Best Practices for Planning Windows 7 Deployment

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Successful migrations to Windows 7 will meet user expectations, are done on time and on budget, and have relatively few problems. Organizations must properly test applications and prepare the environment for the move.

Key Findings

- Windows XP support from Microsoft will end on 8 April 2014, but independent software vendor (ISV) support for new applications running on Windows XP will end sooner. Waiting for Service Pack (SP) 1 to begin planning will delay the project and could cause problems finishing on time.

- Windows XP Mode and Microsoft Enterprise Desktop Virtualization (Med-V) require managing and securing twice as many Windows instances and should be used sparingly.

- The right to downgrade from an OEM version of Windows 7 to Windows XP will end when SP1 ships or in April 2011, whichever comes first for organizations without Software Assurance (SA).

- User Account Control (UAC) can help organizations lock down PCs, but is not sufficient to resolve cultural and political impediments to lockdown.

Recommendations

Organizations should:

- Classify applications and ensure that critical applications will be supported by the application vendor under Windows 7, or that lack of support does not increase risk too much.

- Test Windows and browser applications, especially if applications were written for Internet Explorer (IE) 6, and IE7 or IE8 was not tested or deployed on the existing platform.

- Plan properly for UAC (including classifying users and selling the benefits), 64 bit, and other new features of Windows 7, including technical and cultural ramifications.

- Ensure your budgets for time and money are realistic and allow you to migrate off Windows XP before the end of ISV and Microsoft support.
ANALYSIS

Plan UAC. A big benefit of Windows 7 is UAC. UAC, improved from the Windows Vista release, allows users to run as Standard User instead of Administrator, even when the user is actually an Administrator on his or her PC. UAC can elevate privileges if necessary, prompting the user for acceptance or a password, as defined by IT. Planning entails deciding whether users will be granted Administrator access, and, if so, what notice or authentication will be required. Moreover, if Administrator rights are being eliminated for the first time, organizations must understand that they are making a cultural change that will require educating and convincing users of the benefits, and could cause controversy and backlash, as well as a change in support patterns and requirements. The users need to be prepared, if such a change is being made. While this technology helps resolve technical issues of lockdown, the cultural change will be more challenging to implement than the technical aspects.

Test browser applications. During the past 15 years, many organizations have implemented browser-based applications. While Gartner has long recommended that organizations write to standards and not to the attributes of any specific browser, many organizations have far more IE6-specific applications than they realize. IE6 is a very nonstandard browser platform, and organizations with applications written specifically for IE6 may find they fail with Windows 7. We have seen failure rates of up to 40% for homegrown browser applications at our clients’ sites. Further, applications that run on IE7 or IE8 on Windows XP could still have problems running on IE8 on Windows 7, because IE has fewer rights when running on Windows 7 than when it runs on Windows XP. Organizations must differentiate between (generic) browser applications and ones that are specific to certain browsers.

Understand ISV support. There are two components to application compatibility: (1) Will the application run on Windows 7? and (2) Will the ISV support the application or particular version running on Windows 7? For applications of average importance, the former is probably sufficient to know. But for critical applications that could result in legal or financial loss if the applications fail, ISV support of the application on Windows 7 may be required from a risk mitigation perspective.

Organizations need to:
- Segment applications based on criticality.
- Understand how many and which users require the critical applications.
- Schedule migrations around the date the ISV of the latest critical application is slated to deliver a Windows-7-supported version of its application.

Involving the users. Most IT organizations do not have the staffing or detailed knowledge to test every application in the environment. Most organizations delegate application testing to the end users who run the applications on a day-to-day basis. This requires:
- Getting buy-in from the business managers.
- Providing users with Windows 7 PCs (physical or virtual) on which to do the testing.
- Scheduling any assistance required by the users.
- Creating a formal sign-off process to be used to document testing and acceptance.

An end date should be provided to the users by which they must complete testing and sign off. Other ways to involve the users include enlisting users who have already been using Windows 7.
in the enterprise (usually installed on their own) to understand their findings and add them to the collective knowledge and project plan.

**Set a target end date for before Microsoft ends XP support.** Extended Support for Windows XP will end on 8 April 2014, including availability of technical support and the delivery of security fixes. (Mainstream Support, which also provides fixes for nonsecurity problems, ended on 14 April 2009.) Organizations running Windows XP after that date will either need to evaluate alternatives for keeping those PCs secure (see "Cost Cutting: Securely Extending the Life of Out-of-Support Systems" and "Plan for the End of Support of Windows 2000") or pay Microsoft a minimum of $200,000 for the first year of Custom Support, which delivers fixes to critical security flaws.

However, there are two reasons organizations should set a target end earlier than 8 April 2014:

1. It is likely that ISVs will commonly refuse to support Windows XP for new versions of applications they deliver in 2012 (and some will cease supporting Windows XP for new versions of their applications in 2011). Therefore, to run new versions of certain critical business applications in 2012 and 2013, users will need to be off Windows XP, and organizations will be able to reduce their risk by ensuring that their migration to Windows 7 will be well under way.

2. Migration projects often run late, delayed by technical issues or funding decreases caused by weak business or a weak economy. If organizations set an early date for elimination of Windows XP (for example, year-end 2012 or mid-2013), and if they run late, then at least Windows XP will still be supported with security fixes for a few more months.

**Budget enough time for application testing.** Most organizations will not test every application or combination of applications under Windows 7, but they will test the most important and most common applications. Anytime an application that was not tested fails, it leaves the user frustrated and less productive and makes the whole project look less successful. Organizations need to budget sufficient time and money to test the appropriate number of applications. If the budget is too small (in time or money), then they will either look bad going back for more money or delaying the project, or they will reduce the amount of testing, which could increase project risk and decrease project success significantly. Organizations should consider products from vendors like AppDNA and ChangeBase, as well as Microsoft Application Compatibility Toolkit (ACT), to help test and remediate applications faster and test a greater percentage of applications.

**Plan properly for 64-bit applications.** Most 32-bit applications will work fine when running on 64-bit Windows 7. But 16-bit applications will not run at all, and drivers need to be 64 bit and signed (see "Plan to Implement Some 64-Bit Versions of Windows 7"). Organizations on an aggressive Windows 7 deployment schedule may not have time to fully test their applications or drivers, and thus may not have a complete list of applications or devices that need to be replaced. They may want to plan to deploy 32-bit Windows 7 in 2010 and early 2011; once they have time to do proper analysis and testing, they may want to switch to 64 bit for PCs deployed after analysis, testing and remediation have been done. Organizations with more-comfortable deployment plans should include this analysis and testing in their plans so they can deploy 64-bit Windows 7 with greater confidence.

**Avoid deploying too much XP Mode or Med-V.** Microsoft has positioned Windows XP Mode (free for users of Windows 7 Professional, Ultimate or Enterprise) and Med-V (included in Microsoft Desktop Optimization Pack [MDOP]; see "Quantifying the Value of Microsoft's Desktop Optimization Pack, 2009-2010 Update") as compatibility mitigation tools so that Windows 7 can be deployed, and applications that require Windows XP can be run in a native environment on top of Windows 7. The challenge is that Windows XP and Med-V involve deploying an extra Windows environment on each PC on which it’s run, thus effectively doubling the number of Windows
instances that need to be secured and managed, a situation few organizations want. Unless the application that requires Windows XP will be retired before Windows XP support ends (8 April 2014), the application will eventually need to be fixed. XP Mode and Med-V are best used if limited to a small number of PCs for applications that will be decommissioned before 8 April 2014. Other applications should be tested and fixed or replaced with Windows 7 compatible versions.

**Don't delay starting.** Many organizations have the habit, or even a policy, of waiting until SP1 is available before they start work on a new operating system. This has the effect of delaying the entire project, and in a situation where there is a real end date needed due to support ending, it adds risk. Organizations should, at the very least, be working with vendors and conducting project planning now, even if they are waiting for SP1 for their production deployment (see "Windows 7 Won't Need SP1, but Will Still Need 12 to 18 Months Before Deployment Begins").

**Plan PC purchases to minimize upgrade license expenses (if no SA).** Organizations that do not have SA on Windows generally try to minimize the number of Windows upgrades they need to purchase to save money. This is done by relying on their PC refresh strategy to account for the vast majority of licenses they will need for the project. In the case of Windows 7, understanding Microsoft's policies and planning PC purchases around them is imperative. For organizations that have deployed some Windows Vista, at least on new PCs, this is less of a problem, because any new PC purchased at anytime with Windows 7 (Professional or Ultimate), preloaded may be downgraded to Windows Vista and upgraded back to Windows 7 when the organization is ready.

For most organizations that skipped Windows Vista, Microsoft's limited downgrade rights to Windows XP will make the acquisition of new PCs that can be downgraded to run Windows XP initially and upgraded back to Windows 7 at no extra charge will make them plan their PC orders very carefully. PCs shipped with Windows 7 can only be downgraded to run Windows XP until Windows 7 SP1 ships (or by April 2011, whichever comes earlier).

We expect SP1 to be released in 3Q10. This means that organizations should order PCs needed for Windows XP before that time frame. Any PCs ordered after SP1 ships, but before the organization is able to deploy them running Windows 7, will need to be put under SA or will need to purchase a Windows 7 upgrade to get the rights they need ($120 to $200 per PC). Therefore, to minimize costs, organizations need to avoid buying new PCs after SP1 availability until the organization can deploy them running Windows 7 (see "Microsoft's Limited Windows 7 Downgrade Rights Will Cost Many XP Organizations Money").

**Don't let Office 2010 put your Windows 7 migration at risk.** Windows 7 has been available to organizations since release to manufacturing (RTM) in July 2009, but Office 2010 is still not available and (as of this writing) still does not have a firm ship date. Once Office 2010 ships, most organizations will need at least 12 months for testing before they start deploying it. Many organizations are saying they want to do a combined Windows/Office 2010 project in 2H10 or 1H11. This may mean that they will not have sufficient time to test and prepare for Office 2010 before they start the project. Deploying a new version of Office along with a Windows upgrade makes a lot of sense, because Office is a large application and Windows is usually deployed by reimagining PCs; from a deployment perspective, this means that no version of Office is easier or more difficult to deploy than any other. However, if organizations run into unexpected problems due to lack of testing Office 2010, then those problems will delay or defame the Windows migration.

Organizations that are planning to start their Windows 7 production deployments early should either join Microsoft's formal beta program to ensure they get the details and attention they need, should plan to use Office 2007 instead, or should delay the whole project until both Windows 7 and Office 2010 can be properly tested.