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# Windows 7 Review Guide

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Glenn Weadock, Global Knowledge Instructor, MCITP, MCSE, MCT, A+

## Introduction

Microsoft operating systems have been a “variable quantity” ever since I started working with them back in the Cretaceous Era. DOS 3 was good; DOS 4 was a clunker. The same variability held true with Windows: Windows 98 was good, Windows ME was a clunker. Then Microsoft put together back-to-back winners with Windows 2000 and XP, and some industry observers thought that the operating system rollercoaster ride might have smoothed out at last.

But it was not to be. I can’t quite bring myself to call Windows Vista a dud, because many aspects of its design (such as the revised administrative tools) show a welcome maturity and thoughtfulness; but the product did not receive much love in the marketplace. If you are Microsoft, you know that you’ve got a problem when even Intel does not adopt your flagship OS for internal use. Microsoft’s attempts to shine up Vista’s image through the “Mojave Experiment” TV commercials may have changed a few consumer minds, but corporate IT planners in droves decided to stick with good old Windows XP, notwithstanding the fact that Microsoft ended mainstream support for that OS on April 14, 2009. (This means that all XP support now costs money, except for security updates, which will continue through 2014.)

Based on my experience with the beta code, Windows 7 just might change their minds. It incorporates many of the best features of Vista while fixing many of its worst features. It’s a bit of a stretch for Microsoft to give it a new name: it’s really closer to “Vista R2” than anything else, in that it’s more than a service pack but less than a new product. (Microsoft execs say that it uses the “same core architecture;” Gartner Group calls Windows 7 a “polishing” release.) But we won’t quibble about the name too much. This product looks and feels better than anything Microsoft has released in years.

This white paper introduces the key areas in which Windows 7 differs from Vista—areas you’ll need to focus on if you’re thinking of moving to Windows 7, either from Vista or from XP. Use it as a starting point for your own evaluation research. The areas I focus on here include the following.

<ul style="list-style-type: none"><li>• Deployment</li></ul>	<ul style="list-style-type: none"><li>• Security</li></ul>
<ul style="list-style-type: none"><li>• Hardware support</li></ul>	<ul style="list-style-type: none"><li>• Ease of use</li></ul>
<ul style="list-style-type: none"><li>• Speed</li></ul>	<ul style="list-style-type: none"><li>• Manageability</li></ul>
<ul style="list-style-type: none"><li>• Robustness</li></ul>	

## Deployment

**Versions.** Windows 7 will apparently have the same version structure as Vista, with the exception that “Vista Business” morphs into “**Windows 7 Professional**” (could Microsoft be trying to make Windows 7 sound more like XP here?). There will be the 32-bit **Starter** edition for developing countries; **Home Basic** (no AERO, maximum 3 apps at once); **Home Premium** (with AERO, Media Center, and DVD software); **Professional** (which can join a domain and use EFS but not BitLocker); **Enterprise** (volume licensing only, offering a number of features that work together with Server 2008 R2); and **Ultimate** (a consumer version of Enterprise).

**Software compatibility.** Windows 7 should run applications that work with Vista, and the converse is likely also true: if an app does not run on Vista, chances are slim that it will run on Windows 7. The Application Compatibility Toolkit (ACT) will be available for Windows 7, no doubt with yet another freshening and new version number.

**Tools.** You may remember the Business Desktop Deployment 2007 tool, known as the BDD 2007, which included a number of tools and help files for rolling out Vista. That product morphed into the Microsoft Deployment Toolkit (MDT) in 2008, and rumor has it that Microsoft will roll out an updated version (MDT 2010?) after the Windows 7 launch.

This is an area where Microsoft could make some serious steps forward in usability – the tools are a morass of finicky, standalone utilities with harrowingly long command-line syntax – but the underlying technologies of Windows Image files (\*.WIM) and WinPE are solid enough and will probably see only minor enhancements. If you have spent any time with ImageX, DiskPart, WinPE, WinRE, the WAIK, and (on the server side) Windows Deployment Service (WDS), then you should be well-versed on the deployment toolkit.

## Hardware Support

**Minimum requirements.** Looks like these will be very close to those of Vista, if not identical. Microsoft is probably not keen to repeat the customer ire that it aroused by making Vista’s hardware requirements (especially in the graphics area) so much more demanding than XPs.

**Device drivers.** Because Windows 7 is really a revision of Vista, it will support the vast majority of Vista device drivers. I even tried some XP printer drivers on my Windows 7 beta, and they seemed to work just fine. We will probably not see the sort of driver availability problems we saw when Vista debuted, and that roused the ire of so many Vista early adopters. I expect Windows 7 to have excellent hardware compatibility. It certainly seemed to work fine with the hodgepodge of scanners, cameras, and external storage devices I have lying around my office. Microsoft has stated, however, that Windows 7 won’t support Blu-Ray devices.

**32-bit hardware is OK.** Actually this was something of a surprise to me; with Server 2008 R2 moving to a 64-bit-only world, I thought that Vista would be the last OS from Microsoft that would run on 32-bit-only hardware. Apparently, the marketing gurus decided that there are still lots of 32-bit systems out there.

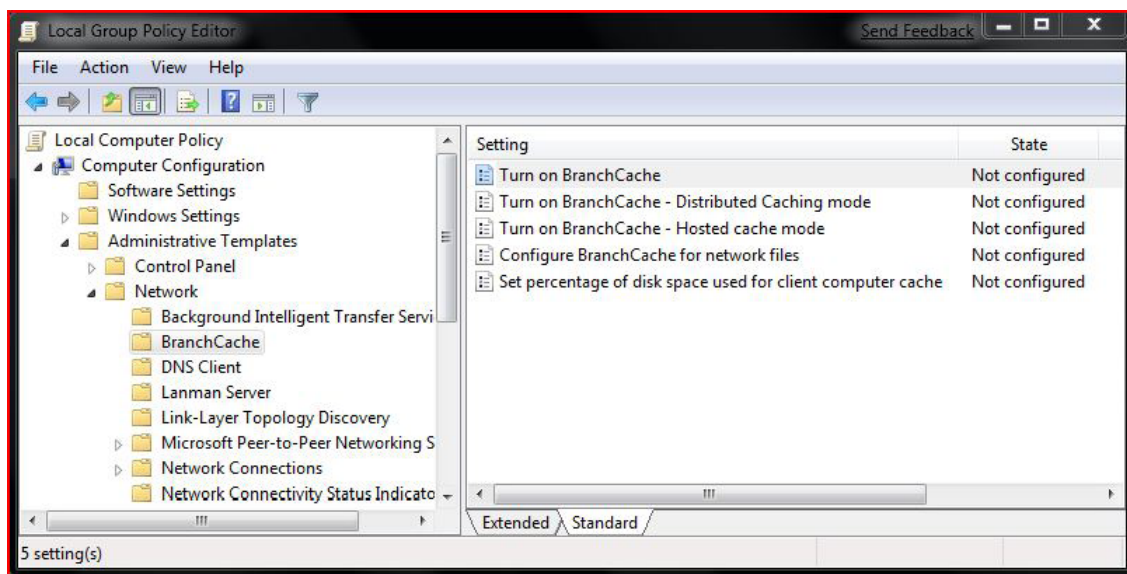
## Speed

I've long felt that the biggest single factor affecting customers' negative perception of Vista is that it's so slow performing common, basic operations such as copying files, creating archives, displaying menus, etc. InfoWorld famously did some benchmark comparisons with XP that made Vista look, well, sick. And while it's not entirely fair to say that Vista is slow in everything—for example, its TCP/IP stack is noticeably more efficient than XP's, in my experience—Vista can be so slow in simple operations that it's maddening.

The good news is that somebody at Microsoft listened to the performance criticism, because Windows 7 really moves. The boot process is noticeably quicker; according to Microsoft, this is because Windows 7 loads device drivers in parallel rather than serially.

I don't get quite the feeling of instantaneous response that I remember from using old text-based applications—the ancient XTree file manager was far faster than any version of Windows Explorer—but compared to Vista, Windows 7 is fast. It's too early to do any formal benchmarking as I write this, but I would be amazed if Windows 7 would lose out to XP in any performance category.

As far as network speed goes, one new feature, the so-called "BranchCache," attempts to speed up network searches by using intermediate servers to cache content stored on central servers (see Figure 1). There are both pros and cons to this approach, but you can control it via Group Policy. This is a feature only available with Server 2008 R2.

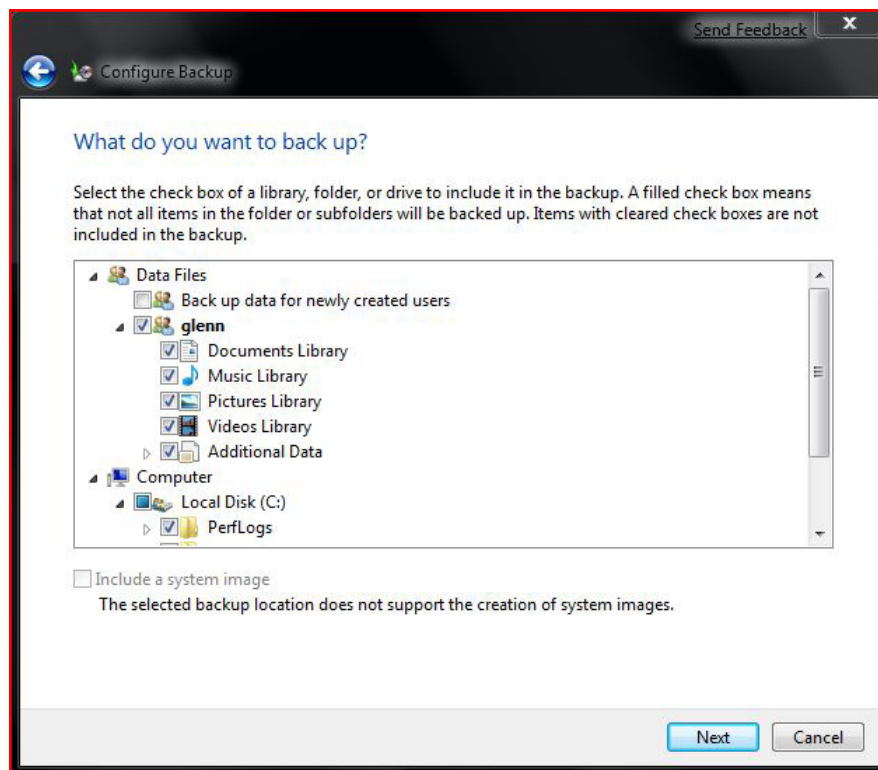


**Figure 1: Group Policy lets you configure BranchCache settings.**

## Robustness

**Stability.** It is folly to project an operating system's stability by studying beta software. However, I can report a data point: after two months of using Windows 7 on a test machine, it hasn't blue-screened on me once. I am cautiously optimistic on this front.

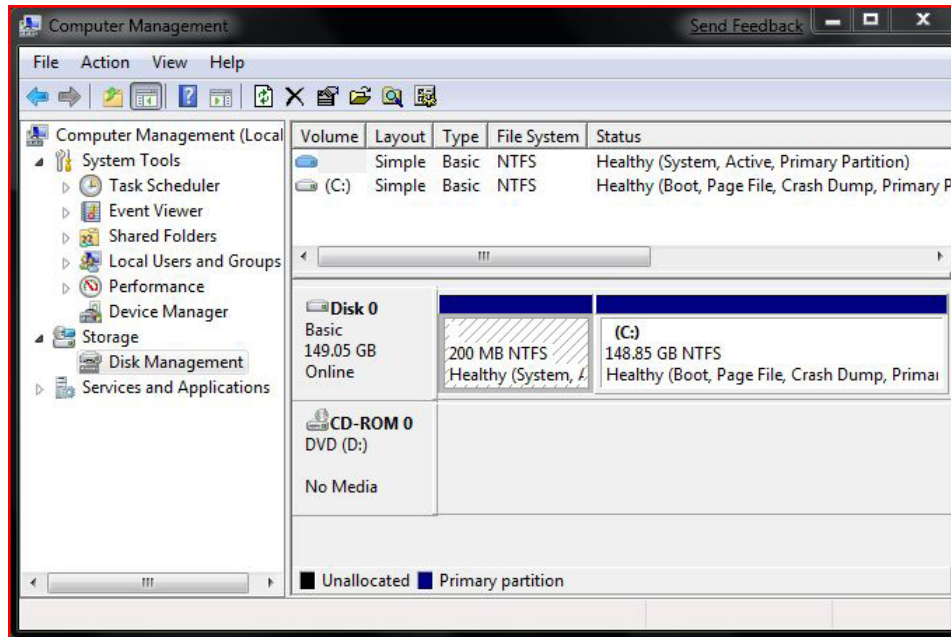
**Disaster Recovery.** This hasn't changed greatly since Vista. We still have the Windows Recovery Environment (WinRE), which you can access either by booting the product DVD or by building your own boot device. And we still have restore points, also recoverable from a WinRE boot. In the backup/restore area, Windows 7 lets users select folders to back up, unlike the Vista version of the backup utility, which was per-volume only; that's a much-needed improvement (see Figure 2).



**Figure 2: Now you can choose what to back up.**

## Security

**BitLocker.** Microsoft's full-volume encryption software has become smarter (Windows 7 SETUP creates the necessary hidden partition without you having to remember to do so; see Figure 3) and more flexible (it can now handle flash drives and external USB hard drives). The ability to encrypt removable drives goes by the name "BitLocker To Go."



**Figure 3: Windows 7 automatically builds a BitLocker boot partition.**

**AppLocker.** AppLocker appears to be a somewhat friendlier version of Software Restriction Policies, which have been around for a few years now. The feature lets administrators create a blacklist of forbidden programs.

**User Account Control.** UAC was perhaps the most reviled “feature” of Vista, and you just knew Microsoft was going to have to revise it. I always thought the concept made a lot of sense: use a low-security token for routine activities and only use a high-security token for non-routine, administrative tasks. But the devil is in the details, and UAC was poorly implemented.

In an attempt at a fix, Windows 7 provides a slider control (see Figure 4) to set one of four possible UAC levels (of course, in most corporate environments, these will be settable via Group Policy). The problem is that even the lightest level is, in my view, still too annoying for most people. I expect that organizations will treat Windows 7 UAC just as they did Vista UAC: turn it off for admins and turn it on for users who almost never need to do anything administrative. Oh, and UAC still does not integrate with the command prompt.

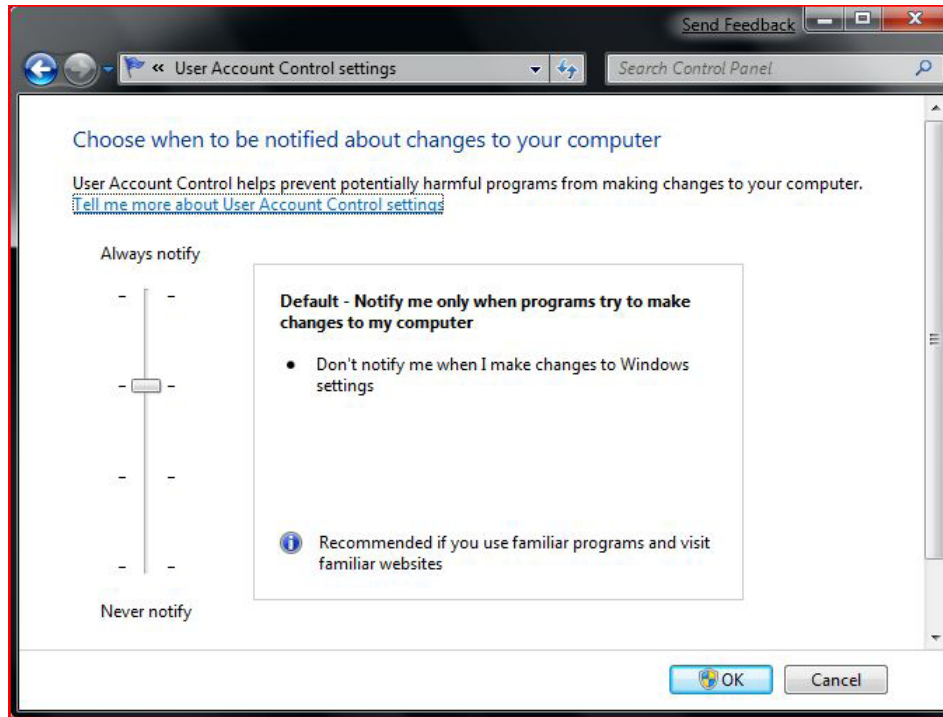


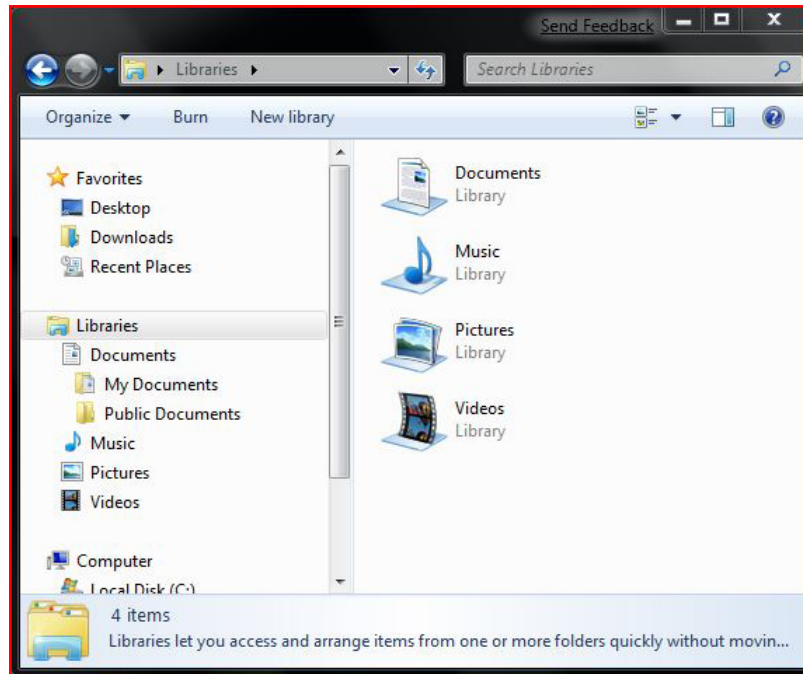
Figure 4: Gain a bit more control over User Account Control.

## Ease of Use

**New Taskbar.** Windows 7 uses the taskbar for both active and inactive applications, and the “quick launch” area has, therefore, been retired. Application icons change visually to indicate whether an app is running or not. You can also access your MRU (Most Recently Used) document lists by right-clicking the taskbar icons, which beats sifting through a long Documents history list. A grab bag of other changes makes the new taskbar friendlier in some ways but at some cost in complexity. For AERO users, the live thumbnails are cool and sometimes useful.

**Federated search.** The idea here is to combine the three disparate search methods – desktop, SharePoint, and Internet – into a single “federated” search facility. Microsoft has had unusual difficulty in providing an intuitive and effective desktop search capability in the post-XP era. Vista’s desktop search was non-inclusive by default, did not extend to all file types, and was not fully configurable by administrators. It was also excruciatingly slow for searches outside the index. Windows 7’s concept of “enterprise search scopes” (in which admins can set search parameters) could prove useful, but so far, the Windows 7 search feature still looks far too much like Vista’s for me to consider it a significant improvement.

**Libraries.** A new superfolder titled “Libraries” (see Figure 5) allows our documents, music, pictures, and other folders to contain files that live anywhere on the system, not just in the user profile. The fact that library files outside of the user’s profile will not be redirected to a server if Folder Redirection is used, could be a point of confusion, and I wonder if yet another layer of organizational structure is really what Windows needs.



**Figure 5: Library files can reside outside the user's profile.**

DirectAccess is a feature that requires Server 2008 R2 and permits Windows 7 clients to connect remotely to corporate networks without first establishing a VPN connection. It remains to be seen just how this feature is different from Vista and Server 2008's "Terminal Services Gateway" configuration. This is in Enterprise and Ultimate versions only.

## Manageability

**More choice.** Microsoft is slowly recognizing that users and companies want the software they want, and don't want the software they don't want. Some of the applets that may not be needed in a given business setting are now outside of Windows and available via "Windows Live Essentials." These applets include Messenger, Photo Gallery, Windows Live Movie Maker, and several more.

**Better applets.** No, not all of them, but some of the Windows 7 applets are now reasonably functional. For example, it seems hard to believe, but Paint is now a fairly decent image editing tool. (It has seemed for years as though Paint was permanently stuck in the '90s, but someone got embarrassed enough to give it a facelift.)

**Miscellany.** Microsoft has improved PowerShell, for example, by supplying a graphical user interface. Microsoft is also providing some new Group Policy settings (although, thankfully, not as many as it did from XP to Vista!). For shops upgrading from XP, one of the big enhancements is control over device usage and driver installation. Another potentially important Group Policy enhancement is network-wide power management.



## Conclusion

Windows 7 appears to be what Vista should have been in the first place. It is not a perfect product by any means: for example, there are too many features tied to Server 2008 R2, there are too many versions, and the user interface is still too complex and fragmented. It's somewhat amazing to me that nobody has come up with a dramatic improvement on the old "desktop metaphor" user interface developed many years ago at Xerox. A lot of the age-old Windows problems are still there, such as the inelegant patchwork of control panels and administrative tools for configuring a system.

But for what it is – a faster, less annoying version of Vista – it is a good thing, and, depending on final code, I can't rule out Windows 7 turning out to be the best overall version of Windows that Microsoft has ever built. There are those who believe that the world would benefit more from a radically new operating system instead of the umpteenth iteration of Windows; but given the huge inertia of Windows' installed base, that new operating system may have to come from somewhere other than Microsoft. Meanwhile, even the most ardent fans of XP should take a look at Windows 7. It's shaping up to be one of the high points along the Windows roller-coaster ride.

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## About the Author

Glenn Weadock is a long-time instructor for Global Knowledge and teaches Vista, Server 2008, and Active Directory. He has recently co-developed with Mark Wilkins two advanced Server 2008 classes in the Microsoft Official Curriculum. Glenn also consults through his Colorado-based company Independent Software, Inc. and is technical director of MarketCoach Investment Education Software LLC.