Avoiding the 8 common mistakes of Windows 7 & Windows 8 migrations

How to make the most of a Windows 7 & Windows 8 migration and PC refresh to enhance performance, security, and manageability

DELL

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Executive summary

As companies revive the Windows® 7 and Windows 8 operating system migration plans they put off at the start of the recession, they are able to leverage experience and hindsight that has accumulated in the meantime. For example, many organizations have found that pairing Windows 7 and or Windows 8 with new mobile client systems can pay dividends in performance and efficiency. But purchasing new laptops, tablets and notebooks with Windows 7 or Windows 8 factory-installed still leaves the task of moving dozens or even hundreds of important business applications into the new environment. Knowing how other organizations have tackled this challenge can smooth the transition and help save time and money.

An early adopter of Windows 7 and Windows 8.1 within its own global infrastructure, Dell has distilled valuable advice and best practice recommendations for other enterprises looking to maximize Windows 7 and Windows 8 value and reduce migration risk. This paper presents best practices based on the experience of the Dell IT group and many of Dell's largest customers, focusing on eight common mistakes to avoid during migration projects:

- Missing the opportunity to transform the PC environment
- Overlooking the peripherals' drivers
- Using the wrong tools for testing and remediation
- Following incomplete application readiness processes
- Not developing a user access control strategy
- Using Microsoft® Key Management Service on the client
- Using virtualization technologies that do not meet desired business goals
- Relying on the "usual" deployment strategy and tools

Organization can put these best practices to work immediately. Dell also stands ready to provide counseling, a variety of services, and proven tools and technologies to help enterprise IT groups plan, design, and implement a successful Windows 7 & Windows 8 migrations

Introduction

Many organizations delayed client refresh initiatives to conserve resources during the economic recession. Organizations also delayed migration to the Windows 7 operating system for the same reason, and because OS migrations can be risky and time-consuming. With the release of Windows 8, organizations also needed to consider their strategy for tablets and BYOD.

Now many of those same organizations are dusting off their refresh and migration plans due to the easing of the recession, and because they see an opportunity for significant performance and efficiency gains that can be had with Windows 7 and new client systems and the benefits that Windows 8 can bring to the mobile workforce. Windows 7 has proven to be a solid operating system, and adoption is increasing—especially together with PC refresh initiatives. A PC refresh and OS upgrade complement each other in enhancing performance and are more cost-effective when performed at the same time.

IT groups planning to coordinate Windows 7 or Windows 8 migrations or a hybrid of both within their organization's PC/laptop and tablet refresh schedules may realize that they are running out of time for deployment prerequisites such as performing application discovery and compatibility testing, deciding on 32-bit or 64-bit deployment, and selecting a deployment method, including possible automation. This paper offers suggestions for making those tasks more efficient and effective.

Replacing desktops with laptops as part of Windows 7 migration

With the importance of mobility in the workplace growing, companies migrating to Windows 7 in conjunction with a PC refresh often replace older desktop PCs with new laptop computers. In enterprise campus settings, mobility is seen as a key driver of productivity, empowering workers by greatly increasing access to information. Mobile technologies make it easier for employees to collaborate in informal settings such as cafeterias and lobbies, and enable people to take their work with them throughout the enterprise campus and beyond.

To augment these mobility benefits, Dell offers improved performance, productivity, manageability, and security with the Dell Latitude™ E-Family next-generation laptops (see "Maximizing migration benefits with the appropriate laptop"). Windows 7 migration and deployment services are also available from Dell, including readiness assessments, migration workshops, and custom factory integration (CFI) software imaging.

The Dell IT group has gained extensive knowledge and experience on Windows 7 migration best practices. As an early adopter, Dell has moved the majority of its employees worldwide to the Windows 7 operating system. Dell Services participated jointly with Microsoft in supporting mutual customers through the Windows 7 Technology Adoption Program (TAP). In addition, Dell is a member of the Microsoft Consulting Services Preferred Services Partner Program in the United States.

Successfully migrating legacy business applications

Organizations can simply order Dell Latitude E-Family next-generation laptops with Windows 7 factory-installed. However, organizations must still migrate their legacy business applications to the new platform. All of these applications require compatibility testing, some will require remediation and some may require re-packaging into standard windows installer (msi) format before they can be moved into the new environment.

The Dell IT group has a unique set of tools, best practices and lessons learned, and is able to provide helpful guidance for other large enterprise IT groups that are migrating their applications. Dell IT utilizes ChangeBASE for automated application readiness as well as EUC application management services to help with Windows 7 and Widows 8 migration.

At the heart of these best practices and lessons learned are eight common mistakes to avoid during migration projects—mistakes ranging from performing incomplete application compatibility testing to relying on the "usual" deployment strategy and tools.

Mistake 1: Missing the opportunity to transform the PC environment

The Windows 7 migration process provides a once-per-decade chance to improve the entire PC environment by packaging or sequencing applications for automated management, implementing license management and harvesting, reducing user-based administration in favor of automated PC management, and increasing the return on investment (ROI) of PC management tools.

Dell can help IT groups seize this opportunity. Dell offers inventory and rationalization capabilities and enhanced product validation of Microsoft solutions on Dell platforms. Organizations can also choose from a range of Dell management options.

For example, Dell Image Management Services help IT organizations streamline the process of securely creating, deploying, and managing Windows 7 software builds on Dell hardware—allowing companies to reduce total cost of ownership.

For organizations considering automation, the Dell KACE solution is designed to automatically perform the most complex tasks in a typical deployment, from installing applications to migrating user settings. Based on each customer's deployment objectives and rules, Dell can deploy a Windows 7 image, install all required applications, securely migrate individual user data and perform all other necessary steps within a single process. By using automation to help ensure consistency and accuracy, DAD helps to reduce costs and speed project completion.

Mistake 2: Overlooking the peripherals' drivers

Peripherals compatibility is an important aspect of evaluating migration readiness. It is easy to overlook drivers, but they are essential to ensure that printers and other peripherals function smoothly following migration. Updating them should be part of planning a move to Windows 7. Relevant drivers include print drivers on the organization's print servers, third-party cards such as proprietary graphics and video cards, and legacy model drivers.

A Dell driver CAB file is available to streamline driver updates. A complimentary download, the Dell Client Driver Deployment CAB is a simple file directory with all driver files required for Dell Latitude laptops, ready to use. Downloading the Dell CAB file with plug-and-play drivers for the specific platform helps avoid the need to search the Web for the correct drivers. Dell also provides a native catalog for Microsoft System Center Updates Publisher, which leverages the Dell driver CAB to create model-specific driver packages for driver injection.

Mistake 3: Underestimating the time and resouces required for application testing and remediation

One of the biggest challenges faced by organizations during a migration is ensuring that their applications work in the new operating environment. Most large enterprises use a wide variety of applications, including legacy applications not optimized for Windows 7 or Windows 8, which will require some remediation or re-packaging for a successful migration. Organizations deploying newerlaptops certainly do not want to buy the computers with a downgrade toMicrosoft Windows XP in order to run existing applications.

Organizations often underestimate the time and effort it is going to take to test, remediate and re-package applications. In Dell's real-world testing, over half of the software packages that worked on Windows XP needed to be remediated so that they would work on Windows 7 (see Figure 1). About 34 percent were already compatible with Windows 7, another 47 percent could be fixed in packaging, and 19 percent with incompatible elements needed to be virtualized or replaced.

In our experience, depending on the complexity of the applications, an experienced packager could test, remediate and re-package around 2-4 applications per day.

Dell utilizes a combination of the Dell ChangeBASE software for comprehensive automated application assessment, remediation and repackaging and the Dell services team to help overcome compatibility problems. ChangeBASE can assess hundreds of applications per day and can automatically convert up to 100 applications per day into standardised Windows Installer packages (MSIs) or into a virtual format.

47%

34%

19%

In Dell's real-world testing, over half of packages that work on Windows XP need to be addressed

Rationalized application library

Compatible with Windows 7

Fix in packaging

Incompatible

Remediation and packaging

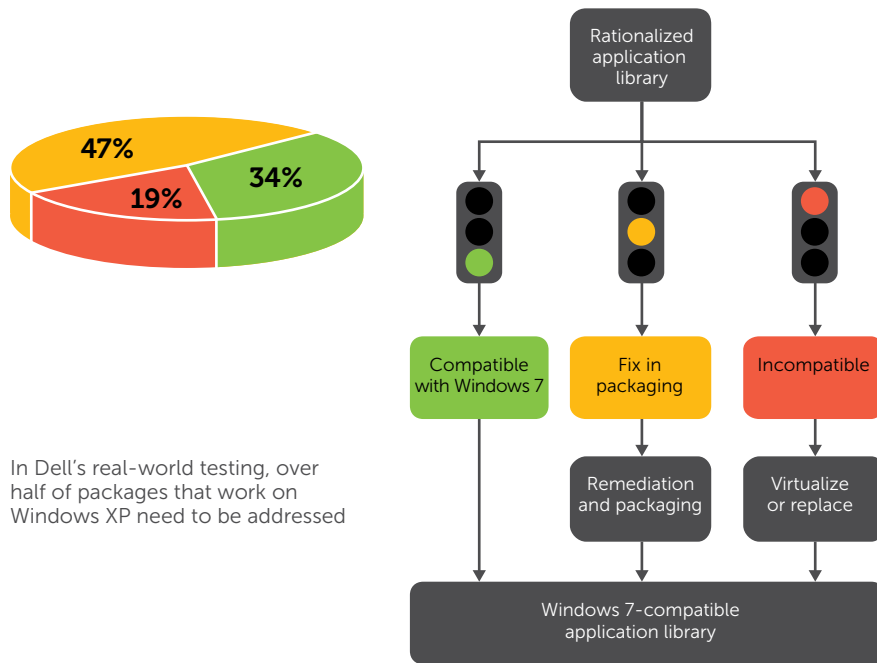Virtualize or replace

Windows 7-compatible application library

Figure 1: Results of Dell application testing for Windows 7 migration

Mistake 4: Performing incomplete application discovery and rationalization

When migrating, it is not unusual for organizations to test only the applications that are known and managed.
But the fact is that many applications in a large enterprise environment are unknown. An organization's Y2K initiative in 2000 may have been the last time IT searched out every application used for business activities. Other applications may be known but unmanaged—these can be rare applications that reside only on a handful of computers, or software requiring extensive manual installation efforts but we have also found that a number of unmanaged applications become core line of business applications that departments are reliant on.

The ultimate goal of migrating applications is to make sure that you only migrate the applications that are used and license compliant. Through proper discovery and rationalization processes and organization can retire around 50% - 90% of their application estate.   This will not only help determine Windows 7 migration success but can also continue to pay dividends following migration by reducing PC support costs.

To ensure completeness, Dell recommends the following steps:

*   Inventory—Leverage a proper software asset management tool to gather information about all applications the in your environment: custom, browser-based, user-installed, and commercial of-the-shelf (COTS) software. Dell has a number of tools such as Asset Manager and KACE
*   Rationalize—Review information gathered on your applications to determine which are still required, which applications are actually still being used, which applications you have licenses for and eliminate any that are no longer needed. Dell reduced its own inventory from over 10,000 applications to fewer than 3,000 during this step.
*   Test and package—Plan the application readiness strategy and identify the tools and resources needed for testing and remediation, whether those resources are available internally or at a third party such as Dell ChangeBASE and Dell Services.
*   Virtualize—Virtualization is becoming increasingly popular and determining which applications can be virtualized is imperative to any virtualization strategy. Also knowing which virtualization technology will work best for your application estate is impossible without an automated tool to help you test your applications against all of the available technologies – Microsoft App-V, VMWare ThinApp, Symantec SWV and Citrix XenApp Streaming Profiler.

Dell can provide tools, assistance, and expertise at each step.

Mistake 5: Not developing a user account control (UAC) strategy

The user account control feature in Microsoft operating systems is designed to help defend PCs against hackers and malicious software, but many Windows XP users found the feature inflexible and intrusive. Any time a program is about to make a major change to the PC, user account control lets the user know about the pending change and requests permission for it.

In Windows 7, user account control is now more flexible and has more granular settings than in Windows XP. Four levels are available: Never prompt, Application change prompt, Application and Windows change prompt, or Always prompt (see Figure 3). Dell helps organizations develop a strategy based on best practices for applying the right UAC security levels to different environments and user categories. For example, employees who may often use unfamiliar applications or visit unfamiliar Web sites should have higher settings that provide stronger protection.

Mistake 6: Using Microsoft Key Management Service (KMS) on the client

The Microsoft Key Management Service (KMS) allows easy activation of Windows 7. However, to reduce user-based administration in favor of centralized PC management and efficiency, activation should be handled by the IT group via server and not by the end user at the client level. Dell recommends the following best practices:

• Use KMS Host keys only on the server (can be a virtual server).

• Configure for initial activation within 30 days.

• Publish the required service record (SRV record) in the Domain Name Server (DNS) defining the location—that is, the hostname and port number—of the server.

Mistake 7: Using virtualization technologies that do not meet desired business goals

Application and profile virtualization can provide major business value and help streamline Windows 7 migration and management. To help ensure success and meet the organization's business goals, however, it is critical to match the technology to the challenge (see Figure 4). Dell offers the following guidance for using virtualization technologies:

- AppV is not designed for OS compatibility.
- If OS compatibility is the only benefit that will be gained from virtualizing an application, it is better to remediate the application instead.

Technology	Good Short Term	Good Long Term	Managed	Resolves OS Compatibility
XenApp	Yes	Yes	Yes	Yes
ThinApp	Yes	Yes	Yes	Yes
AppV	Yes	Yes	Yes	No

Figure 4: Evaluation of virtualization technologies

Using automated tools to help determine what percentage of your application estate can be virtualized and which virtualization technology would be most suited to your application estate is very important for your application virtualization strategy.

Also, if you are looking at a RDSH environment, it is important to know if your applications would be suitable for this environment.

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Mistake 8: Relying on the "usual" deployment strategy and tools

Many organizations are accustomed to using a particular application deployment method that has become familiar to the IT group over time. But for a major OS migration and client refresh, it may be advantageous to go beyond the usual strategy and tools. Planning a Windows 7 migration is an ideal time to review and reassess the "usual" approach.

Based on the experience of the Dell IT group and many Dell customers, a large enterprise organization may need more than one laptop migration strategy. For well-connected campuses and branch offices, Dell recommends using the operating system deployment (OSD) feature of Microsoft System Center Configuration Manager (SCCM) for laptop exchange or for end-user-triggered environments. An offline laptop exchange might be the best approach for poorly connected branches. For remote users, Dell recommends considering self-service.

Ideally, a single automated process will work in all of the above scenarios. An automated solution should be selected based on the size, needs, and existing management infrastructure of the organization. Dell has internal tools such as KACE and has also pre-integrated its onboard client tools with management solutions from a broad ecosystem of partners including Altiris, Microsoft and others for unified, comprehensive management. Building on Dell tools and enablement technologies, organizations can easily follow the path of their choice to increasingly advanced management.

For small to medium-sized organizations, Dell KACE™ systems management appliances provide ease of use and comprehensive management from initial deployment to retirement of systems—without the need for extensive IT resources and staff. For organizations using SCCM, Dell offers extensions for Dell clients. Administrators can use the Dell Client Deployment Pack and Dell Business Client Update Catalog

together with SCCM to automate configuration and deployment of Windows 7, ranging from bare-metal deployments to migration of a user from one PC to another. To help speed the process, the Microsoft Deployment Toolkit (MDT) 2010 with Windows 7 support is Microsoft's solution accelerator for OS and application deployment.

Migration doesn't have to be complicated

Organizations can streamline Windows 7 migration with the right planning, tools, and processes, and the rewards are well worth the effort. Dell migration services can help organizations beat the Gartner estimate on migration of 12–18 months.[1] Reviewing and reevaluating deployment methods as part of Windows 7 migration can result in significant savingsAnd organizations can maximize productivity with optimized clients such as the Dell Latitude Family of Laptops. And organizations can maximize productivity with optimized clients such as the Dell Latitude E-Family, gaining up to 114 percent greater performance with Windows 7–optimized hardware.

An important goal for Dell is to provide open manageability so that any organization can manage Dell clients, and each organization can choose the best management tools for its needs. Dell helps simplify Windows 7 deployment regardless of whether the organization prefers to take a do-it-yourself approach, choose a Dell solution, or continue using an existing third-party solution.

Maximizing migration benefits with the appropriate laptop

Pairing Windows 7 migration with a client refresh based on Dell Latitude E-Family next-generation laptops provides added benefits for enterprise IT organizations and laptop users alike.

Works the way you want.
Windows 7

Go-anywhere productivity

- Long-life batteries that can be charged to 80 percent in an hour with ExpressCharge™
- Multitasking performance with Intel® Core™ processor options, high-bandwidth DDR3 memory, and Intel UMA or NVIDIA graphics
- Integrated HD Webcam and digital array microphone
- High-performance broadband antennae for mobile connectivity
- Increased ease of use and productivity with optional multitouch display
- Optional backlit keyboard for round-the-clock use

Efficient manageability

- Ease of management for laptop fleets, from deployment to ongoing maintenance and support
- Long life cycles and easy transitions, with the ImageWatch™ advance look at software and hardware changes
- Customizable, globally focused service and support options
- Hot-swap media modules: optical drives, hard drives, battery, and USB 3.0
- Convenient single-access door

Built-to-last durability

- Combination of attractive design and durability with brushed aluminum finish, reinforced mag alloy and metal-plated hinges
- Protection from extreme temperatures, vibration, dust, and high altitudes

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- Spill-resistant keyboard and LCD protective seal

- Rugged closing latch and durable powder-coated underside

- Rigorously tested to survive life in the office or on the road

Confident security

- Choice of Dell Data Protection | Encryption and encrypted hard drive options

- Dell Fast Response Free-Fall Sensor and StrikeZone™ to help protect data from unexpected mishaps

- Dell ControlVault™ for helping to control access to data

- Added security with smart card and fingerprint reader login options

Dell Latitude E-Family laptops are preinstalled with Windows 7

For more information

Migrate to Windows 7 With Dell:

http://www.dell.com/learn/us/en/555/windows-8

For more information about ChangeBASE :

www.software.dell.com/products/changebase/

The next-generation Dell Latitude E-series laptop:

www.dell.com/latitude

Or visit the Dell Tech Center for SCCM:

www.delltechcenter.com/page/SCCM+-+System+Center+Configuration+Manager

[1] Gartner, *Prepare for Windows 7 in Three Phases*, ID Number: G00170151, October 1, 2009