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77 Features For Windows® 7 That Every IT Professional Should Know About

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Introduction

Wow! Awesome! Unbelievable! Fantastic! Cool! I didn't know it had that! These are some of the comments I have been hearing from clients, students, and myself after I educate and demo the features below. As for me, a hard core IT Professional, I have been pleasantly surprised at the features of the Windows 7 operating system. If you have a Windows 7 machine as you read this article, you will become as excited as I have by trying these features first-hand. Without the live touch and feel, you may not fully understand these great features. It's best if you are sitting at a Windows 7 computer when reading this so that you can interact with each feature. As the saying goes, "Try it. You'll like it." Not at a computer right now, read on for a great education!

It can be said that Windows 7 bears a striking similarity to Apple Mac's OSx operating system. It builds on Windows Vista's positives and eliminates many of that OS's negatives. It adds new functionality, is less resource-hungry than Vista, and it starts and shuts down noticeably faster. Whether or not you're upgrading from Vista or moving up from Windows XP, you'll need to know how to make the most of it in your environment. Here are tips and tricks that every IT Professional must know. Windows 7 is crammed with lesser-known, but still important, new and enhanced features that, taken together, deliver improved performance and productivity, better trouble-shooting, stronger security, and a whole lot more.

To say that Windows 7 is a polished version of Vista is a true statement, but it does not fully describe the rede-sign, enhancement, and additional features Microsoft has put into their new operating system. From Windows 3.1 to Windows Vista, the Windows operating system has taken many giant leaps. And while Vista received a lukewarm reception from some users, Windows 7 is likely to be remembered for addressing those criticisms; and much more. Microsoft seems to have paid attention to the feedback it received about Vista and created an OS that is not only stable, but also very capable.

In fact, there aren't many changes to the overall look of Windows 7 when compared to Windows Vista. If you have some experience with Vista, you will feel comfortable with many similarities such as navigating around the desktop using Control Panel and Start Menu items. So to find out what is new in Windows 7, just read on and see for yourself. Check out my HotKey list at the end of this paper (#77).

77 Features for Windows 7

1. XP Mode

Do you remember Windows 95 and the restart into DOS mode? Windows 7 has a feature for those XP applications that do not work while running under Windows 7, and no reboot is necessary. It is an add-in to the operating system download Windows 7 XP Mode, known as XPM, free from the Microsoft. You will be able to run XP applications in an emulated XP virtualization environment. The download consists of a fully licensed version of Windows XP with SP3 Virtual PC environment from Microsoft. Your system will need to be running a CPU that supports processor-based virtualization and have installed Windows 7 Pro, Enterprise, or Ultimate edition. XP Mode only works with systems that have hardware virtualization (AMD-V or Intel VT) built-in and turned on. Unlike Virtual PC, though, it's not a standalone virtualization program. Once installed, XP Mode works behind the scenes and allows programs to run seamlessly alongside native Windows 7 applications. Microsoft claims nearly 100% compatibility with current Windows XP applications in XPM. To help determine if your computer is capable of running this kind of environment you can download the Microsoft Hardware-Assisted Virtualization Detection Tool, known as HAV, to check if the computer processor supports Hardware Virtualization and if this setting is enabled in the Bios. Certain other hardware specifications might need to be in place; but no problem, the HAV will determine what is needed.

2. Windows 7 Compatibility Mode

Not to be confused with XPM above, you can try this built in "fix" if you have trouble running applications designed for the previous versions of Windows. Using the Compatibility Mode, you can configure an application to try to run in the version of Windows that it was written for. Check the option, and you will be able to select the versions of Windows to use to run the application.

To configure an application to run in Compatibility Mode, right-click the application's shortcut, .exe, or installation program, and select **Properties**. Next, select the **Compatibility** tab, and you should see the option "**Run this program in compatibility mode for.**" (See the exhibit below).

Note that if Compatibility Mode is not supported for the application, the option will appear grayed out. The most likely reasons for this are that the application is designed for Windows 7 only, or that it is a 64-bit application.
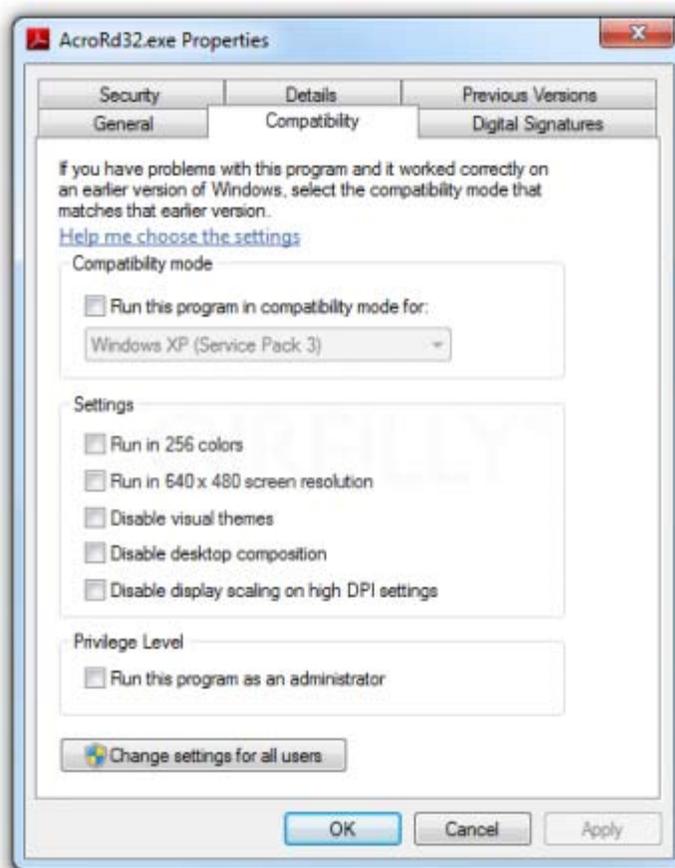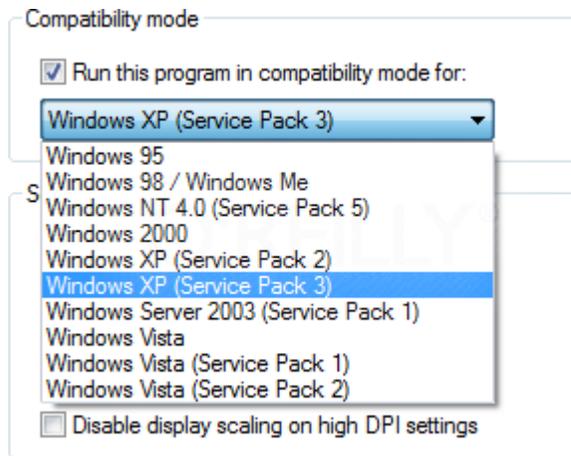
Compatibility Properties: Selecting the Windows version to run the application in Compatibility Mode

3. Create and Mount VHD Files

Microsoft's Virtual PC creates its virtual machine hard drives in VHD files, and Windows 7 can now mount these directly so you can access them in the host system. Click **Start**, type **diskmgmt.msc,** and press **Enter**; then click **Action**, **Attach VHD**, and choose the file you'd like to mount. It will then appear as a virtual drive in Explorer and can be accessed, copied, or written just like any other drive.

Click **Action**, **Create VHD**, and you can now create a new virtual drive of your own; right-click it, select Initialize Disk; and after it's set up, right-click the unallocated space and select **New Simple Volume**. You will have a virtual drive that behaves just like any other, where you can drag and drop files, install programs, test partitioning software, or do whatever you like. But it's actually just this VHD file on your real hard drive that you can easily back up or share with others. Right-click the disk and select **Detach VHD** to remove it.
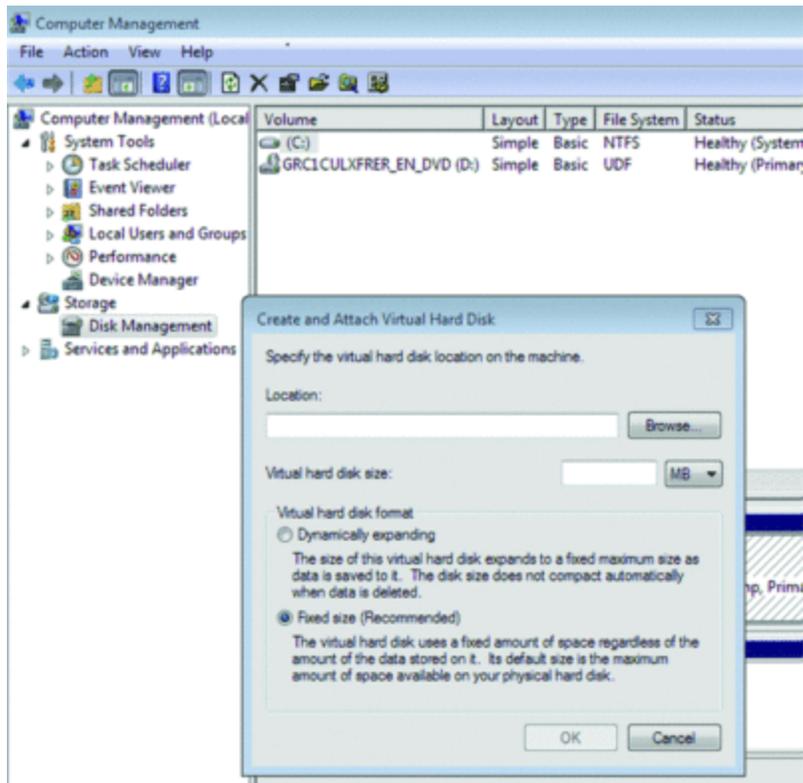
DiskManagement Tool: With the ability to create and attach virtual hard drives from the GUI

The command line **DISKPART** utility has also been upgraded with tools to detach a VHD file, and an **EXPAND** command to increase a virtual disk's maximum size. Take a look at the new Windows 7 VHD options below.

4. Jump to the JumpLists

Jumplists are a feature of the re-designed taskbar that now becomes the quick-launch area throughout the entire bar. Just drag your shortcut or application icon onto it. Jumplists give you the option to view a list of recently accessed files by application, even when the application isn't open, by right-clicking on the application's icon in the taskbar. It also allows you to quickly access a favorite playlist without opening your media player. Jumplists can also be found integrated into the Start Menu. The following exhibits show you the Jumplist for the Explorer icon and the Jumplist for the StartMenu. I have Word pinned to my Taskbar, and from a right-click of the icon, I select the recent document from Jumplist and Word opens with my document. It save mouse clicks.
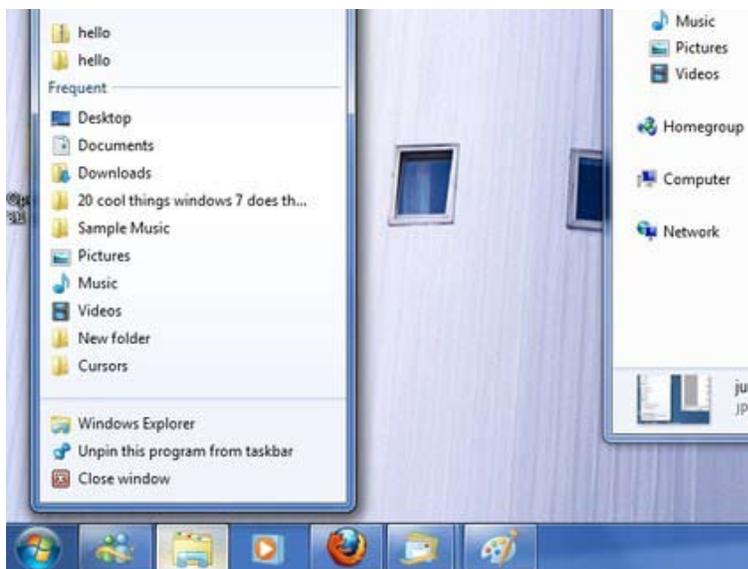
TimeSaver: The JumpList for Windows Explorer
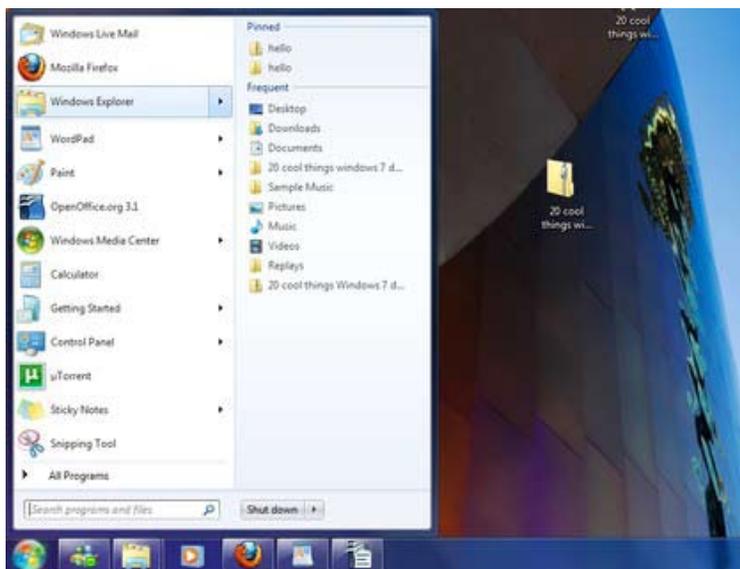
Start Here: A JumpList integrated into the Start Menu

5. Preview Running Apps

Hover over an icon button on the re-designed task bar, and you will get a preview view of an open window that pops up to show you what's inside. You can move your mouse on top of the preview window to look at a full-size "peek," which is a maximized temporary view of your opened window. Click on the window to keep it maximized. While in Peek View, you can close the peek window with the exit button on the top right of the window. You can also use the **Win** + **T** hotkey to scroll through the preview in the taskbar.
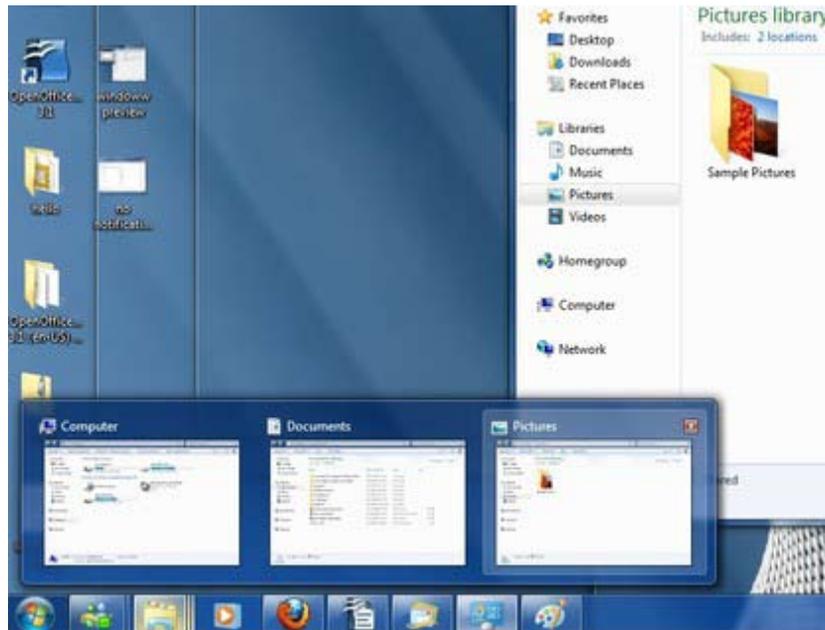
Preview Bar: A smaller preview, hover over for a full-sized "peek" and an exit button to close Window

6. AeroPeek the Desktop

In case you have not noticed the Show Desktop Button has been moved to the far right side of the TaskBar, on the right side of the notification area. Put your mouse on this new button, and it will preview the desktop. Hold down the **Windows Key** + **SpaceBar**, and you can AeroPeek the desktop; release the hotkeys, and the windows return to their position previous positions.

7. Snap and Shake into Place

Known as AeroSnap, simply drag your window to the left or right edge of the desktop to snap and resize the window to one half of the screen. Drag the window to the top to maximize it. A pretty neat idea made neater by the use of the keyboard shortcuts **Win** + respective **left/right arrow** keys). No longer do you have to frustratingly position the mouse at the edge of the window to resize it. Use the Aero Shake feature to minimize all background windows except your working window to the task bar, using your mouse. Grab the title bar of the window you wish to keep open and give it a shake. Have you ever had many, let's say 10 or more, application and or tool windows open at the same time, and you wanted to minimize all of them except the window you were working on at the moment? Shake the window again and watch the background windows maximize.

Wow!

8. Switch Multiple Display Devices

Try **Win** + **P.** Do this even if you don't have an external monitor or projector attached at the moment. You will still be able to see the "film strip" style of duplicating or extending your display to other monitors, it takes just a second to select. The **Win** + **P** or run **DisplaySwitch.exe** presents you with an **Alt** + **Tab** style menu, which is ideal if you give a lot of presentations on your laptop or want to rearrange your extended desktop.

9. A Stage for Your Device

With the new **Device and Printer**s button on the Start Menu, devices that are connected to your computer can have their own Stage. This Device Stage presents supported devices with a photo-realistic render and a link to the vendor's website, along with other updates and useful information (such as firmware updates and manuals). Plug an external device into your machine and navigate to **Device and Printe**rs from the **Start Menu**. See what else your device tells you. Open an instance of the tool on your live machine and see what it will show. It will amaze you.

10. Eliminate the Notification Area

This choice is located in Control Panel under Notification Area Icons, or type Notification in the search line. What, I can even get rid of the clock and volume icons? Yes. Click the arrow that gives access to the overflow icons in the notification area and click customize. Select each icon and click hide icon and notifications to remove it. Clean up notifications by turning them all to off. With Windows 7, we finally see system tray icons behave in a similar way to everything else on the taskbar. So if you want to rearrange them, just drag and drop them into the order you like. You can decide to show icons of Running Programs and or which Notifications are displayed. The following is the view of which System icons to turn on or off.
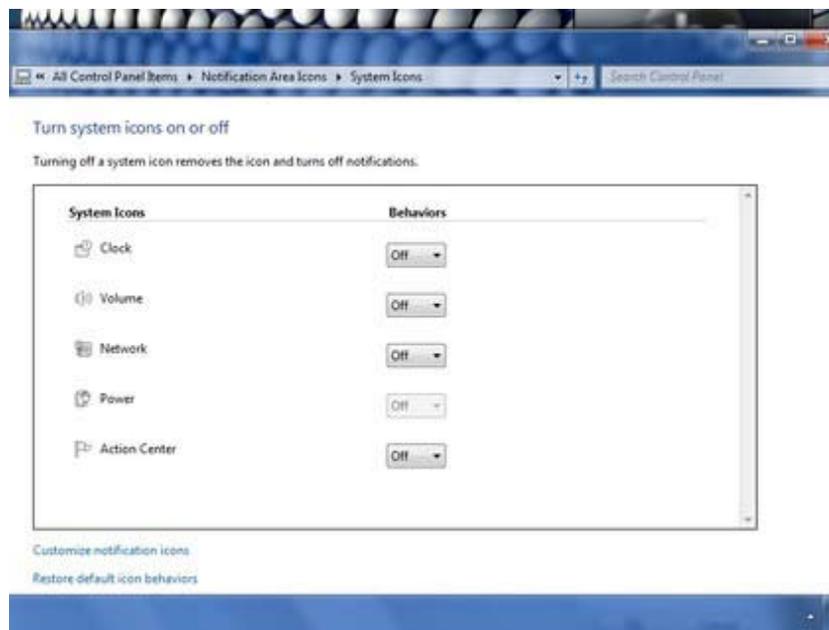
Notification Settings: Configure notifications to off

11. Problem Steps Recorder

Have you ever said to a user, "Can you show me the problem?" Yes, the **Problem Steps Recorder** lets you record a particular problem you are having with your PC so you can send it to someone who may be able to help. It's also great for creating training tutorials. Type **PSR** in the search line and press **Enter**, then click **Start Record**, and a screenshot is taken with every mouse click, allowing comments to be added in between if required. These screenshots (and comments, if any) are placed in a well-formatted HTML document that is placed inside a zipped folder on your desktop and can be attached to an email. The following are the PSR control panel and an example of a recording with comments.
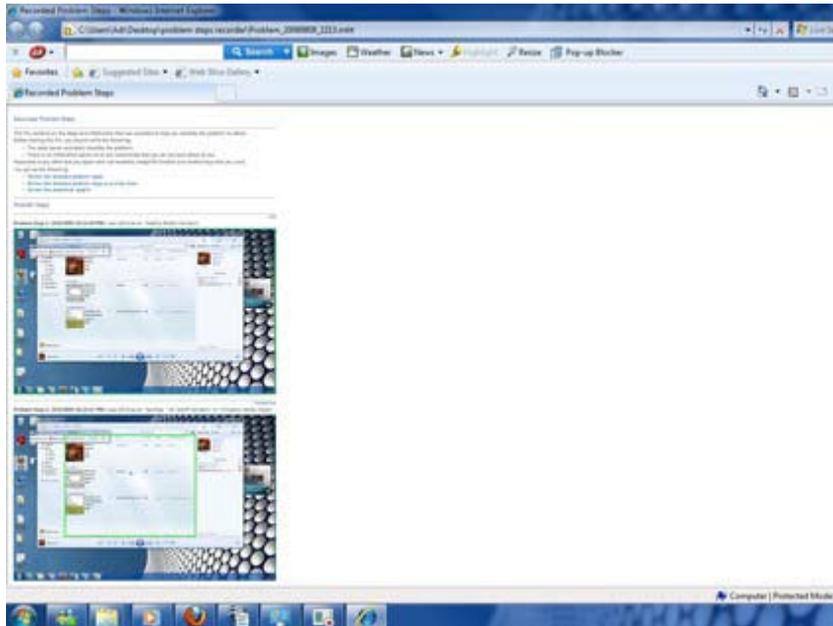
Problem Steps Recorder: Sample Recording

12. Burn Images

Yes, Windows 7 finally introduces the ability to burn ISO images to CDs or DVDs. And it couldn't be much easier to use. Just double-click the ISO image, choose the drive with the blank disc, click Burn and watch as your disc is created.

Windows Disk Image Burning: Burning an ISO file
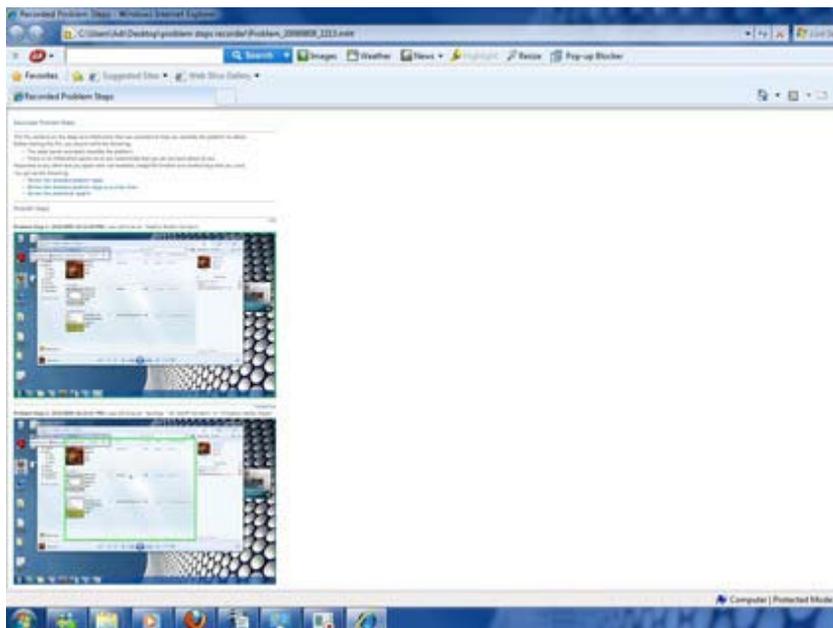
13. Troubleshooting Computer Problems

If some part of Windows 7 is not working, and you don't know why, then click **Control Panel** under the **System and Security** category **Find and Fix** problems or type **Troubleshooting** in the search line to access the new troubleshooting packs. These are simple wizards that will resolve a long list of common problems, check your settings, clean up your system, and more, for both hardware and software issues. Also type in the search line **Troubleshooting History** and see what has taken place in the past. Click the **View All** link in the top left of the window, and you will see a long list of troubleshooting tools. You must try this!

14. Build a Startup Repair CD

I always ask my customers if they have a repair disk. But if you've downloaded Windows 7 for the internet it's a good idea to create a system repair disc right away in case you run into problems booting the OS later on. Click **Start > All Programs > Maintenance > Create a System Repair Disc**, and let Windows 7 build a bootable emergency disc. If the worst does happen, then it could be the only way to get your PC running again. You will find Backup, Help and Support, and Remote Assistance there, too.

15. AppLocker to the Rescue

Frustrated with users who have rights for installing software or running applications they should not be running? AppLocker to the rescue. It's a new Windows 7 feature that is similar in concept but easier to use that the old Software Restriction Policy. It ensures users can only run the programs you specify. It's easier to set up than it sounds. You can create a rule to allow everything signed by a particular publisher. So let's say you choose Microsoft as the publisher, this one rule will let you run all signed Microsoft applications. Launch GPEDIT.MSC and go to **Computer Configuration > Windows Settings > Security Settings > Application Control Policies > AppLocker** to get a feel for how this works.

16. Awesome Calculator

At first glance, the Windows 7 calculator looks just like Vista's version. Launch it by typing Calculator in the search line. Pull down the **View** menu and explore the context popup menu and you'll see powerful new **Statistics** and **Programmer** views. Within the different view there are unique Options menus for the mode the calculator is in at that moment. This offers many different unit conversions such as length, weight, volume, and more, date calculations (for example how many days between two dates), and spreadsheet-type templates to help you calculate vehicle mileage, mortgage rates, and more.
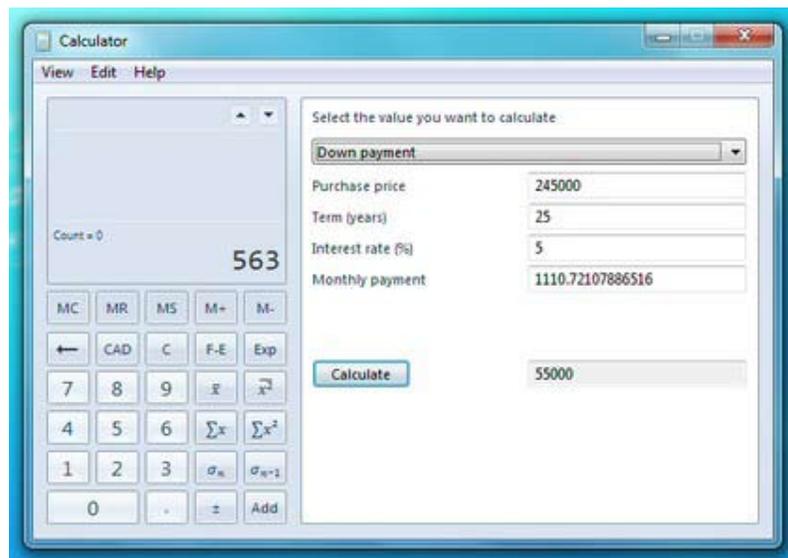
Calculator for Windows 7: The new Calculator is packed with useful features and functionality

17. Get a Power Efficiency Report

If you have a laptop, you can use the efficiency calculator to get Windows 7 to generate loads of useful information about its power consumption. This can help you make huge gains in terms of battery life and performance. Open a **command prompt** as an administrator by right-clicking it and choosing **Run** as administrator.

Then at the command line, just type in **powercfg-energy** and hit **Enter**, and Windows 7 will scan your system looking for ways to improve power efficiency. It will then publish the results in an HTML file in the System32 folder. Use it to optimize your power.

18. System Restore Born Again

Windows 7 improves on the System Restore feature. Using System Restore in previous versions of Windows has been something of a gamble. There's no way of telling which applications or drivers it might affect.

Windows 7 is different. Click the **Start** button, right-click **Computer**, and select **Properties > System Protection > Configure**, and set the **Max Usage** value to a size that suits your needs (larger to hold more restore points, smaller to save disk space). And if you don't need System Restore to save Windows settings, then choose the **Only restore previous versions of files** option. Windows 7 won't back up your Registry, which means you'll squeeze more restore points and file backups into the available disk space.

To restore, right-click Computer, select Properties > System Protection > System Restore > Next > and choose the restore point you'd like to use. Click the new button to Scan for affected programs, and Windows will tell you which (if any) programs and drivers will be deleted or recovered by selecting this restore point. Take a look!

19. New Time Zone Utility

System administrators will appreciate the new command line tzutil.exe utility, which lets you set a PC's time zone from scripts. If you wanted to set a PC to Greenwich Mean Time, for instance, you'd use the command **tzutil /s gmt standard tim.** The command **tzutil /g** displays the current time zone, **tzutil /l** lists all possible time zones, and **tzutil /?** displays details on how the command works.

20. Calibrate your Display

This tool is called Display Color Calibration. Since the colors you see on your screen will vary, depending on your monitor, graphics cards settings, lighting, and more, most people use the same default Windows color profile. And that means a digital photo you think looks perfect might appear very poor to everybody else. Windows 7 now provides a Display Color Calibration Wizard that helps you properly set up your brightness, contrast, and color settings, and a Clear Type tuner to ensure text is crisp and sharp. Click **Start**, type **DCCW** in the search line, and press **Enter**. If you tend to hook up your computer to an HDTV or care about getting the highest quality from your monitor, then the in-built, basic, and easy-to-use calibration tools built into Windows 7 will please you. Give it a try.

21. Clean up Live Essentials

Installing Windows Live Essentials will get you the new versions of Mail, Movie Maker, Photo Gallery, and others. Unfortunately, it also includes other components that may be unnecessary, but if you like to keep a clean system, then these can be quickly removed. For example if you left the default **Set your search provider option** selected during installation, for instance, Windows Live will install Choice Guard, a tool to set your browser home page and search engine, and prevent other programs from changing them. If this causes problems later, or you just decide you don't need it, then Choice Guard may be removed by clicking **Start**, typing **msiexec /x**, and pressing **Enter**. This is the Microsoft Windows Installer command line utility. To get the help file, type **msiexec /?** Windows Live Essentials also adds an ActiveX Control to help upload your files to Windows Live SkyDrive, a storage and sharing portal on the web, as well as the Windows Live Sign-in Assistant, which makes it easier to manage and switch between multiple Windows Live accounts. If you're sure you'll never need either, then remove them with the **Control Panel Uninstall a Program** applet under the **Programs and Features** link.

22. Magnifier Tool Re-Done

If you are, or someone you know is, visually impaired, then the Windows 7 Magnifier is just what the doctor ordered. The magnifier has three options for providing a bigger display. First type Magnifier in the search line to launch the console. Click the Views button in the console and there are three choices for your magnifier view with corresponding toggle keys. Full Screen: **Ctrl** + **Alt** + **F**, Lens: **Ctrl** + **Alt** + **L**, and Docked: **Ctrl** + **Alt** + **D**. There are **Zoom In Zoom Out** buttons, too. If you can't find your way back to normal view, the magnifying glass, the kind that Sherlock Holmes uses, is positioned at the top left side of your desktop; click it to restore the magnifier console. Very functional!
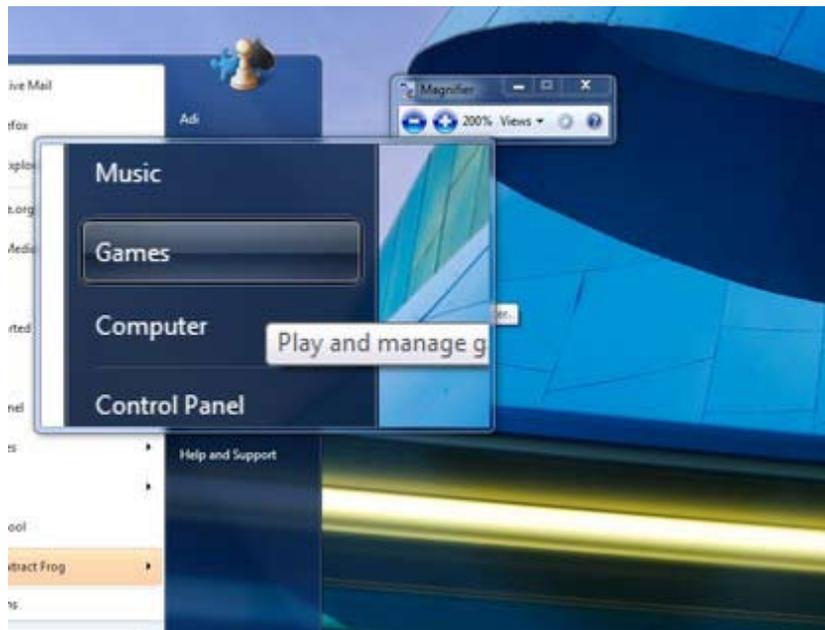

Up Close: A sleek new magnifier that follows your cursor, without decreasing your workspace

23. HomeGroup Networking

In Vista and older operating systems, we had the concept of a Workgroup, and creating a shared folder over a network at home could be a bit of a pain. The procedure requires you to have a user account on the "shared folder" computer. In Windows 7, using the HomeGroup wizard, you simply right-click the default folders you would like to share, select **Share With** and choose **HomeGroup Read** or **Read/Write**. This will give you a passcode that you will need to enter in another computer on the same network to share the files. One caveat is that only Windows 7 computers can join a HomeGroup; but Windows 7 is backward compatible to join a Workgroup too.

24. Preview and Stream Your Music

Opening and listening to an MP3 is a lot snappier with Windows 7 due to its new smaller preview player, presenting you with album art, basic music functionality, and a link to the full-blown Windows Media Player. This is an obvious attempt to mimic the QuickTime Player preview feature of Mac OS X, and it is very well executed.
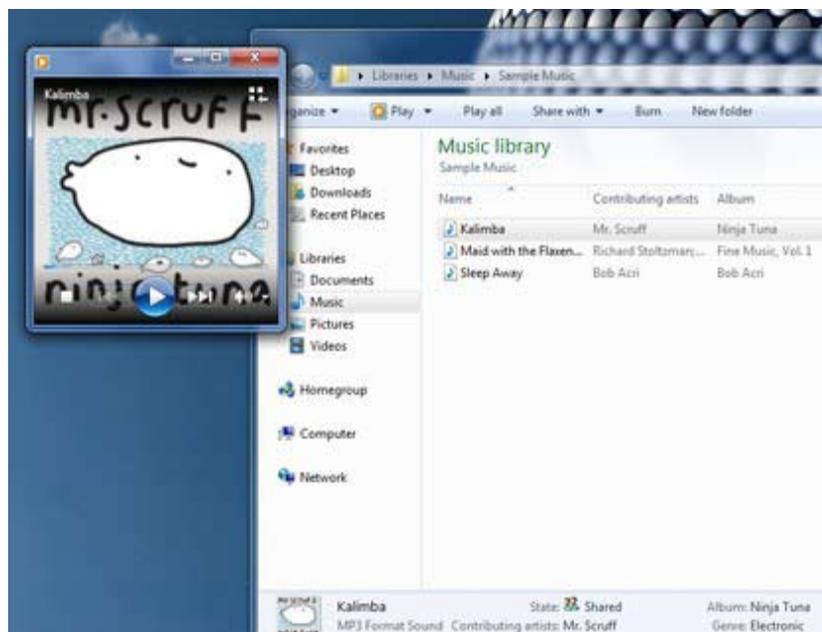
Music Preview: The new preview is simple – and loads up very quickly

Windows Media Player allows you to stream music directly to other computers that are members of a Home-Group. So, instead of listening to music through your tiny laptop speakers, you can wirelessly stream to the more powerful speakers of your PC in your living room, without stepping away from your laptop. The Windows 7 Media Centre now comes with an option to play your favorite music, which by default creates a changing list of songs based on your ratings, how often you play them, and when they were added (it's assumed you'll prefer songs you've added in the last 30 days). If this doesn't work, then you can tweak how Media Centre decides what a "favorite" tune is. Click **Tasks**, **Settings**, **Music**, **Favorite Music**, and configure the program to suit your needs. Windows Media Player 12 is a powerful program, but it still won't play all the audio and video files you'll find online. Fortunately, the first freeware Windows 7 codecs package has been released and is available at shark007.net/win7codecs.html. Installing it could get your troublesome multimedia files playing again.

25. Action Center

The Windows 7 Action Center is the new Security Center for Windows 7, along with other notifications such as updates and access to the improved troubleshooting and recovery using restore point facilities. Basically, it is everything Windows usually annoys you with, rolled into one place with one icon in the notification bar. If you find the alerts irritating, you can tweak this feature to make it less annoying. I find it helpful as a reminder for routine maintenance like backups, virus scans, etc. Type **Action** in the search line to launch it.

26. Pin, Remove with the New Taskbar

With Windows XP, we had a Quick Launch area to drag shortcuts to. Now the entire taskbar is one gigantic Quick Launch, and then some. Drag just about anything on to it or right-click a shortcut, and on the context menu, you can select **Pin to Taskbar**, and the associated application will place itself on the translucent taskbar, with an option to open the file in the Jumplist. If you prefer a more traditional approach, then right-click the taskbar, select **Properties**, and set **Taskbar Buttons** to **Combine when taskbar is full**. You'll now get a clear and separate button for each running application, making them much easier to identify. One problem with this tip is the buttons will gobble up valuable taskbar real estate, but you can reduce the impact of this by removing their text captions. Launch REGEDIT, browse to **HKEY_CURRENT_USER\Control Panel\Desktop\ WindowMetrics**, add a string called **MinWidt**h, set it to **54**, and reboot to see the results.

27. Launch Your Previews

If you're a hotkey guy like I am, you can use the **Windows + icon position** number to view or launch the programs from the icons on the taskbar. Let's say Internet Explorer is the third icon counting to the right of the start button. Simply press the **Windows + 3**, and it will launch IE or let you view it if it is running. Try this one!

28. Right-Click Everything

At first glance, Windows 7 bears a striking resemblance to Vista, but there's an easy way to begin spotting the differences; just right-click things. **Right-click** an empty part of the desktop, for instance, and you'll find in the context popup menu an entry to set your screen resolution. No need to go browsing through the display settings any more. Right-click the **Explorer** icon on the taskbar for speedy access to common system folders: Documents, Pictures, the Windows Explorer folder, and recently opened folders. Your pinned folders are there too. And if you don't plan on using Internet Explorer or any program on the taskbar, then you probably won't want its icon permanently displayed on the taskbar. **Right-click** the icon, select **Unpin this program from the taskbar**.

29. Desktop Slideshow

Windows 7 comes with some very attractive new Wallpapers, and it's not always easy to decide which one you like the best. So why not let choose a few, and let Windows display them all in a desktop slideshow? Right-click an empty part of the desktop, select **Personalize > Desktop Background**, then hold down **Ctrl** as you click on the images you like. You can even choose your own family pictures. Choose how often you'd like the images to be changed, anything from daily to once every 10 seconds; select **Shuffle** if you'd like the backgrounds to appear in a random order, then click **Save Change**s and enjoy the show.
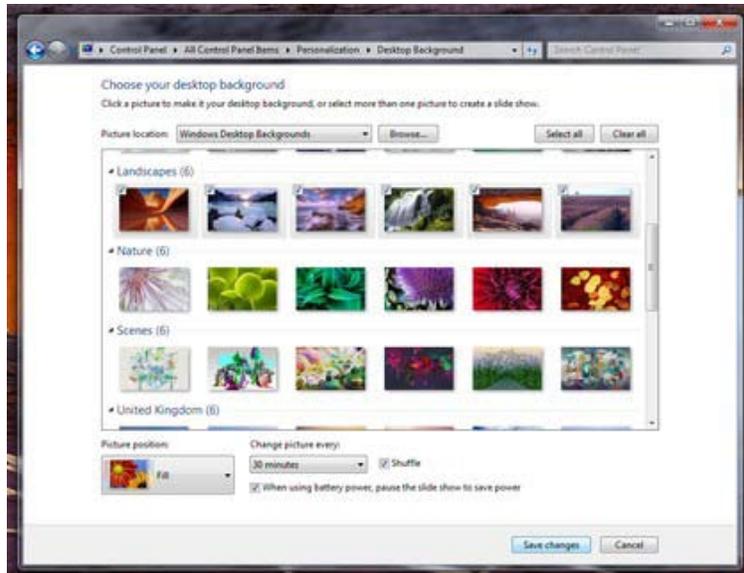
Desktop Slideshow: Select multiple background images, and Windows will cycle through them

30. Customize the Log-on Screen

Yes, you can change that boring Windows logon screen to a background and picture of your choice. Windows 7 makes it easy to edit the registry location for this. Type **REGEDIT**, and browse to: **HKEY_LOCAL_MACHINE\ Software\Microsoft\Windows\CurrentVersion\Authentication\LogonUI\Background**, double click the DWORD key called **OEMBackground**. If it's not there create it and set its value to 1.

Now, find a background image you'd like to use. Make sure it's less than 256KB in size and matches the aspect ratio of your screen, as it'll be stretched to fit. Next, copy that image into: %windir%\system32\oobe\info\back-grounds folder (create the info\backgrounds folders if they don't exist). Rename the image to **backgroundDe-fault.jpg**, **reboot**, and you should now have a custom log-on image. Viola!

31. Restore the *Old* Quick Launch Toolbar

If you're unhappy with the new taskbar, even after shrinking it, then it only takes a moment to restore the old Quick Launch Toolbar. Right-click the taskbar, choose **Toolbars > New Toolbar**, type: **%UserProfile%\Ap-pData\Roaming\Microsoft\Internet Explorer\Quick Launch** into the Folder box and click Select Folder. Now right-click the taskbar, clear Lock the taskbar, and you should see the Quick Launch toolbar, probably to the right. Right-click its divider, clear **Show Text** and **Show Title** to minimize the space it takes up. Complete the job by right-clicking the bar and selecting **View**, then **Small Icons** for a genuine old-fashioned look.

32. Custom Power Switch

By default, Windows 7 displays a plain text **Shut down** button on the Start menu, but it only takes a moment to change this action to something else. If you reboot your PC a few times every day, then it might make more sense to set a reboot as the default action. Right-click the **Start** button, select Properties and set the Power boot action to **Restart** to make it happen.

33. Auto Arrange Your Desktop

If your Windows 7 desktop has icons scattered everywhere, then you could right-click it and select **View**, **Auto arrange**, just as in Vista. But a simpler solution is just to press and hold down **F5**, and Windows will automatically arrange its icons for you. Awesome!

### 34. Disable Smart Window Arrangement

Windows 7 features interesting new ways to intelligently arrange your windows, so that if you drag a window to the top of the screen, it will maximize. I like this feature, but if you find it distracting, then it's easily disabled. Run **REGEDIT**, go to **HKEY_CURRENT_USER\Control Panel\Desktop**, set WindowArrangementActive to **0**, **reboot**, and your windows will behave just as they always did.

35. Browse Your Tasks

If you prefer the keyboard over the mouse, you will love browsing the taskbar using this nifty shortcut. Press and hold down the **Windows key** and click the letter **T** key. This will move the "focus" to the left-most icon on the taskbar. Then, while still holding down the **Windows key**, use your arrow keys or the **Windows** + **T** key to change the "focus" from left to right to other icons' You will also get a live preview of every open window.

36. Boost with ReadyBoost

Want a simple way to speed up your PC? Just plug in a USB flash drive or card and let **ReadyBoost** borrow it. ReadyBoost is designed to help when your PC's memory is running low. Low memory can make your computer sluggish because Windows, which needs a place to stash data, turns to the hard drive. Flash memory offers a speedier alternative. ReadyBoost works with most flash storage devices. In Windows 7, it can handle more flash memory and even multiple devices, up to eight, for a maximum 256 gigabytes (GB) of additional memory. ReadyBoost can be dynamically turned off at any time. Adjust the slider bar to adjust the amount of space you want to allocate for ReadyBoost and how much will be left over for storage space. On my laptop, I am using a SD card as a ReadyBoost device. Yes, it's faster, thank you for asking.
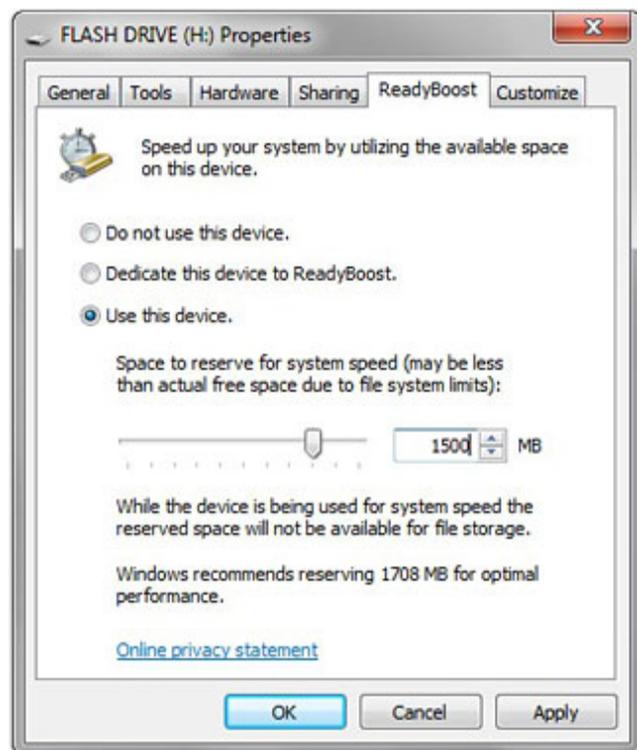
ReadyBoost: Properties dialogue box

37. Display Your Drives

Click **Start** then Computer, or **Windows** + **E** key, and you might notice something strange. Windows 7 does not show empty drives by default, but don't panic, they're still there. Drives and memory card readers are no longer displayed if they're empty. I think it's an improvement but, if you disagree, then it's easy to get your empty drives back. Launch **Explorer**, click **Tools > Folder Options > Vie**w, and clear **Hide Empty Drives** in the computer folder. And you thought something was broken.

38. Hiding the Windows Live Messenger Icon

If you use Windows Live Messenger a lot, you'll have noticed that the icon now resides on the taskbar, where you can easily change status and quickly send an IM to someone. If you prefer to keep Windows Live Messenger in the system tray, where it's been for previous releases, just close **Windows Live Messenger,** edit the shortcut properties, and set the application to run in Windows Vista compatibility mode. I run IM this way on my machine.

39. Reduce the Icon Size

Simple, just right-click the **Taskbar** and select **Properties**, then select **Small Icons** check box on Taskbar Tab.

TaskBar Properties: It saves room by allowing more of the desktop to display
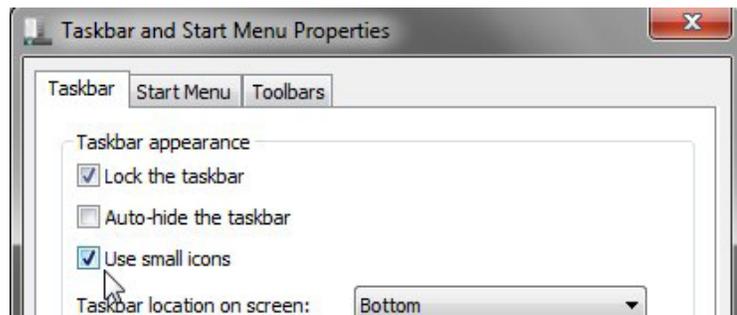
40. UAC Re-Done

Windows Vista's User Account Control was created to warn and even prevent installations and insertions into the registry without administrator approval, but it turned out to be too restrictive, especially for legacy applications, and it raised far too many alerts. Fortunately Windows 7 displays fewer warnings by default, and it lets you further fine-tune UAC to suit your preferred balance between always being notified, to "don't notify for operating system changes to System settings," to not being notified at all. Go to **Start > Control Panel > Change User Account Control Settings**.
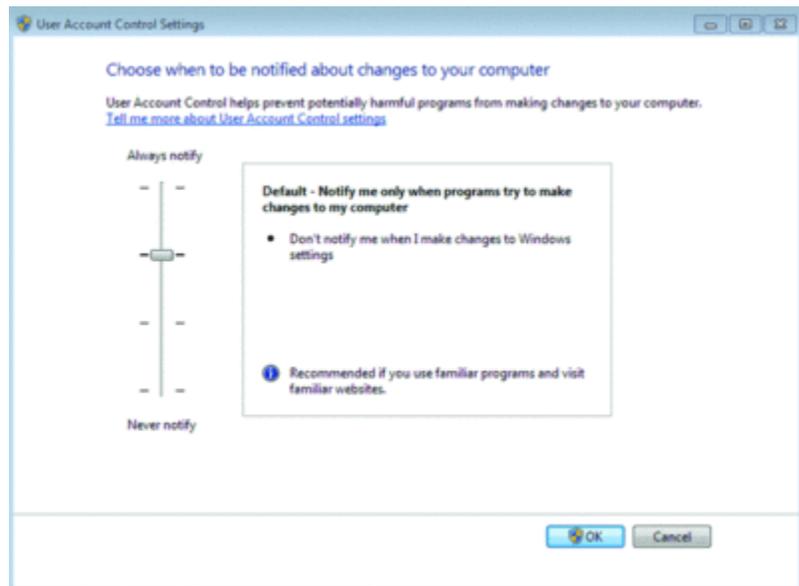
Slider for UAC: You set the amount of control

41. Sticky Notes Are Built–In

The Sticky Notes application is both simpler and more useful in Windows 7 than it was in Vista. Launch StikyNot. exe, or you can type **notes** or **sticky** in the search line. When it launches, right-click a note to change its color. To add another note, click the **+** sign on the note title bar or **CTRL** + **N**. Click a note and press **Alt** + **F4** to close the note window and, wow, your notes are automatically saved; relaunch and you will see your old notes.

42. Open Folder in New Process

By default, Windows 7 opens folders in the same process. This saves system resources, but means one folder crash can bring down the entire shell. If your system seems unstable, or you're doing something in Explorer that regularly seems to causes crashes, you can open **Computer** from the **StartMenu**, hold down **Shift**, right-click on your drive, and select **Open in New Process**. The folder will now be launched in a separate process, so a crash is less likely to affect anything else.

43. Preview Fonts

Windows 7 has some useful font-related improvements. Go to **Contol Panel** icon view or type Fonts in the search line, and the new Fonts window will open. You'll find a little preview for every font, giving you a quick idea of how they're going to look. Scroll through multiple entries for each family, like Times New Roman, Times New Roman Bold, Times New Roman Bold Italic, and so on. And there's a new OpenType font, Gabriola, added to the mix. There is a **Restore Default button**, if you need it. Try it.

44. Restore Your Gadgets

Windows 7 has tightened up its security by refusing to run gadgets if UAC has been turned off, thereby limiting the damage malicious unsigned gadgets can do to your system. If you've disabled UAC, and want your gadgets, and are happy to accept the security risk, there's an easy Registry way to get everything back to normal. Run **REGEDIT**, go to **HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Sidebar\ Settings**, create a new DWORD value called **AllowElevatedProcess**, and set it to **1**. Your gadgets should start working again right away. Gadgets can be selected by right clicking on the Desktop and in the context popup menu click **Gadgets**. Pick your Gadgets.

45. New WordPad Formats

You probably haven't given much thought to WordPad lately, but the version shipping with Windows 7 has undergone a major renovation. Think of it as a lite version of Microsoft Word. WordPad sports a spiffy ribbon in-terface, making it a snap to create well-formatted documents. Plus, you are no longer relegated to saving them as .RTF files. WordPad now supports the Office Open XML document (.DOCX) format. This makes it even easier to open .DOCX files created in Word in WordPad. By default, WordPad will save documents in Rich Text Format, just as before. But browse the **Save as Format** list, and you'll see you can save files in the Office 2007 .docx or OpenDocument .odt formats. Fantastic!

46. Protect Your Data

Known as "BitLocker to go," this will protect USB flash drives that are convenient, portable, and very easy to lose. This is a problem, especially if they're carrying sensitive data. Fortunately, Windows 7 has the solution: encrypt your documents with an extension of Microsoft's BitLocker technology, and only someone with the password will be able to access it. Right-click your USB flash drive, select **Turn on BitLocker** and follow the instructions to protect your private files. You will need the Ultimate version to enable this feature. BitLocker is totally portable and does not need Windows 7 to unlock the device. Plug it into any computer and double-click the **Bitlocker.exe** file to launch the Unlock Dialogue Box.
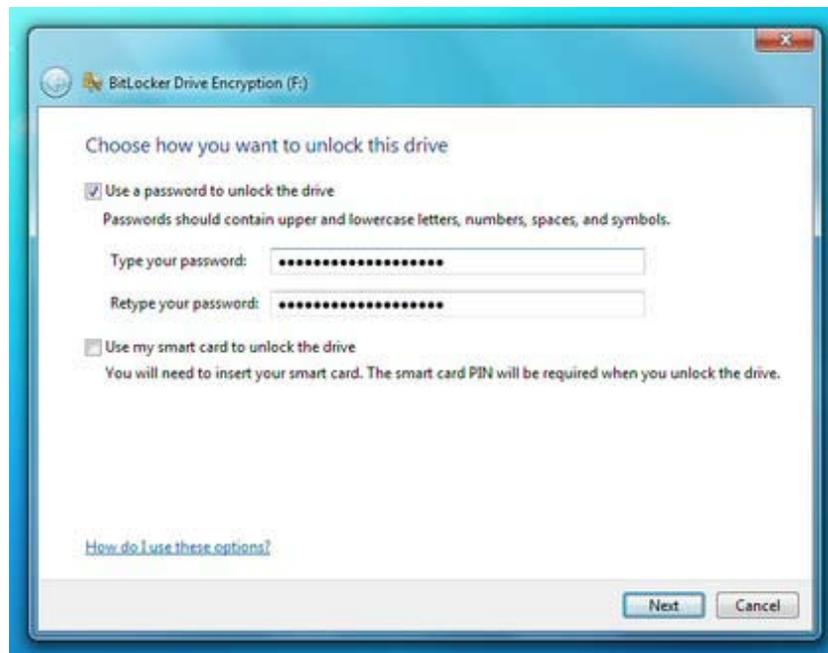
Protect your Data: USB flash drives can easily be encrypted with BitLocker

47. Run As Is Back

Hold down **Shift**, right-click any program **shortcut**, and you'll see an option to run the program as a different user, which is handy if you're logged in to the kids' limited account and need to run something with higher privileges. This isn't really a new feature - Windows XP had a Run As option that did the same thing - but Microsoft stripped it out of Vista, so it's good to see they've had a change of heart.

48. Search in Privacy and InPrivate

By default, Windows 7 will remember your PC search queries, and display the most recent examples when searching in Windows Explorer. If you're sharing a PC and don't want everyone to see your searches, then launch GPEDIT.MSC, go to **User Configuration > Administrative Templates > Windows Components > Windows Explorer** > double-click **Turn off display of recent search entries...,** > click **Enabled**, then **OK**. You can now search the Web using the search functionality. Windows 7 includes Federated Search to increase the search scope beyond the local and network resources. Several search connectors are available, such as for YouTube and Twitter, or you can create custom ones to fit your needs.

49. Tweak PC Volume

By default, Windows 7 will now automatically reduce the volume of your PC's sounds whenever it detects you're making or receiving PC-based phone calls. If this proves annoying (or maybe you'd like it to turn off other sounds altogether), then you can easily change the settings accordingly. Just right-click the **Speaker** icon in your taskbar, select **Sounds > Communications**, and tell Windows what you'd like it to do.

50. Extend Your Battery Life

Windows 7 includes new power options that will help to improve your notebook's battery life. To see them, click **Start**, type **Power Options**, and click the **Power Options** link, then click **Change Plan Settings** for your current plan, and select **Change Advanced Setting**s. Expand Multimedia Settings, for instance, and you'll see a new "playing video" setting that can be set to optimize power savings rather than performance. Browse through the other settings and ensure they're set up to suit your needs.

51. Write Crash Dump Files

Windows 7 won't create memory.dmp crash files if you have less than 25GB of free hard drive space. This is annoying if you've installed the Windows debugging tools and want to diagnose your crashes. You can turn this feature off, though: browse to **HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Crash-Control**, create a new DWORD value called **AlwaysKeepMemoryDump**, set it to **1**, and the crash dump file will now always be saved.

Shift to and from

Explorer and

CommandPrompt

Embrace

Troubleshooting

Packs

Configure User Account

Conrol (UAC)

60 Get More Windows

PowerShell

52. Go 64-Bit

As the second major Windows release to fully support 64-bit, the x64 architecture has definitely arrived on the desktop. Even subnotebook Laptops are built on x64 hardware; I have one myself. I am using 64-bit Windows 7 Ultimate on an 11 inch x64 laptop as I type this white paper. Most business users do not need the more expensive Ultimate Edition; stick with Professional, unless you specifically need BitLocker.

53. Windows PowerShell v2

More than just a shell, this is the administration tool you've always wanted: Parallel, distributed processing for administrative tasks! Manage 100 machines, literally, as easily as you manage one with the new Remoting feature. Windows PowerShell v2 ships for the first time in Windows 7 and will be available for older versions

of Windows. If you want to make the most of Windows PowerShell on Windows 7, you'll need a quick way to build and debug scripts. Windows 7 comes with an interactive editor that allows you to try out cmdlets and test functions on the fly. Many will prefer to use the graphical Windows PowerShell console, also known as the Integrated Scripting Environment (ISE). You'll find this in the Windows Power¬Shell folder under Accessories. Add a keyboard shortcut of **Ctrl**+**Alt**+I to quickly launch it. Run any Windows PowerShell command in the lower panel and see the results in the middle. Create or edit scripts in the top pane. Open multiple Windows PowerShell sessions connected to remote computers. The ISE makes Windows PowerShell v2 easy to use and fun.
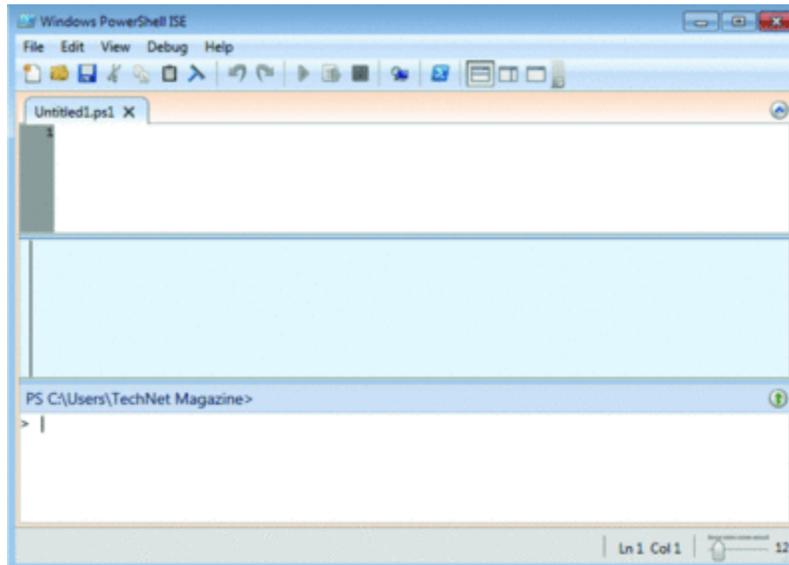
Windows Power Shell: the Integrated Scripting Environment (ISE).

54. Shift to and from Explorer and Command Prompt

The classic Windows Power Toy "Open Command Prompt Here" is now an integral part of Windows 7 Explorer. Hold down the shift key then right-click a folder to add this option to the property menu. While you're in a command prompt, if you want to open an Explorer window with the focus of the window on the current directory, type **explorer** and press **Enter**.

55. Employ Deployment Image Servicing and Management (DISM)

If you quickly want to list or manage Windows packages, features, or drivers, use the command-line utility **DISM**. The "image" in the name may fool you into thinking that this is solely a deployment tool. An online command-line switch lets you manage the features in the currently loaded OS. To get a list of the loaded Windows features, open an Admistrator Command Prompt (right-click the command prompt Icon and select **run as administrator**) enter **dism /online /get-features /format:table**. To enable a feature, enter **dism /online /enable-feature /featurename:<name>.**; or just type **DISM** to see help for a list of commands.

56. Check Reliability

The Reliability Monitor was introduced in Windows Vista as "The Reliability and Performance Monitor." In Windows 7, it has been separated from Performance Monitor and moved to a new location under the Action Center. To launch the Reliability Monitor, open the **Action Cente**r in Control Panel, then look under the **Maintenance** options for the **View reliability history** link. You can also just type in **Reliability Monitor** from the search line. Three categories of history are shown: Information-Blue Icon, Warnings-Yellow Yield Icon, and Critical Events - Red Icon. You can click the link at the bottom of the tool to view all problems and check for solutions.
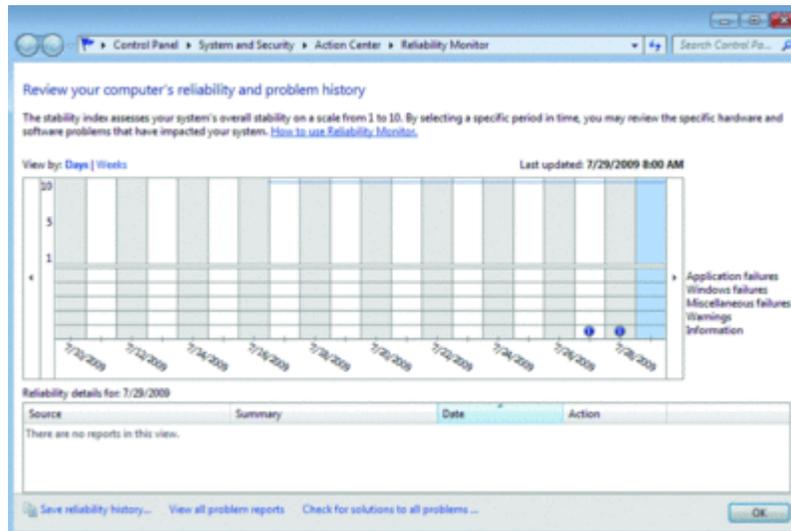
The Reliability Monitor: Show history and time line

57. Snipping Tool

 The snipping tool has also been around in various incarnations, but it's even easier to use in Windows 7. Launch the tool, then drag and drop any part of your screen. The tool will snip the selection. You can save it as a graphic file or annotate with basic drawing tools. Teach your end-users how to use this tool so they can grab the snapshots of their problems and send them to the help desk. Or you can create your own library of visual notes.

58. Reduce the Clutter

Press **Windows** + **Home** to minimize all but the current window, removing background clutter and leaving you with the window that you are working with. See for yourself!

59. New Mouse–Click for Administrator

Windows 7 makes it easy to gain admin rights with a keyboard shortcut. Click on **Ctrl** + **Shift** on a taskbar-locked icon, and you've launched it with appropriate admin rights. No need for a right mouse click.

60. Faster Installations

If your computer is capable of booting from USB, try this: XCopy the Windows 7 installation DVD to a sufficiently large USB drive, boot from that drive, and install Windows from there. It's faster than spinning the CD platter.

61. Additional Clocks

If you work with offices in different time zones and frequently find yourself missing meeting times because you are not in sync with their time zone, try the **Additional Clocks** feature that was first introduced in Vista. Within your Date and Time settings is a tab called Additional Clocks, where you can add two or more clocks to your taskbar time, and set them to provide different time zones from your current time zone.

62. Associate Your Files

The file association we are so accustomed to using has been moved to a newly created area called Program Defaults that is now located off of the Start Menu. You can use this to set associations for file extensions of all sorts and what programs they will launch. The change AutoPlay settings are also in this area, from inserting a DVD to inserting a Camera or a PDA device. Program Defaults are also set from this location.

63. RoboCopy

The always-useful Robocopy.exe can now run multi-threaded; run **RoboCopy /?** to review its new parameters (like /MT for multithreading) and make your copies go faster.

64. Remote Desktop Tools

Type **remote** in the search line, and you will see Remote Desktop Connection, Remote Desktop Services manager, Remote Desktops, and Windows Remote Assistance. All these apps will be discussed in another white paper dealing with Windows 7 remote ability. In the meantime, launch them and become familiar with their uses.

65. Add Shared Folders to Library

You can add UNC paths such as \\servername\sharename to a Library, but the server must index the folder. To add a UNC path to an unindexed server, create a symbolic link to the UNC path, then add the link or links to the library. Use the **mklink** command. **For example, mklink HomeFolder \\ServerName\Homefolder**.

66. Manage Passwords

Control Panel includes a new application called Credential Manager. Type **Credential** from the search line to launch. This is a completely new tool that allows you to save your credentials (usernames and passwords) for Web sites you log into and other resources you connect to, such as a HomeGroup network. Those credentials are saved in the Windows Vault, which can be backed up and restored. You can also manage passwords for your account as well as user accounts from a Home-Group networking setup. You can Backup and Restore the Windows Vault and link your stored ID to an on-line account.
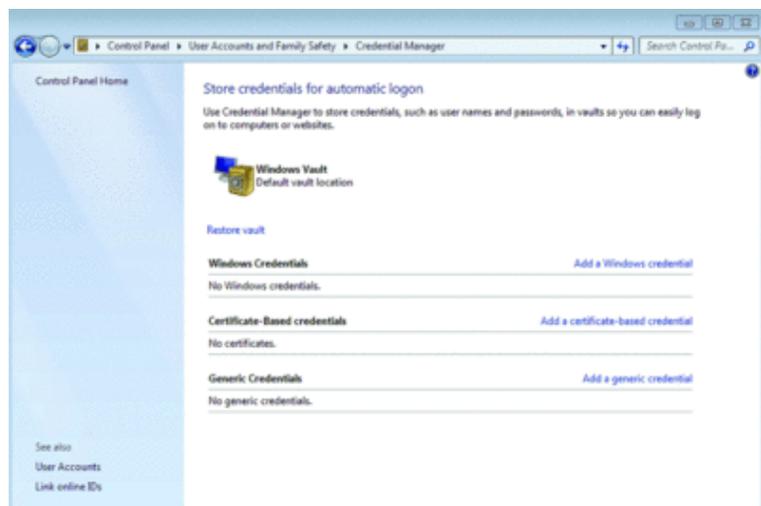
Credential Manager: a handy, secure place to store passwords

67. Trigger and Event

Event Viewer is closely tied into Task Scheduler. You have the ability to take an event (select it in **Event Viewer**) and then from the **Actions** pane or a right mouse click, select the option **Attach a Task** to have that event perform one of three kinds of Tasks: Start a Program, Send an Email, or Display a Message. When the event appears, it will trigger the task you set. This feature may be very helpful in troubleshooting a problem. When the need arises, reconfigure or disable the task in the Task Scheduler tool.

68. Windows Live

Many applications installed on past versions of Windows have been removed. Starting with Windows 7, these applications (and a few others not typically installed with Windows) have been moved into the Live Essentials downloadable applications, at download.live.com. These applications include Messenger, Mail, Writer, Photo Gallery, Movie Maker, Family Safety, and a few others. You can download Microsoft's antivirus protection, called Microsoft Security Essentials. It's running on my system as I write this and, it gets the job done. I haven't had a problem since.

69. Uninstall Apps and IE8

Although some applications have been moved off of Windows to become optional downloads, other apps, such as IE8, Media Player, Media Center, and DVD Maker, are still included. In times past, especially when it came to IE, the applications were tied into the OS. However, in Windows 7, you can easily remove them if desired. Head to the **Program and Features** applet in Control Panel and select the **Turn Windows features on or off** link in the top left-hand corner. Then you can select the checkbox of the features you want to remove or add for your system.

**Windows 7 Features On-Off: making it easy to add and remove them**
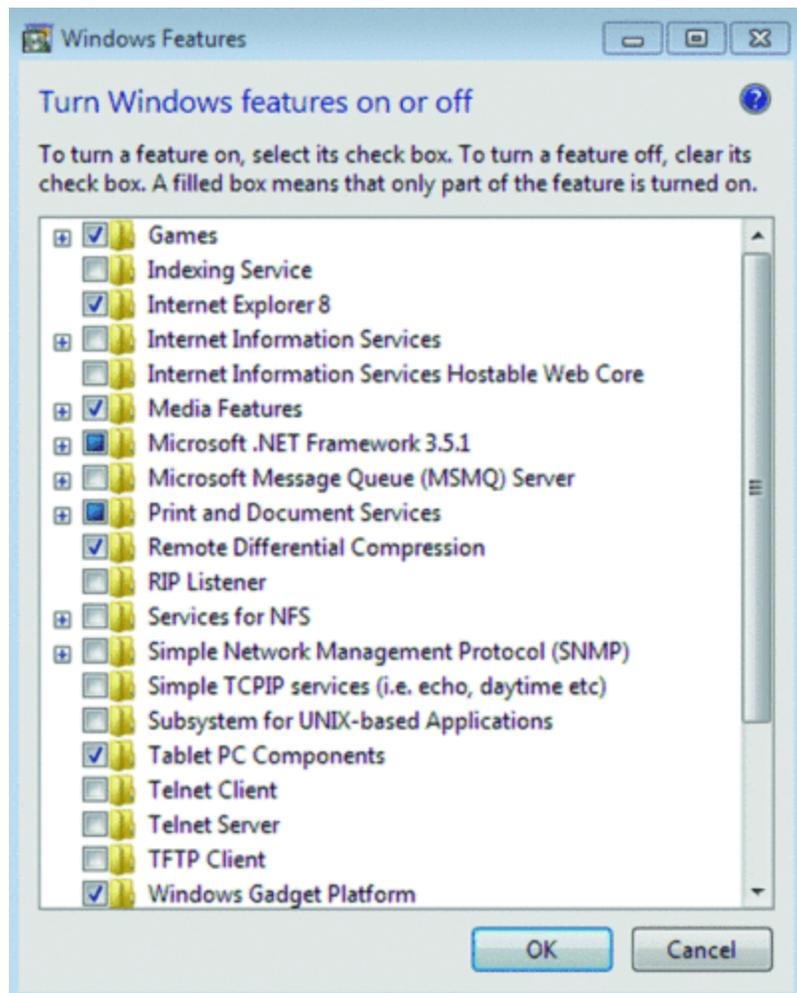
70. Windows 7 Experienced Rating

System properties have a rating called the Windows Experience Index (WEI). This rating is a collection of five different ratings that are determined by the Windows System Assessment Tool (WinSAT). The highest rating score is 7.9 (compared to 5.9 in Vista), using the categories of Processor, RAM, Graphics, Gaming Graphics, and Primary Hard Disk. The final rating is not an average of all the ratings, but the lowest of the subcomponent scores.

71. Analyze Processes

One of the coolest new features in the revamped Resource Monitor (resmon.exe) is the ability to see the "wait chain traversal." An unresponsive process will be shown in red in the Resource Monitor; right-click the process and choose **Analyze Process**. This will show the threads in the process and see who holds the resources that are holding up the process itself. You can then kill that part of the process if you like. Click the button bars under each category, and you will see what the system is busy with. The columns can be sorted by clicking the top of the column. Type Resource or Resmon in the search line, or you can launch it from **Task Manager/Performance Tab/ Resource Monitor Button**.
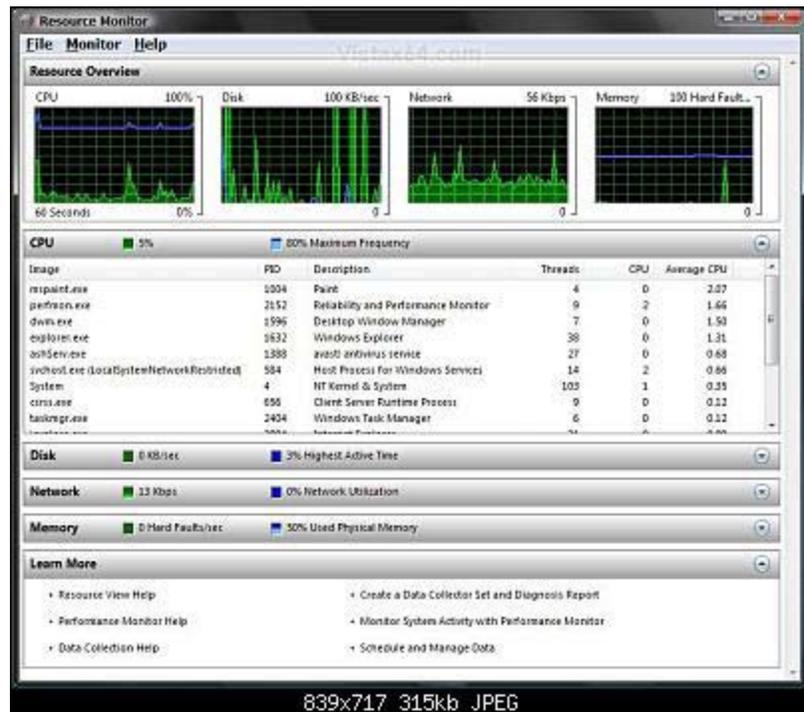
The new Resource Monitor: it shows you what your system is busy with.

72. Surf InPrivate

IE8 on Windows 7 offers more security and tight integration with the operating system than IE8 running on XP. One example of this is the **Enable Protected Mode** security setting. It is enabled from the Internet Options/Security tab and prevents unauthorized internet installations. A new feature in IE8 is the ability to open the browser in an InPrivate Browsing session that allows you to perform banking and so forth from a public location without fear of leaving behind any tracks. IE will not retain anything you do in an **InPrivate Browsing** session. You can perform this action if you are already within IE by selecting the **Safety** button and then **InPrivate Browsing**. Or from with a browsing session, hold down **Ctrl** + **Shift** + **P** This will open another IE window. InPrivate can be launched from the JumpList with a simple right-click on the icon on the Taskbar and clicking **Start InPrivate Browsing**. You can save a few steps by using the shortcut. Right-click the desktop IE icon, click **InPrivate**, and the windows will open in an InPrivate session. If you want a more permanent solution, edit the properties of the shortcut icon by add the private switch at the end of the target location path.

73. Enhanced Task Manager

The Windows 7 Task Manager now includes a tab to manage services. You can quickly see the status of all services on your machine. Click a column heading to sort. You can even start and stop services with a simple right-click. If you need full-blown service management, use the **Services** button to launch the services management console. You may often have the Task Manager running in the system tray; now, having service management access means one less open window. Launch Resource Monitor from within the performance tab of Task Manager.

74. Your System Health

Another new system tool you'll enjoy is the System Health report. In the search line, type **perfmon /report**, which generates a system health report. This report records details about your computer's performance, resource usage, and more. The report also includes diagnostic information about things that aren't working as they should and suggests steps to resolve them. The reports are saved and can be accessed with the Performance Monitor management console. You can also save as an HTML file or send via e-mail. Nice feature!

75. Install It on the Old Computer

One perhaps-not-so-obvious Windows 7 tip is that you should attempt to install it everywhere. One user has a 6-year-old laptop that originally shipped with Windows XP. He could never get Windows Vista to install on it, but Windows 7 installed without a complaint and runs extremely smoothly. Granted, there are some Windows 7 features he can't take advantage of because the processor lacks certain features, but these are minor issues considering the laptop now has life again. So dust of those old computers.

76. Redesigned Help and Support

Help and Support has a redesigned for simplicity. The main page has three features: a **Search Box**, a link back to Microsoft's WindowsWeb site, and a Button labeled **Ask**. You can click the **Ask** button at the top right of the window, or the **More Support Options** button in the bottom left of the Home Page. Click it, and this is where Microsoft is hiding the **Ask a Person for Help**. You will find Remote Assistance, Microsoft Help Forums, and Computer Manufactures Homepage. It's much less intimidating for end-users, so make sure they know about it. Search is much improved as well, making for better, faster searches.

77. 17 Useful Windows 7 Keyboard Shortcuts

Win+h – Move current window to full screen

Win+i – Restore current full-screen window to normal size or minimize current window, if not full-screen

Win+Shift+arrow – Move current window to alternate screen

Win+D – Minimize all windows and show the desktop

Win+E – Launch Explorer with Computer as the focus

Win+F – Launch a search window

Win+G – Cycle through gadgets

Win+L – Lock the desktop

Win+M – Minimize the current window

Win+R – Open the Run window

Win+T – Cycle through task bar opening Aero Peek for each running item

Win+U – Open the Ease of Use center

Win+Space – Aero Peek the desktop

Win+Tab – Flip 3D

Win+Pause – Launch System applet

Alt+F4 – with windows closed launches the Shut Down Windows dialog box.

Alt+Tab – Film Strip

Summary

I have listed 77 Windows 7 features, some in the form of quick tips and tricks and some in the form of detailed explanations. Use this white paper as a reference to the enormous enhancements built into Windows 7. There are other built-in features that I will expand on in future white papers that will include such features as Windows Event Collection Utility and Subscriptions, Direct Access and VPNs, plus others. Do you know of other features that I am not including at this time? If you find any features worth mentioning or have any comments send me an e-mail to: markmiz@comcast.net; I'd love to hear from you.

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Mark Mizrahi has been a Microsoft Certified Systems Engineer (MCSE) since Windows NT3.51. He holds a CEH Certified Ethical Hacker Security Certification and is a CEI Certified EC-Council Instructor. He is a Microsoft Certified Trainer (MCT) and MCTS and MCITP for Windows Server 2008, Vista, and Windows 7. He currently teaches Microsoft curriculum for Global Knowledge and other training vendors. Mark is president of Standard Computer Services and consults for various Fortune 500 companies. He designs and implements web-based Internet Security and Video Surveillance Systems for a diversified customer base. Keeping up the various hacking methods is part of his daily intake of information, and he loves sharing it with this clients and students.