desktops at once without any performance degradation, and easily extend business continuity and disaster recovery features from VMware vSphere to your desktops without adding any extra cost or complexity.

Give Users a High Performance Virtual Desktop Experience

VMware View lets users access their virtual desktops from a wide variety of devices – thick, thin or mobile – without any performance degradation. On LAN or WAN connections, VMware View with PCoIP delivers a high-performance desktop experience, even over high latency and low bandwidth connections. You can choose from several multi-monitor configurations, play rich multi-media and easily connect to peripheral devices. And since desktops are tied to a user's identity and not to a device, a desktop can follow the user from device to device for unbeatable freedom and mobility.

Application Virtualization

Agentless application virtualization lets you accelerate application deployment and simplify application migration. With ThinApp™, applications are packaged into single executables that run completely isolated from each other and the operating system for conflict-free execution on end-point devices. Application packages can be deployed to different Windows platforms, eliminating costly recoding and regression testing too, so you can easily migrate existing applications to Windows 7. This effectively allows you to:

- Eliminate application conflicts, reducing the need for recoding and regression testing
- Deliver reliable and flexible application access to all user profiles
- Eliminate the need for additional server hardware or software investments

ThinApp therefore allows you to save the cost of application porting by virtualizing legacy applications to deploy on Windows 7. Faster deployments with less testing mean your business applications will be in production faster, minimizing downtime and reducing risks to the business. And if you've already packaged applications with ThinApp for XP or other versions of Windows, you can easily convert them to the ThinApp Windows 7 format with Relink.

Trim the Migration Process from Seven Steps to Just Two

By incorporating VMware View and ThinApp into the migration process for Windows 7, companies receive significant benefits not only during the migration process, but also additional strategic benefits that will represent ongoing savings in years to come. Up to 50% of the cost of migration can be saved or avoided, while also cutting in half the time to perform the upgrade. Ongoing operational costs post-migration will yield as much as a 40% reduction. Finally, by deploying a flexible, user-centric architecture, companies will improve responsiveness to users, as well as increasing their mobility and productivity.

By leveraging VMware View and ThinApp, it is possible to trim the migration process from seven steps (Audit, Remediation, Acquisition, Testing, Deployment, Restoration and User Training) down to as few as two. By simply (1) virtualizing applications and (2) deploying virtual desktops, the need for auditing, application remediation, desktop acquisition, deployment, and user data restoration may all be greatly reduced if not eliminated, since the end-user devices won't be touched. This yields an enormous reduction in time and dollars as well as a significantly more robust and scalable desktop environment.

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