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Windows 7 has received plenty of attention from the tech press, but much of the focus has been on interface changes, such as the redesigned taskbar, and new file management features, such as libraries. Some improvements are less obvious -- like the new or enhanced tools that are included with the OS. Here we discuss 10 of these cool tools that make the computing experience easier.

1: Action Center

Centralized management is the name of the game today, and Windows 7 gives you a one-stop shopping location where you can go to deal with security issues, troubleshooting, and recovery, instead of searching out applets for each. It's all combined in an easy-to-use Control Panel applet, where you get maintenance and security messages and can view performance information, change UAC settings, and more, as shown in **Figure A**.





This is an outgrowth of the Security Center in Windows Vista. It made sense to combine security settings and actions with system maintenance and recovery issues. The Action Center also shows up as an icon in the system tray, which displays a red X if there are problems you need to address, as shown in **Figure B**.

A nice touch is that Microsoft makes it easy for you to turn the various types of notifications on or off, as shown in **Figure C**. Thus, if you have an antivirus program installed that Windows doesn't recognize, you don't have to deal with constant messages urging you to install one -- just turn off virus protection messages.



Figure B

	Send Feedback	3
🔾 🗢 🏲 « Change Action Center settings 🔹	Search Control Panel	
ile Edit View Tools Help		
Turn messages on or off		
For each selected item, Windows will che How does Action Center check for proble	ck for problems and send you a message if problems are found. <u>ems?</u>	
Security messages		
Vindows Update	Spyware and related protection	
Internet security settings	Viser Account Control	
Vetwork firewall	Virus protection	
Maintenance messages		
Windows Backup	📝 Check for updates	
Vindows Troubleshooting		
Related settings		
Customer Experience Improvement P	rogram settings	
Problem reporting settings		
Windows Update settings		
	OK Cancel	

Figure C

2: Problem Steps Recorder

One of the coolest new tools in Windows 7 is the Problem Steps Recorder (PSR) -- especially for those of us who provide tech support to Windows users. No matter how hard they try, users often have problems accurately describing the problem they're experiencing or the steps they took before or after experiencing it. Sure, Remote Assistance can be a godsend in those situations. But you can't always connect to the user's computer in real time. That's when the PSR comes in handy.

It's really a type of screen capture software that records all actions -keystrokes, mouse clicks, etc. -- and saves the sequence of events in an MHTML page that documents every step the user took, along with screenshots.



You start the PSR by entering psr.exe

in the Start menu Search box or at the command prompt. The interface is shown in **Figure D**. You can view the recorded steps in IE by double-clicking the saved zipped MHTML file, as shown in **Figure E**.





3: ISO burner

An ISO image is a type of archive file that is often used to distribute software. In Windows 7, Microsoft addressed something that's been on the wish list of many users for a long time: Now you don't have to download and install a third-party program to burn an ISO file to disc.

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It's a simple process: After you download an .ISO to your hard drive, just double-click it and Windows 7 will open the Burn Disc Image dialog box, shown in **Figure F**. This also works for images with the .IMG file extension.

4: Biometric device management

In earlier versions of Windows, biometric authentication and management of biometric devices (fingerprint sensors) required third-party software that might or might not integrate well with the OS. Now it's built in. Windows 7 includes the Windows Biometric Framework, which gives developers an API they can use to build biometrics into applications. Makers of fingerprint sensor hardware, such as UPEK and AuthenTec, worked with Microsoft on the development of the Framework. Biometric devices are managed through a Control Panel applet, shown in **Figure G**.

Burn Disc Image	Send Feedback
Disc image file:	en_office_2003_frontpage.iso
Disc burner:	DVD R Drive (G:)
Status	
To start burning t	the disc image, click Burn.
🔲 Verify disc after I	ourning
	Burn Cancel



	Send Send	Feedback 📼 🖾 🔀
🚱 🗢 🗑 « Change se 👻 🍫	Search Control Panel	Q
File Edit View Tools Help		
Change biometric settings		
These settings control biometrics and fingerprint lo fingerprint logon information for all users of this co	ogon for this computer. If you want to delete omputer, turn off biometrics.	biometric data and
Biometrics on		
Allow users to log on to Windows using the second secon	heir fingerprints	
📝 Allow users to log on to a domain using t	heir fingerprints	
Biometrics off		
	🛞 Sav	re Changes Close

Figure G

5: Credential Manager

The Credential Manager is another new feature in Windows 7. It is similar in some ways to the password management feature in Vista's User Accounts applet but is more sophisticated. You can manage Windows credentials for various computers that you sign onto, certificate-based credentials, and other generic credentials (for e-mail accounts, Web accounts, etc.). These are all stored, by default, in the Windows Vault, as shown in **Figure H**.



Figure H

Perhaps the best new feature in Credential Manager is the ability to back up and restore the Vault. Microsoft recommends that you back up your credentials to a removable drive, such as a flash drive, to make it easier to restore them if you have a hardware failure. For more details, see <u>Windows 7: Exploring Credential Manager and Windows Vault.</u>

6: Display projection and Windows Mobility Center

If you give lots of presentations, you'll welcome a new tool in Windows 7 that makes it easy for you to display your Windows 7 portable computer's desktop on a projector. Just press the Windows logo key + P and you'll see the pop-up box shown in **Figure I**.

The first setting is the default and displays on the computer screen only. The second setting clones the display on the computer screen to the projector. The third setting extends the desktop across both the computer screen and the projector, and the fourth setting displays via the projector only and turns off the computer screen.



Figure I

Pressing the Windows logo key + X opens up the Windows Mobility Center. Through this interface, shown in **Figure J**, you can turn on presentation mode. This disables your screensaver, sets your wallpaper to a neutral one and even puts your IM client on "do not disturb" status.

Windows Mobility Center		Send Feedback	
Display brightness	Mute	Fully charged (100%)	Connected
û	0	VAIO Optimized 👻	Network Center
Brightness	<u>V</u> olume	B <u>a</u> ttery Status	<u>W</u> ireless Network
No display connected	No device connected	Not presenting	
<u>Connect display</u>	Sync settings	Turn on	
External Display	Sy <u>n</u> c Center	Presentation Settings	

Figure J

7: Text tuning and color calibration

Your computer does the work, but your monitor is what you look at all day. If it doesn't look good, you don't get the most out of your computing experience, and you can even strain your eyes. Windows 7 includes two great tools for adjusting your display to fit your preferences.

You can access the ClearType Text Tuner from Control Panel or from the command line (cttune.exe). If you have multiple monitors, you can tune the type on each of them individually, as shown in **Figure K**.

The tuning tool works somewhat like those eye charts at the optometrist's office: You select the one that looks best to you, as shown in **Figure L**.

In addition to the text tuner, Windows 7 provides a color calibration tool. It's accessible from the Control Panel or from the command line (dccw.exe). It helps you to adjust the gamma, brightness, contrast, and color rendition on your monitors for the best display, as shown in **Figure M**.



Click the text sample that	looks best to you (2 of 4)	
The Quick Brown Fox Jumps	The Quick Brown Fox Jumps	The Quick Brown Fox Jumps
Over the Lazy Dog. Lorem	Over the Lazy Dog. Lorem	Over the Lazy Dog. Lorem
ipsum dolor sit amet,	ipsum dolor sit amet,	ipsum dolor sit amet,
consectetuer adipiscing elit.	consectetuer adipiscing elit.	consectetuer adipiscing elit
Mauris ornare odio vel risus.	Mauris ornare odio vel risus.	Mauris ornare odio vel risus
Maecenas elit metus,	Maecenas elit metus,	Maecenas elit metus,
pellentesque quis, pretium.	pellentesque quis, pretium.	pellentesque quis, pretium
The Quick Brown Fox Jumps	The Quick Brown Fox Jumps	The Quick Brown Fox Jumps
Over the Lazy Dog. Lorem	Over the Lazy Dog. Lorem	Over the Lazy Dog. Lorem
ipsum dolor sit amet,	ipsum dolor sit amet,	ipsum dolor sit amet,
consectetuer adipiscing elit.	consectetuer adipiscing elit.	consectetuer adipiscing elit
Mauris ornare odio vel risus.	Mauris ornare odio vel risus.	Mauris ornare odio vel risus
Maecenas elit metus,	Maecenas elit metus,	Maecenas elit metus,
pellentesque quis, pretium.	pellentesque quis, pretium.	pellentesque quis, pretium

Figure L

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Figure M

8: System Repair Disc

The Vista Service Pack 1 betas included a new feature that let you easily create a system repair disc with a friendly graphical interface, but it was removed in the final release of SP1. Windows 7 restores this functionality. Just click Start and type *System Repair* in the Search box. Click on Create A System Repair Disc to open the dialog box shown in **Figure N**.

Create	a system repair disc	Send Feedback	-		23
Select a	CD/DVD drive and insert a blank o	disc into the drive			
A system system re restore y	repair disc can be used to boot acovery tools that can help you r our computer from a system imag	your computer. It also conta ecover Windows from a seri ge.	ains W ious e	/indow rror or	S
Drive:	DVD RW Drive (G:)	•			

Figure N

To use the disc, put it in your drive and reboot the computer from the disc. (You may have to set the CD/DVD drive as the primary boot device in your BIOS.) Then, you'll get a list of system recovery options, which include:

- Startup repair
- System restore
- System image recovery
- Windows memory diagnostic
- Command prompt

9: Better backup utility

Of course, previous versions of Windows included a backup utility, but this tool has been significantly improved in Windows 7. Vista's backup program was user friendly but not very flexible. Windows 7 gives you more granular control over what you want to back up.

You can invoke the Backup And Restore applet from Control Panel or by typing *Backup* in the Search box on the Start menu. You can back up your files to a local hard disk, a removable disk, a DVD, or another computer on the network. (You may need to provide credentials to access a network location.) Then, you can choose to back up libraries or individual folders, as shown in **Figure O**. You can also exclude specified folders from the backup.

What do you	want to back up?	
Select the check that not all item included in the l	box of a library, folder, or drive to include it in the s in the folder or subfolders will be backed up. Item backup.	backup. A filled check box means s with cleared check boxes are not
	Videos Library	
Þ] Additional Data	
a 📑 Compu	ter	
4 💷 🕹 V	IN7 (C:)	-
	CASIO Photos and Movies	
	DebData	=
	Eastfield	
	Microsoft	
▷ 🛄]	PerfLogs	
	PocketPC Backups	
▶	Program Files	3
Include a syst	em image	
A system im	age is a copy of the drives required for Windows to	run. You can use it to restore your
computer if	t stops working.	

Figure O

10: PowerShell v2

Windows PowerShell (**Figure P**) is a command-line shell interface and scripting tool that makes it easier for Windows administrators to automate tasks using *cmdlets*, which are commands that perform single tasks, and *scripts*, which are made up of multiple cmdlets to perform more complex, multi-step tasks.

🔁 Windows PowerShell						
Windows PowerShell Copyright (C) 2009 Microsoft Corporation. All rights reserved.						
PS E:∖Us PS C:∖>	PS E:\Users\debshinder.TACTEAM> c: PS C:\> Get-Service Where-Object {\$status -eq "stopped">					
Status	Name	DisplayName				
Stopped Stopped	ALG AppIDSvc AppMgmt AxInstSU bthserv CertPropSvc clr_optimizatio COMSysApp Creative Audio defragsvc dot3svc EapHost ehSched Fax FontCache FontCache3.0.0.0 getPlus(R) Inst hkmsvc HomeGroupProvider idsvc IKEEXT IPBusEnum KeyIso	Application Layer Gateway Service Application Identity Application Management ActiveX Installer (AxInstSU) Bluetooth Support Service Certificate Propagation Microsoft .NET Framework NGEN v2.0 COM+ System Application Creative Audio Engine Licensing Ser Disk Defragmenter Wired AutoConfig Extensible Authentication Protocol Windows Media Center Scheduler Service Fax Windows Presentation Foundation Fon getPlus(R) Installer Health Key and Certificate Management HomeGroup Provider Windows CardSpace IKE and AuthIP IPsec Keying Modules PnP-X IP Bus Enumerator CNG Key Isolation				
Stopped Stopped	KtmRm 11tdsvc Max:20xx	KtmRm for Distributed Transaction C Link-Layer Topology Discovery Mapper				
Stopped Stopped Stopped	Microsoft Offic MSDIC	Media Center Extender Service Microsoft Office Groove Audit Service Distributed Transaction Coordinator				

Figure P

Previous versions of Windows include a command-line interpreter (command.com or cmd.exe), but PowerShell is much more powerful, providing a UNIX-like command environment that can automate almost every GUI functionality.

PowerSheLl can be downloaded to run on Windows XP or Vista, but Windows 7 is the first client operating system that comes with it built in. (It is also installed by default in Windows Server 2008 R2.) PowerShell v2 adds about 240 new cmdlets, as well as new APIs and features, such as the ability to invoke PowerShell scripts and cmdlets on a remote computer. You can find out more about PowerShell on the <u>Microsoft Web site</u>.

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Version history

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