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Assessing Your Organization's Readiness for Windows® 7

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Introduction

The advent of a new operating system in any organization is inevitably disruptive to some degree. However, some organizations manage the transition in a calm, planned, and reasoned manner. Others may fall a bit more into the frenzied and frazzled category! Readiness assessment goes a long way to lower everyone's blood pressure and minimize unpleasant surprises.

There has been great interest in the subject of Windows 7 in recent months, perhaps most strongly from organizations that passed over Windows Vista and are looking at a migration from Windows XP. When coming from XP, there is a much greater likelihood of potential issues in terms of hardware and software compatibility. Organizations upgrading from Vista have far fewer such concerns: Vista is newer than XP, true, but beyond that, Windows 7 leverages the Vista device driver model, and Microsoft has stated that applications that work on Vista will generally work on Windows 7. Even shops migrating from Vista have some readiness concerns, however, and would like to be confident of a successful migration before actually deploying Windows 7.

Microsoft has provided some resources and tools that can help. (A guide to some of these resources is available from Microsoft in the form of the "MOF Action Plan – Release Readiness for Windows 7," a free PDF on Microsoft's website. MOF, by the way, stands for Microsoft Operations Framework.) This white paper takes an introductory look at some of them, and makes some suggestions for evaluating your organization's readiness for Windows 7 on the client.

- Hardware Compatibility Documentation
- Windows 7 Upgrade Advisor
- Microsoft Assessment and Planning Toolkit
- Application Compatibility Toolkit
- Other Aspects of Readiness
- The Human Side: Training Resources

Hardware Compatibility Documentation

One of the big issues in any operating system migration is hardware compatibility, and the first thing to check is the minimum requirements document published by Microsoft (which you can find, as of this writing, at <http://windows.microsoft.com/systemrequirements>). Basically you need at least a 1 GHz CPU, at least 1 GB of RAM on a 32-bit system or 2 GB on a 64-bit system, and 16 GB (32-bit) or 20 GB (64-bit) of free disk space, as well as a

DirectX 9 graphics card running a WDDM 1.0 or newer driver. (The amount of video RAM you'll need depends on whether you want to run the AERO environment, but consider 128 MB a practical minimum.) There are other issues depending on the feature set you want to use. For example, if you want to run Windows Touch, you'll need a touch-screen display.

So much for minimum requirements. What about compatibility with other hardware – printers, network cards, and so forth? The Windows 7 Upgrade Advisor, discussed in the next section, can help. But the published documentation you should review is the Windows Logo'd Products List, which you can find at this writing at <http://winqual.microsoft.com/HCL>, which is the successor to the old HCL sites of yore (HCL standing for Hardware Compatibility List). At this site (see Figure 1), you can select your operating system from three tabs (Windows 7, Windows Vista, and Windows XP); choose whether you're looking for devices or systems; pick your processor architecture (x86 or x64); and optionally, a category (for example, if you're looking for devices, you could choose network cards, printers and scanners, etc. – and if you're looking for systems, you could choose motherboards, PCs, mobile systems, etc.).

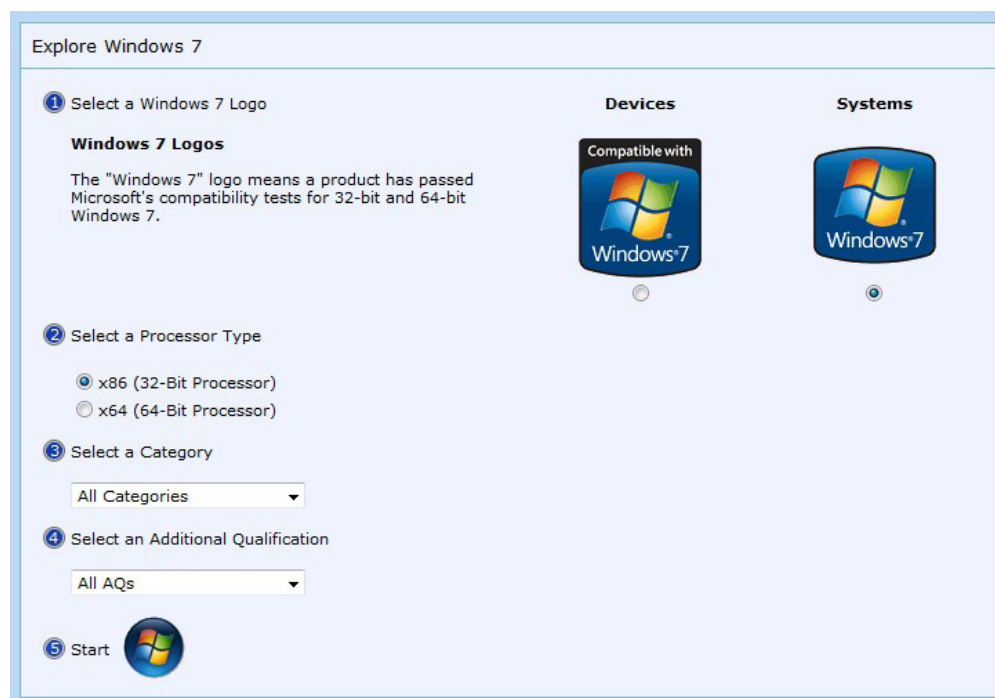


Figure 1: The Logo'd Products list identifies products that have passed Microsoft logo requirements.

The Logo'd Products List only tells you about products that have passed Microsoft's logo requirements, but the world of compatible hardware is much broader than that. Microsoft maintains the Windows 7 Compatibility Center (see Figure 2) at <http://www.microsoft.com/windows/compatibility/windows-7/en-us>. This is similar to sites Microsoft has maintained in past years for Vista and XP. Here you can find out whether even non-logo'd products are compatible with Windows 7.

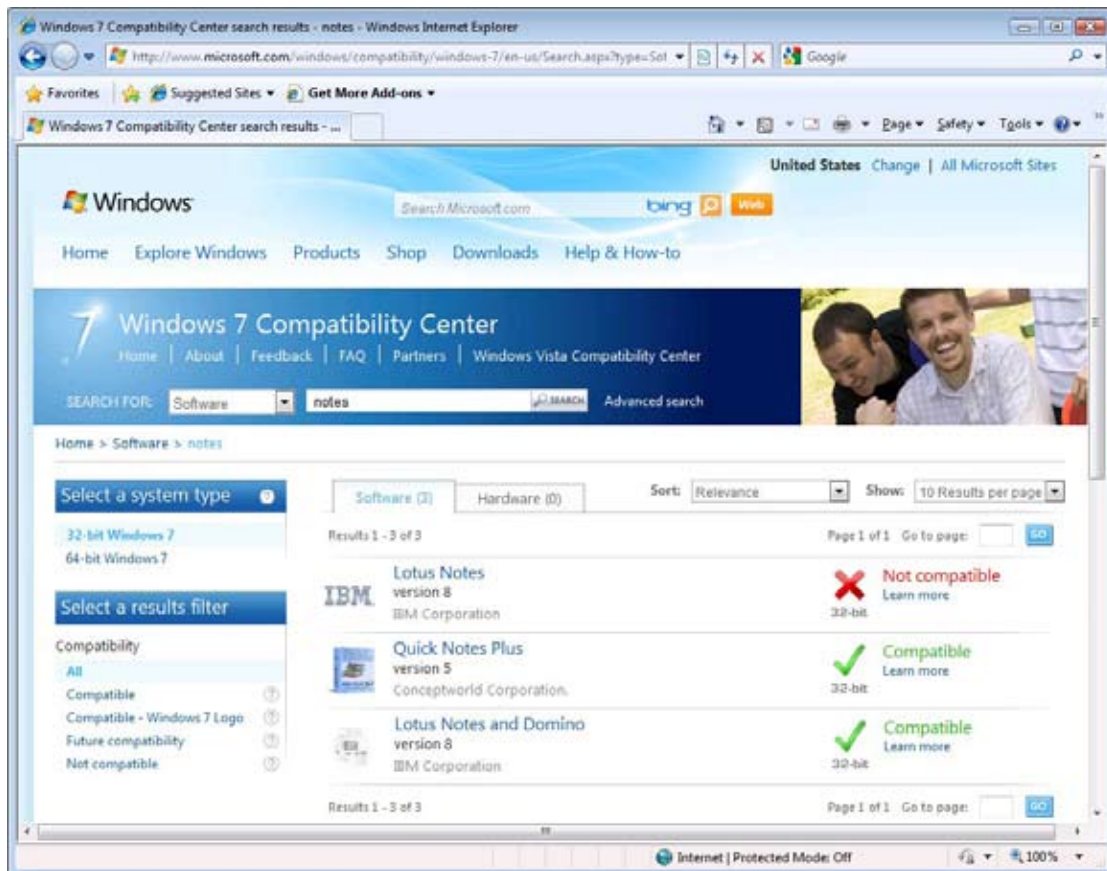


Figure 2: The Compatibility Center goes beyond the Logo'd Products list.

Windows 7 Upgrade Advisor

If you ever used the Windows Vista Upgrade Advisor on an XP system, then the Windows 7 Upgrade Advisor will be familiar territory for you. It's a free download and the install is relatively speedy. Designed to work on a single machine – for example, a “typical” workstation or a corporate-standard image – the Upgrade Advisor identifies hardware and software issues that may need attention from the readiness standpoint.

There are a variety of types of advice that this tool can provide. The System category will tell you whether you can perform an in-place upgrade or must do a fresh install (“custom installation” in Microspeak); it will advise you of programs you may have installed from previous versions of Windows that no longer come bundled with Windows 7 but that you can download separately; and whether your machine passed the basic minimum hardware requirements (see Figure 3).

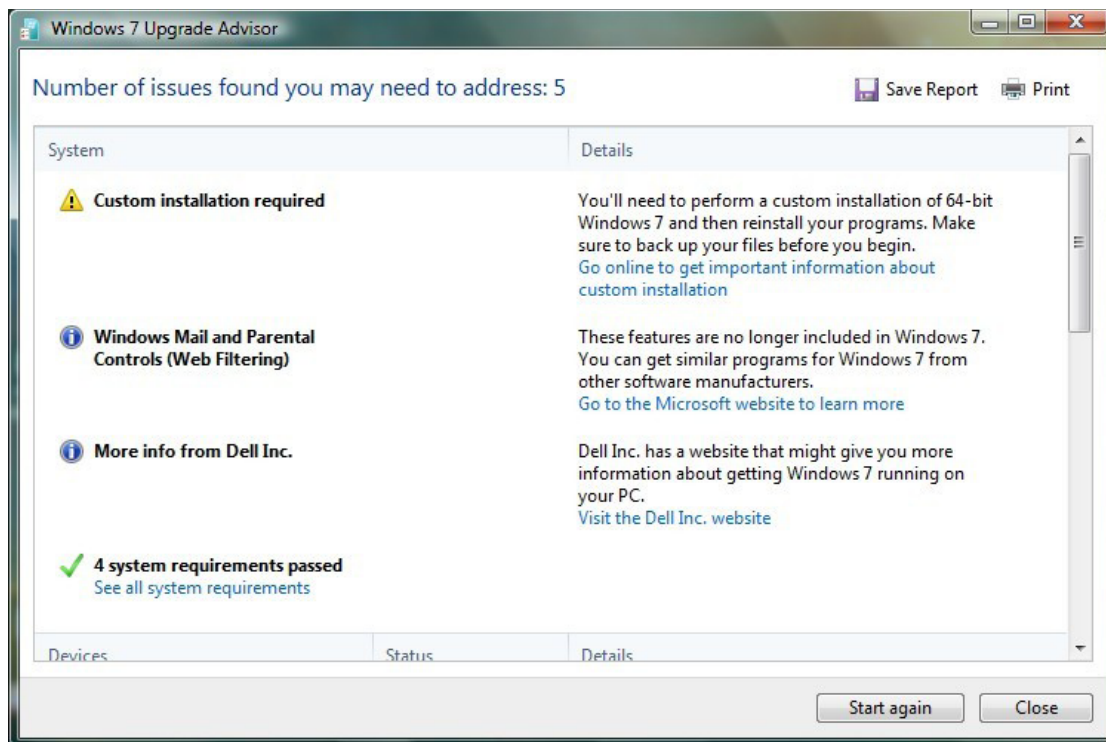


Figure 3: The System section of the Windows 7 Upgrade Advisor.

The Devices section will try to confirm devices that are compatible as is, or that may need a new driver after the Windows 7 installation. The Programs section will advise you of known problems; if the Upgrade Advisor isn't sure about a particular version of a program, it will suggest an update to a known-compatible version if one is available, either from Microsoft or an Independent Software Vendor (see Figure 4).

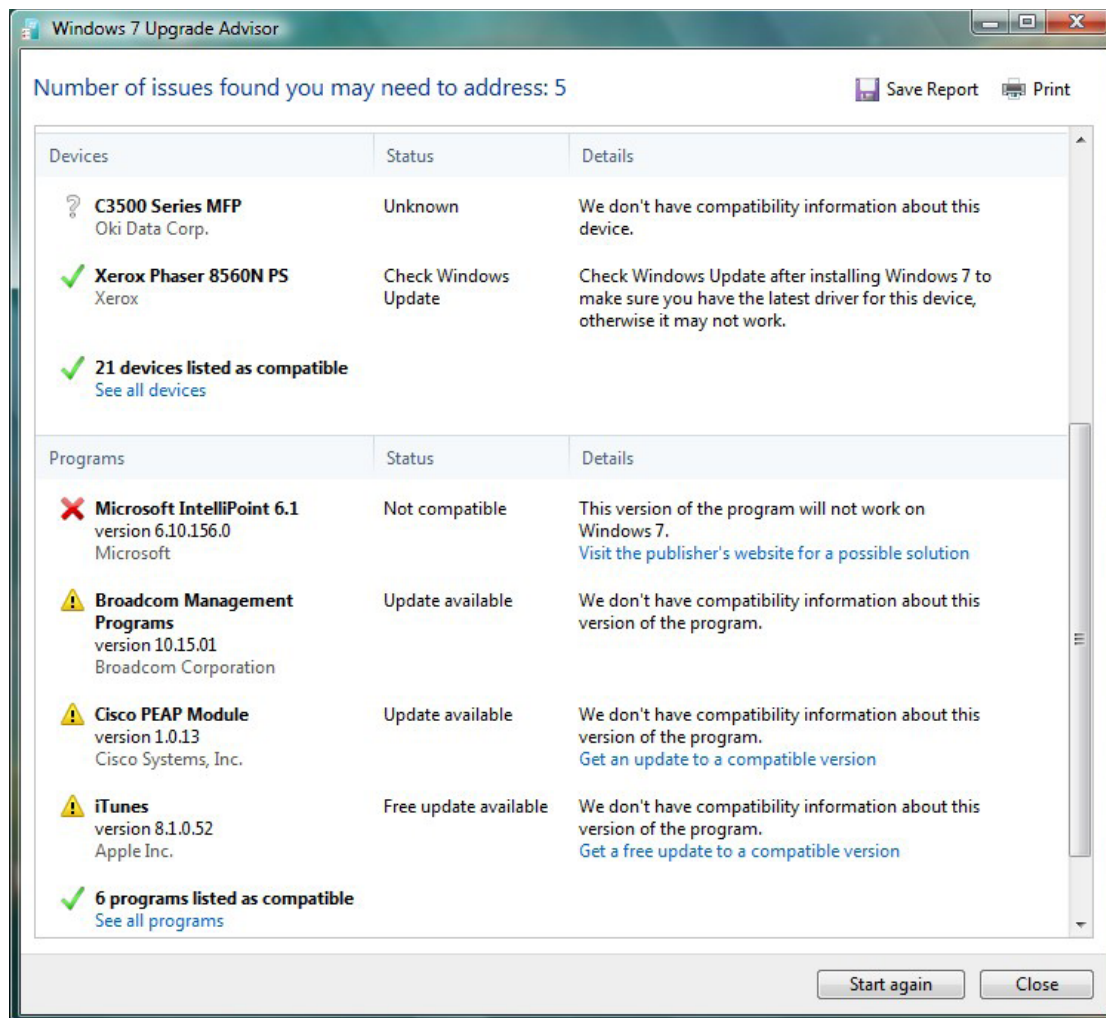


Figure 4: The Devices and Programs sections of the Windows 7 Upgrade Advisor.

One potential concern with running this tool is that it sends information about the computer it's running on to Microsoft. More specifically, Microsoft states that it collects information about the "capabilities of your computer hardware, the devices connected to your computer, and the applications installed on your computer." (You can read the entire agreement at <http://windows.microsoft.com/en-us/windows/downloads/upgrade-advisor-privacy>.) Microsoft uses the information to send you the Upgrade Advisor report and states that none of it will be used to identify or contact any individuals.

If you decide to run the tool, you should connect any devices such as USB drives, scanners, cameras, PDAs, etc. so that the Upgrade Advisor report will be as complete as possible, because it scans connected devices during the data collection phase. I find that this phase typically takes between two and four minutes, although your mileage may vary.

Microsoft Assessment and Planning Toolkit

If you happen to have decided on Windows 7 Enterprise Edition, Microsoft has a special toolkit designed just for you: the Microsoft Assessment and Planning Toolkit for Windows 7 Enterprise (or **MAP Toolkit** for short – see Figure 5), currently in version 4.0 with version 5.0 in beta as this is written. This is one of several MAP toolkits (others exist for Server 2008 R2, Vista, SQL Server 2008, Office 2007, and others). All are examples of what Microsoft calls “Solution Accelerators” – broadly speaking, collections of tools (such as scripts, consoles, help files, databases, etc.) that help organizations deal with especially complex issues.

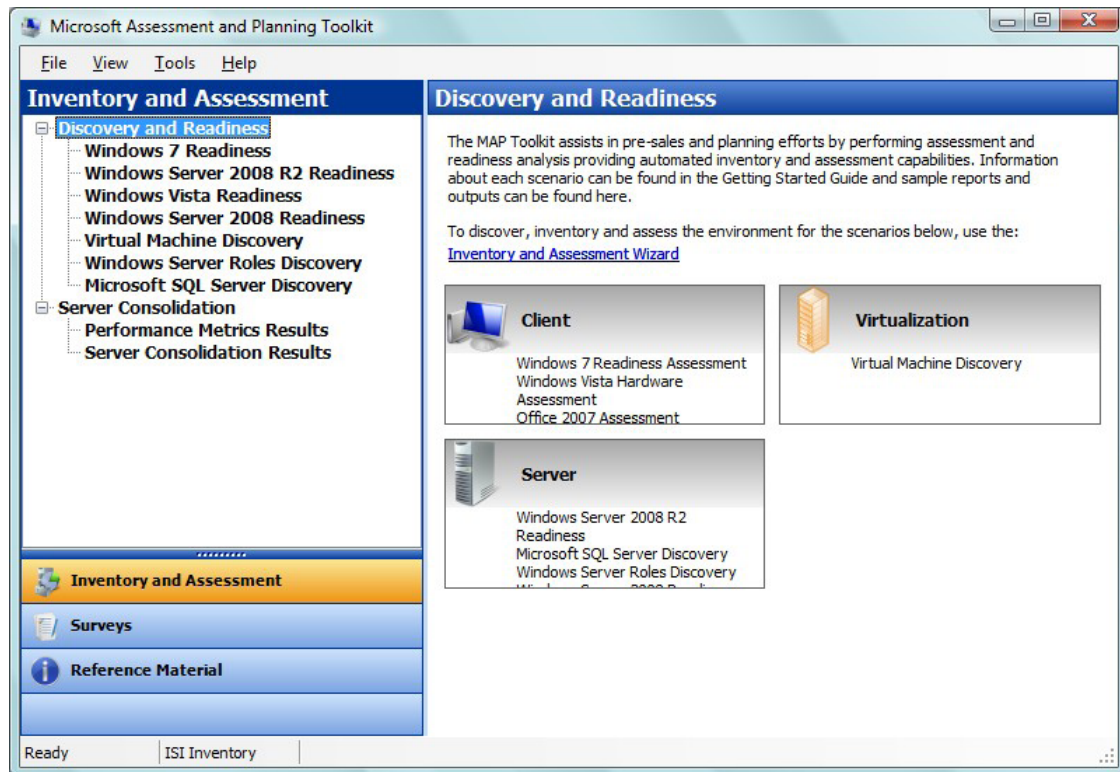


Figure 5: The MAP Toolkit looks at hardware, operating systems, and devices.

The download is free, but it has a laundry list of prerequisites: .Net framework, Windows Installer version 4.5, .Net Framework 3.5 SP1, Microsoft Office, machine can't be a domain controller, and so forth. The installer will also try to download and install SQL Server Express if you don't already have it on the system, but this often bombs out in my experience, so I suggest downloading SQL Server Express separately ahead of time.

The MAP Toolkit takes inventory of what you already have, performs hardware and software compatibility analysis (operating system and device drivers but not applications), lets you know what antivirus and antimalware products are running on all those systems, and reports the results, in .DOCX and .XLSX formats (so if you're running Office 2003, you'll need those compatibility filters installed).

In the IT world, we've become conditioned to think of inventory tools as requiring special agent software to be running on all systems to be inventoried, à la SMS 2003, for example. However, the MAP Toolkit gathers inventory without requiring agents, using Windows Management Instrumentation (WMI) queries along with other tricks such as the Remote Registry service. (WMI is likely to be running on all of your Windows systems, but if you disable the Remote Registry service for some or all of your systems, then that may affect the toolkit's ability to get the data it wants.)

(By the way, after you've explored the MAP Toolkit in the context of Windows 7 readiness, you may also want to explore what it can do for you in the areas of server performance, server consolidation, and virtualization.)

Application Compatibility Toolkit

The MAP Toolkit is handy for performing inventory of your operating systems and hardware for readiness analysis, but what about applications? There is a laundry list of potential application compatibility issues associated with Windows 7. User Account Control, for example, forces even users with administrative credentials to run applications as a standard user. Windows 7's NTFS security is considerably tighter than Windows XP's; those accustomed to storing data in the Program Files folder are in for a rude awakening. Registry keys have more restrictive access controls in many cases, too. A number of utilities and DLLs have been "deprecated" in Windows 7, meaning that they may not work for applications that depend on them. Then there's the issue of application compatibility with a 64-bit platform, if you're planning to use the 64-bit version of Windows 7. The list goes on and on.

For application readiness, Microsoft offers the old warhorse, the ACT (Application Compatibility Toolkit), appropriately freshened (version 5.5 is current as of this writing). This is a blockbuster tool that lets you build a database of applications, perform a battery of compatibility tests, and build "shims" that you can deploy throughout your organization to address application compatibility problems.

Unlike the MAP Toolkit, the ACT requires that you deploy a "Data Collection Package" to the systems from which you want to gather inventory information. If you don't have System Center or SMS, there are other ways to accomplish such a deployment, such as logon scripts, or Group Policy-based software distribution; but the ACT can't just make WMI queries to get the data that it needs.

The ACT also comes with a variety of tools that you can use to test applications that don't appear in its pre-populated database, including applications you may have had built custom for your organization. These tools include the following.

- The Standard User Analyzer
- The Setup Analyzer Tool
- The Internet Explorer Compatibility Test Tool

When you complete your analysis with ACT, you can use the Compatibility Administrator to generate a database of fixes that deal with the problems you've identified. Then you can distribute the fixes to all the appropriate computers in your organization, for example, through logon scripts, or via Group Policy.

If the ACT seems like it might be overkill for your organization, you may want to first look at the free “Windows 7 Application Compatibility List for IT Professionals” in the Microsoft Download Center. This is a spreadsheet that ranks applications according to the following categories: compatible, free update required, paid update required, future compatibility, and not compatible. If that’s all the information you need, you don’t have custom applications, and your commercial applications are listed in the spreadsheet, you may not need to go through the time and effort of learning the ACT.

Other Aspects of Readiness

In a decision that has caused approximately ten zillion additional bytes of traffic on the blogosphere, Microsoft chose not to provide an in-place upgrade path from Windows XP to Windows 7. That may or may not have a big impact on most organizations, because the conventional wisdom for years has been that it’s better to do clean installs of any Microsoft operating system versus an in-place upgrade. In any case, you’ll have to assess your readiness to deploy Windows 7 to existing or new hardware, and migrate user settings (profiles, data files, etc.) from the old environment to the new one. (This will be a lot easier if you’ve used folder redirection in the past.) But the deployment and migration tools (such as the Windows Automated Installation Kit and User State Migration Tool) deserve your time. You’ll also want to consider security, new Group Policy settings, synergies with Server 2008 R2, script compatibility, administrative tools (ADMINPAK is out and RSAT – Remote Server Administration Tools – is in), and licensing issues. And let’s not forget the human side of readiness – specifically training – which we look at briefly in the next section.

The Human Side: Training Resources

The human side of readiness has to do with training both users and technicians on the new aspects of Windows 7. Ideally, you’d like your users, IT staff, hardware, and software all ready for Windows 7 at the same time!

Of course (warning: shameless plug alert), Global Knowledge has a number of seminars that can help, both custom classes and Microsoft Official Curriculum classes. In addition, there are a number of resources you might find helpful in getting the human side of your organization ready for Windows 7. Here are a few to get you started.

A couple of books (remember books?) might be useful. The ones I like best so far of the ones I’ve seen are the Windows 7 Resource Kit (Tulloch, Northrup, and Honeycutt, Microsoft Press) and the Windows Administration Resource Kit (Holme, Microsoft Press). Both are really more suitable for administrators and support staff than for end users.

Magazines and their associated websites can be good sources of information for training, especially for administrators and planners. Windows IT Pro, TechNet Magazine, and Network World are ones to check.

I often find Microsoft’s “changes in functionality” documents to be useful when planning training on server topics; however, the company has not yet created such a document for Windows 7, at least not that I’ve found. Microsoft has built a good web page (<http://windows.microsoft.com/en-US/windows7/products/features>) that gives a pretty comprehensive list of what’s new with Windows 7 (Figure 6). If you’re planning training for users, this would be an excellent place to start.

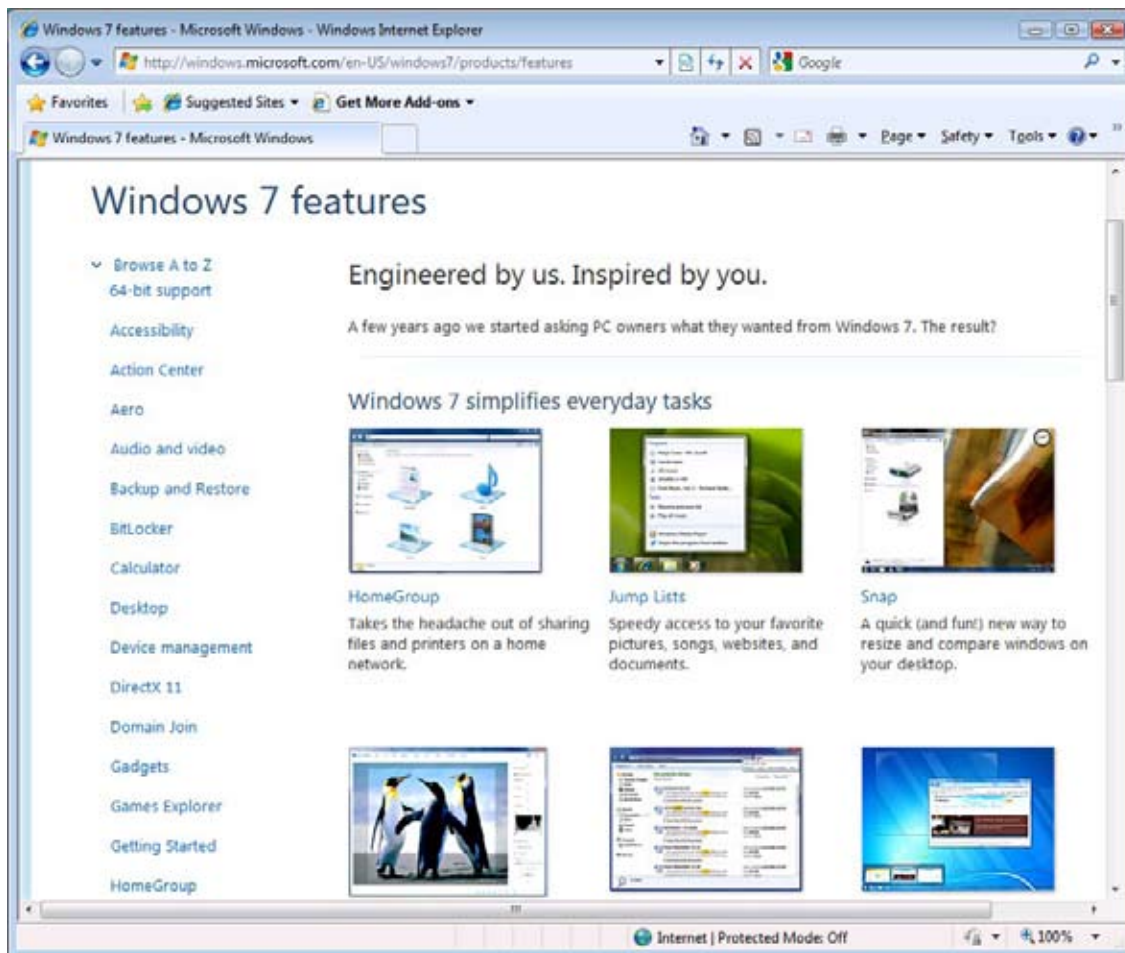


Figure 6: Looking at what's new in Windows 7 - alphabetically.

Tips-and-tricks documents are often handy because they dispense knowledge in easily digestible bite-sized chunks. For example, if you have access to the Microsoft Partner Network, you may want to download the Windows Tips and Tricks ZIP archive from <https://partner.microsoft.com/40101540>. There are some nuggets here that you can share with others in the organization, and the archive is growing. Some magazines also have collections of tips-and-tricks. Gather them and share them – but do consider first whether some might do more harm than good. (Registry hacks often fall into the former category!)

Conclusion

If you're moving to Windows 7 from Windows Vista, you shouldn't have many problems compared to most operating system migrations. Windows 7 works with most Vista device drivers and applications. Still, it's worth taking the move seriously and doing the same level of testing and planning that you would for a more radical migration.

If you're moving from the Windows XP environment, your life will be more challenging, but the tools that Microsoft has provided can identify most of the issues ahead of time, so you can research them and plan for workarounds.

While the various websites, the Windows 7 Upgrade Advisor, the Microsoft Assessment Planning Toolkit, and the Application Compatibility Toolkit are all worthwhile resources, don't forget the human element. Users may be confused by some aspects of the user interface, and administrators will have to wrestle with changes on the back end. End-user documentation and support-staff documentation will need revising and a mix of resources (Web resources, instructor-led training, Web-based training, tips-and-tricks documents, etc.) will help your organization's technical and non-technical staff make the transition to Windows 7 more like a comfortable step forward than a scary leap of faith.

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About the Author

Glenn Weadock is a long-time instructor for Global Knowledge and teaches Windows Server 2008, Active Directory, Vista, and Windows 7 courses, among others. He also consults through his Colorado-based company Independent Software, Inc., works occasionally as an expert witness in IT-related lawsuits, blogs for *Network World* online, and is the author of 18 computer books.