

# THE WINDOWS 7 GUIDE



## FROM NEWBIES TO PROS

by Matt Smith

By: Matt Smith

<http://www.smidgenpc.com>

This manual is intellectual property of MakeUseOf. It must only be published in its original form. Using parts or republishing altered parts of this guide is prohibited.

## Table of Contents

Chapter 1: Introduction .....	5
Windows 7 – Microsoft's Chance for Redemption.....	5
System Requirements .....	6
Windows 7 Versions.....	6
Chapter 2 – Are We Compatible? .....	8
Software Compatibility .....	8
Windows XP Mode .....	8
32-bit / 64-bit Compatibility .....	9
Driver Compatibility .....	10
Chapter 3 – Learning the New Taskbar .....	12
A Taskbar History Lesson.....	12
The New Taskbar Layout .....	12
The New Pin and Jumplist Features .....	14
Customizing the Taskbar .....	15
Chapter 4 – Using and Customizing Windows Aero .....	16
The Basics of Aero .....	16
New Aero Interface Features.....	16
Learning to Customize Aero .....	17
Learning to Customize Wallpapers .....	20
Chapter 5 – Windows 7 Libraries.....	25
Going to the Library.....	25
Creating and Managing Libraries .....	26
Chapter 6 – Windows 7 Software .....	27
The New Paint.....	27
The New Wordpad .....	28
The New Calculator.....	29
Windows Media Player 12 .....	30
Missing Software.....	31
User Account Control.....	34
Microsoft Security Essentials.....	35
Windows Defender .....	36
Windows Firewall .....	37

Chapter 7: Windows 7 Networking – Easy As Pie .....	39
No Place Like HomeGroup.....	39
Wireless Networking Made Easy .....	40
Chapter 8: Windows 7 and Gaming.....	42
A New Performance Champion? .....	42
New Features in DirectX 11 .....	43
Using Games Explorer.....	44
Conclusion.....	46



# Chapter 1: Introduction

---

## Windows 7 – Microsoft's Chance for Redemption



There is no disputing that Vista was poorly received. Vista made changes to the file system, user interface and other critical components of the operating system that were essential. Unfortunately, such changes meant that Vista had compatibility problems. The early days of Vista were plagued with complaints about peripherals that no longer worked because there were no Vista drivers available. Some older programs also began to malfunction.

Chaos ensued, and Windows 7 was called to bat early. The official retail release date of Windows 7 was October 22, 2009, less than three years after the release of Vista. Vista, by contrast, had arrived five years after XP.

If you are coming from Windows XP you will still be in for a bit of a shock. Windows 7 is more refined than Vista, but there is no ignoring the fact that, in many ways, Windows 7 is fundamentally different from XP. The taskbar is completely different, and the user interface has many other large changes. You'll also find a plethora of security solutions that were not present in Windows XP.

Those coming from Vista will have it easier. Although Microsoft has been doing its best to distance itself from Vista, Windows 7 is not entirely different. Many features, like Windows Aero and User Account Control, still exist. The new taskbar will require some adjustment, but you're in otherwise familiar territory.

## System Requirements

Windows 7 does have some minimum system requirements that your computer must meet in order for Windows 7 to run smoothly (or at all). They are as follows:

- 1 gigahertz processor
- 1 gigabyte of RAM
- 16 gigabyte (for 32-bit) or 20 gigabyte (for 64-bit) hard drive
- DirectX 9 compatible graphics processor

If you have not upgraded yet you can use the Windows 7 Upgrade Advisor to examine your computer's compatibility with Windows 7. The Upgrade Advisor will do a complete examination on your PC and let you know if anything on your computer is incompatible with Windows 7.

## Windows 7 Versions

Windows 7 continues the Microsoft tradition of releasing different versions of Windows for different users. There are four versions of Windows 7 available – Starter, Home Premium, Professional and Ultimate.

Windows 7 Starter can't be purchased at retail. It is meant primarily for netbooks and is a replacement to Windows XP in that market. Windows 7 Starter has some features disabled. There is no Windows Aero theme, Personalization features (such as changing the wallpaper) are not available, and there is no support for multi-media features such as Windows Media Center.



Windows 7 Home Premium is considered the least expensive full version of Windows 7 and it is the least expensive version you can buy at a retailer. Windows 7 Professional is an upgrade that includes some useful utilities that both home and business users can appreciate. Windows 7 Ultimate has advanced security and language features. To help sort out what each version offers I've created the table below.

<b>Feature</b>	<b>Starter</b>	<b>Home Premium</b>	<b>Professional</b>	<b>Ultimate</b>
<b>Windows Aero Theme</b>		X	X	X
<b>Personalization Features</b>		X	X	X
<b>Windows Media Center</b>		X	X	X
<b>Mutli-Monitor Support</b>		X	X	X
<b>XP Compatibility Mode</b>			X	X
<b>Domain Join (for business networks)</b>			X	X
<b>Backup and Restore for Networks</b>			X	X
<b>Bitlocker Built-In Encryption</b>				X
<b>Support for 35 Different Languages</b>				X

There are more than a few people who are unhappy with Microsoft's decision to make Windows 7 Starter the default operating system for netbooks. As you can see in the above table, it is actually less functionality than Windows XP in several ways. You can at least personalize your netbook with XP, but with Starter you're stuck with the default settings.

Windows 7 Starter aside, the break-down between Windows 7 versions makes a lot of sense. Vista offered both a Home Basic and Home Premium version. The differences between these were a bit confusing, and Home Basic was more basic than you'd expect from a supposedly complete operating system. Windows 7 Home Premium, however, has everything that a home user is going to need with the possible exception of the XP compatibility mode, a feature we'll talk about more in the next chapter.

Windows Professional and Ultimate, on the other hand, are more appropriate for business and enterprise users. They also cost more. The features offered in Professional and Ultimate have their uses, but this guide is focused on home users.

# Chapter 2 – Are We Compatible?

---

## Software Compatibility

As mentioned earlier, Windows 7 is not dramatically different from Windows Vista. This can be revealed by looking at the version numbers of each operating system. Windows Vista's latest release has the version number 6.0, while Windows 7 has the version number of 6.1. This indicates that, certain new features and changes aside, the underlying code of Windows Vista and Windows 7 are very similar.

This is good news if you are migrating from Vista, because it means you'll have virtually no software compatibility issues to worry about. While it is certainly possible that there is a Vista program somewhere in the universe that absolutely won't work on Windows 7, I have never heard of this occurring. If a program runs on Windows Vista, it should run on Windows 7.

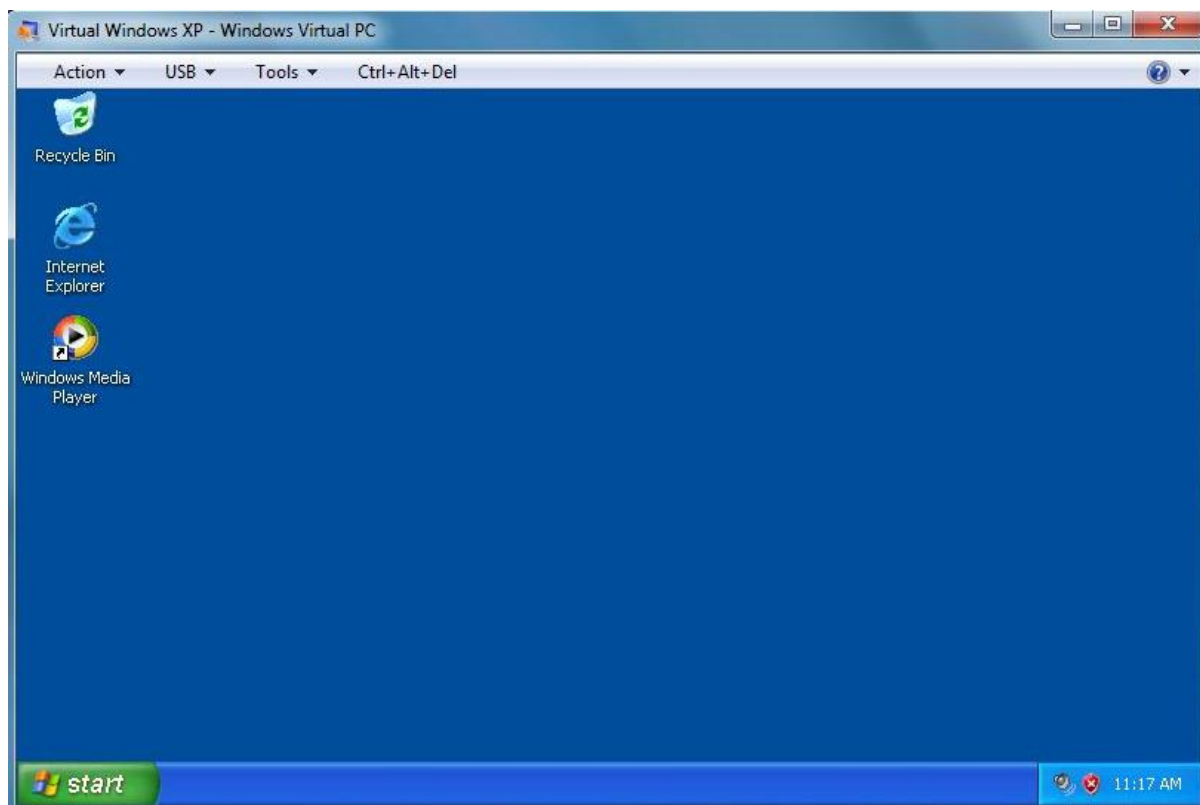
Windows XP is another story. The version number of Windows XP is 5.1. This indicates that there are some major changes between XP and Windows Vista/7 that run deeper than superficial features and interface work. There is the possibility that the programs you have installed on XP won't work with Windows 7. This is likely if the developer has not released any patches or updates for the program since the release of Windows Vista.

## Windows XP Mode

If you have the Professional or Ultimate version of Windows 7 you can address any compatibility issues that you have with Windows XP programs by using the Windows XP Compatibility Mode feature.

The name of the feature actually under-sells what the feature does. Previous attempts by Microsoft to enable compatibility have functioned by making adjustments to the way the installed operating system handles a program, but went no further. The Windows XP Compatibility Mode, on the other hand, allows you to launch a full virtual machine running Windows XP.





Running the Windows XP Compatibility Mode opens a new window on your desktop that is running a full version of Windows XP. In effect, your computer is running two operating systems at once. This means that the compatibility offered through Windows XP mode is perfect. Any program that would run in Windows XP should run in Windows XP compatibility mode.

To use a program with XP mode, run the program's installer within the virtual machine running Windows XP. Installation will proceed exactly as it would on a normal PC running Windows XP.

## 32-bit / 64-bit Compatibility

One new compatibility issue that is becoming more common with is compatibility between 32-bit and 64-bit operating systems. In the past almost everyone used a 32-bit operating system. However, the way a 32-bit operating system addresses memory results in some limitations.

The most problematic is the limit on how much RAM a system with a 32-bit operating system can use at once. A computer with 32-bit Windows 7 can only use four gigabytes of RAM or less (depending on the system and the system's settings). Many vendors are now shipping desktops with four to six gigabytes of RAM, so this is obviously not a good situation. A 64-bit operating system can handle up to 128 gigabytes of RAM, so vendors are starting to ship many computers with a 64-bit version of Windows 7.

Windows 7 Ultimate

Copyright © 2009 Microsoft Corporation. All rights reserved.



#### System

Rating:



Processor:

Intel(R) Core(TM)2 Duo CPU  
E4500 @ 2.20GHz 2.20 GHz

Installed memory (RAM):

4.00 GB

System type:

64-bit Operating System

However, the difference in the way 32-bit and 64-bit operating systems work can cause compatibility problems. These problems mostly exist on the 64-bit side. While most modern software does include 64-bit support, you could occasionally run into programs that are only coded for 32-bit. Your biggest compatibility issues will come from programs that were created during the days of Windows XP. The 64-bit version of XP was a very niche operating system, so most developers making programs for XP didn't bother coding for it.

If you have Windows 7 Professional or Ultimate you can use Windows XP Mode to try and resolve these compatibility issues. If you have 64-bit Windows 7 Home Premium, however, it won't be possible to run programs that were only coded for a 32-bit operating system.

### Driver Compatibility

Of all the compatibility problems you can run into with a new operating system, driver compatibility is one of the worst. Drivers are pieces of code that make it possible for computer hardware to communicate with the operating system. They are very important, but they're also very sensitive, so driver compatibility issues often become a problem when you migrate between operating systems.

If you're coming from XP you'll find that driver compatibility can still be an issue. It is ultimately up to the vendor of each piece of computer hardware to come up with the drivers for their product. If you have an older product – say, a printer from 2001 – the vendor may have decided to discontinue support for your product. If this happens they won't be writing new drivers, so your older device won't work with new operating systems. If you can't find Windows Vista or Windows 7 drivers for your device you're simply out of luck.

Windows Vista users have it easier. As mentioned numerous times already, Windows Vista and Windows 7 are similar in many ways. They are some similar that Windows Vista drivers sometimes work on Windows 7. Resorting to such Frankenstein measures is rarely required, however, because virtually all vendors who offer Vista drivers also offer Windows 7 drivers. The similarities between the operating systems make cranking out a new Windows 7 driver easy.

# Chapter 3 – Learning the New Taskbar

---

## A Taskbar History Lesson

The first thing that you'll notice when you start using Windows 7 is that the Windows taskbar has been given its first major revision since Windows 95. Instead of using boxes with text and an icon to indicate an open task, the new taskbar uses icons only. The taskbar also no longer shows every single task that is open – instead, tasks are grouped by program, and all instances of an open program are displayed by hovering over a program's icon.



This change can be more than a little unsettling for new users. The Windows taskbar has long been the cornerstone of the Windows user experience. Changing it was a brave move by Microsoft, but also a necessary one. The old taskbar was created for Windows 95, an operating system that was made to run on computers with 66Mhz processors and 1GB hard drives. The concept of showing a task as a large, rectangular, text-labeled entity made sense because it wasn't even possible to run more than few tasks at a time. Computers weren't powerful enough to run five or ten programs at once. The taskbar never became full, so there was plenty of room for displaying information.

This began to change; however, as computers became more powerful, a modern computer can easily run numerous programs at once. Having ten browser windows open while simultaneously using a word processor and playing a game of Bejeweled is not uncommon. But while the ways we used Windows changed, the taskbar didn't, resulting in nasty taskbar traffic jams.

## The New Taskbar Layout

The new taskbar solves these traffic jams by compacting the information displayed. Programs are now labeled only by large icons. These icons do not represent an individual instance of the program, but rather every instance of the program currently running. The taskbar has turned into a tree, and each program is now a branch on that tree.

Let's say, for example, that you have three Word documents open. The Word icon will appear in the taskbar, and it will be highlighted to indicate that Word is currently running. To access a specific document you have open you must move your cursor

over the Word icon. This will create a thumbnail view of the Word documents you have opened. You can then select the document you want to edit.



Another major redesign of the taskbar focuses on what is now called the Notification Area. This used to be called the System Tray. It is the area on the extreme right of the taskbar that displays mini-icons of programs running in the background, such as your antivirus. Instead of expanding across the width of the taskbar, as was the case in previous versions of Windows, expanding the Notification Area causes a small menu to open upwards. On this menu you can see the icons of the programs running in the background and you can open those programs or edit their settings. None of these icons will ever appear on the taskbar – they will only appear when you open up the menu.



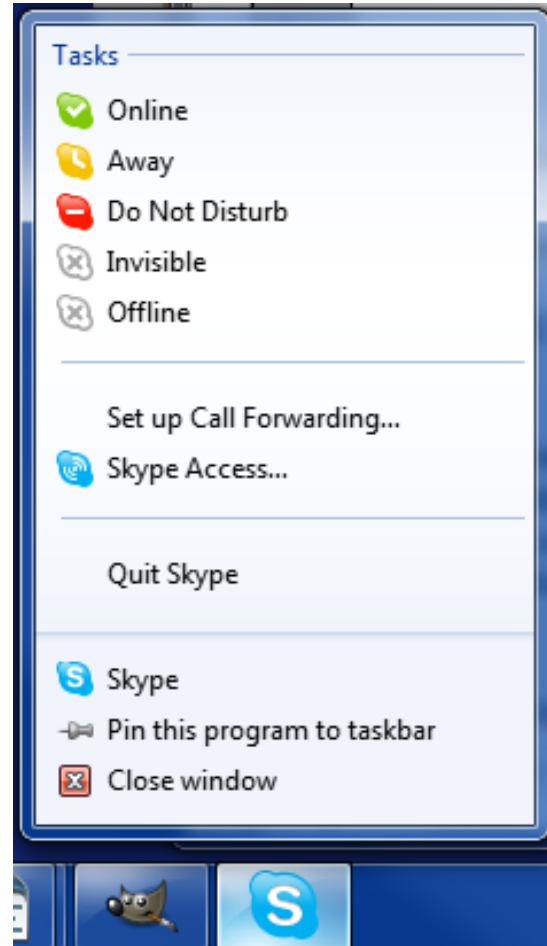
The only three icons that appear on the left of the Windows 7 taskbar are icons for notifications, network status and volume. Clicking on each icon will open up a small window or menu with relevant information. Finally, to the left of the date and time, you'll find a small blank rectangle with a glassy appearance. This enables Windows Peek, a new Aero interface feature. Windows Peek will be discussed further in the next chapter.



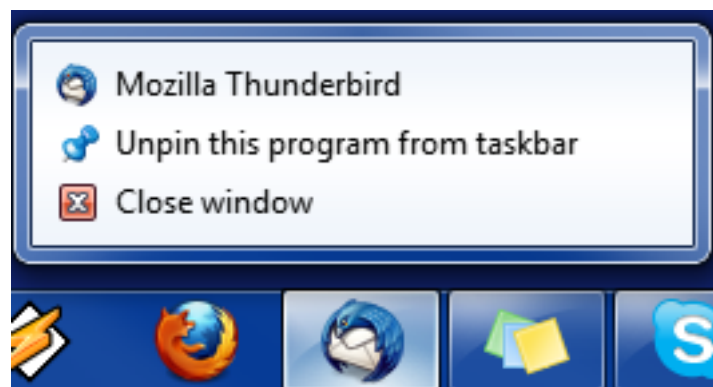
## The New Pin and Jumplist Features

When Windows 98 launched, it introduced an element of the taskbar called Quick Launch. This was an array of icons to the right of the Windows Start button. The icons could launch a program and served as a way to quickly access a program from the taskbar.

The Windows 7 taskbar gets rid of the dedicated Quick Launch section and has replaced it with the concept of "pinning" a program to the taskbar. This is accomplished by right-clicking an icon and then clicking **Pin this program to the taskbar**. Once pinned, the icon will always appear on the taskbar even if the program is closed. You can quickly launch the program by clicking on the icon. Microsoft has also introduced a feature called Jumplists. This feature makes it possible to perform common actions related to a program by right-clicking the icon in the taskbar. For example, I often use Skype. When I right-click Skype the Jumplist opens for the program. From this list I can change my Skype status. Another example is Google Chrome. By accessing the Jumplist for Chrome I can launch recently visited and frequently visited websites.



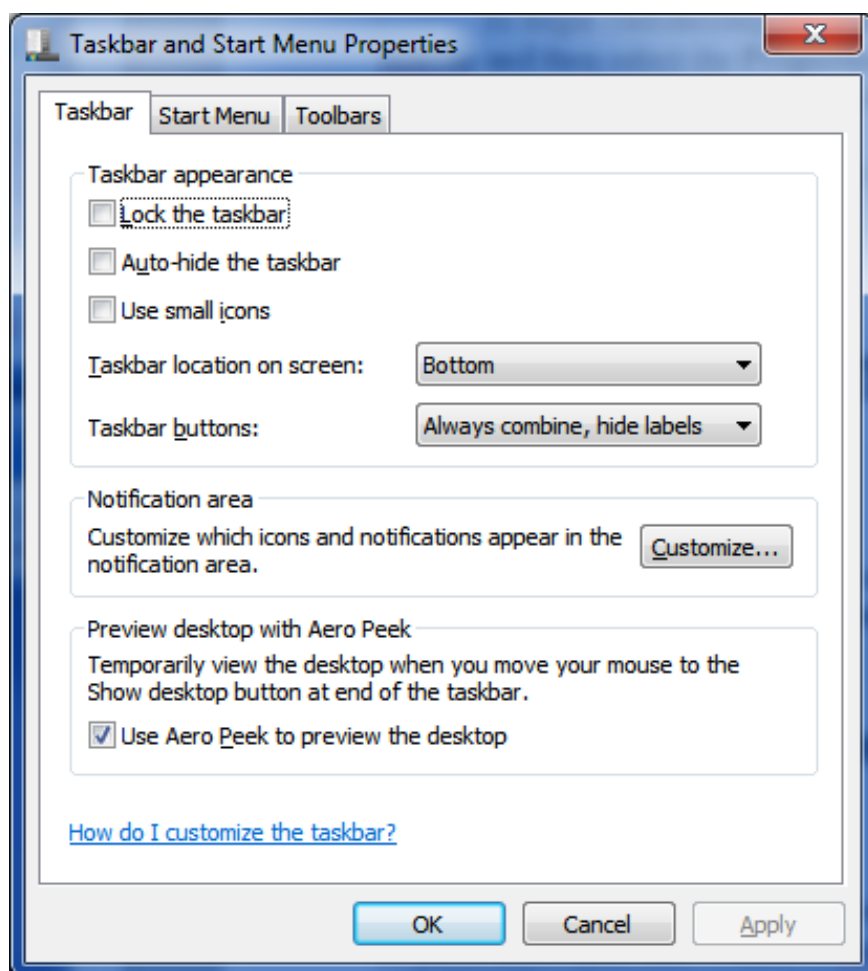
The Jumplist feature is enabled by Windows 7, but it is not completely controlled by Microsoft. Each individual developer has to support the feature in their software. If the developer has not yet added Jumplist support a menu will still open when you right-click a taskbar icon, but only default options (such as pinning or unpinning a program to the taskbar) will appear.



## Customizing the Taskbar

The Windows 7 taskbar is one of the best new features introduced in Windows 7 and will be of immense help if you do a lot of multi-tasking. With that said, you may decide that I'm insane, and that the new taskbar isn't something you want to use. If you don't like the new taskbar you can customize it so that it works like the taskbar in Windows Vista. You can also customize specific settings to adjust how the new taskbar appears and functions.

To begin customizing the Windows 7 taskbar you will need to right-click a blank area of the taskbar and then select the **Properties** option from the menu that appears. This will open the Taskbar and Start Menu Properties window. At the top of this window is the Taskbar Appearance section.



In order to revert the taskbar back to the older style you need to take the following steps. First, click the **Use Small Icons** checkbox. Then open the Taskbar Buttons drop-down menu and change the setting to **Combine when taskbar is full**. Now press **Apply** at the bottom of the window. Presto! The old taskbar is back.



# Chapter 4 – Using and Customizing Windows Aero

---

## The Basics of Aero

According to Microsoft's own literature, Windows Aero is a "theme" for Windows. In reality, it is much more than that. Windows Aero is a type of user interface, and although it looks similar to the older interface in many ways, it is actually quite different.

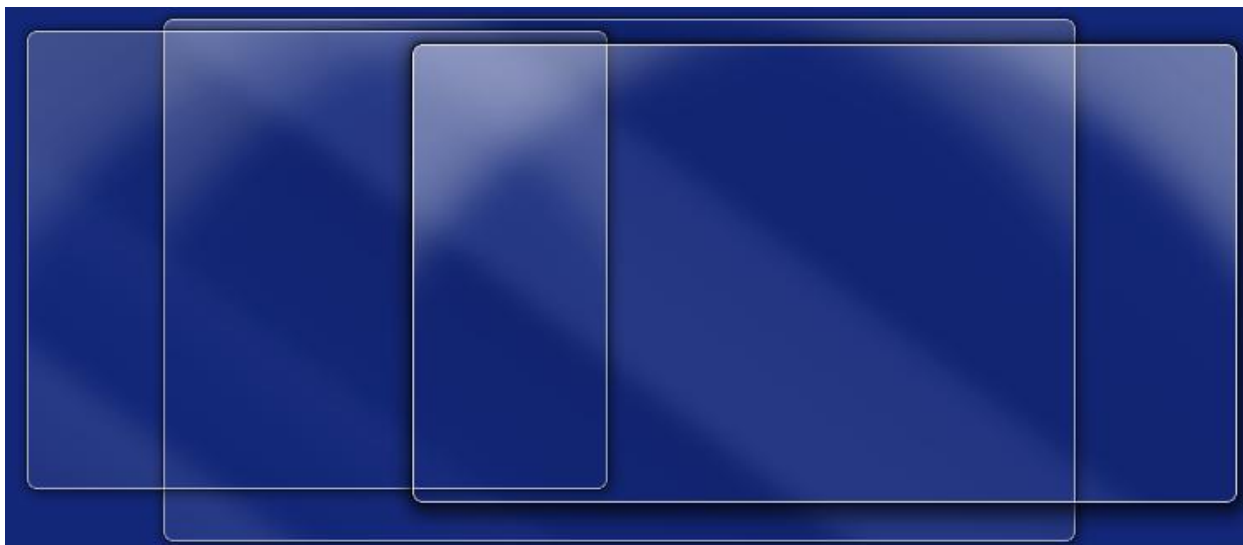
The first thing many users notice about Windows Aero is that it looks better than the older Windows style. This difference in appearance is indicative of the new interface's use of GPU power, rather than CPU power, to render the interface. Using the GPU makes it easier to enable special effects in the interface, and these effects are used to enable new functionality. Although you may not realize it at first, Windows Aero has numerous useful features that make it easier to use Windows 7.

Aero should be on by default, but if Windows 7 does not have Aero active you'll need to take the following steps. Right-click on your Desktop and then click **Personalization**. This will open a window that is dominated by a selection of themes. The Windows Aero themes will be at the top. When you pick a theme your computer will instantly change to that theme. That's it! If you for some reason don't like Windows Aero you can switch back to Windows Basic (the old style) in this same window. Also, remember that Windows 7 Starter can't use Personalization options, so you won't be able to use Windows 7 Aero.

## New Aero Interface Features

Microsoft has added some new features to Windows Aero in Windows 7. These new features range from kind of cool to incredibly useful.

One feature added is Aero Peek. This was touched on briefly in the taskbar chapter. On your taskbar you will find a blank rectangle on the right. Hovering your cursor over this will cause all of the windows you have open to become transparent – this is the Aero Peek feature.



The Aero Peek feature can also be accessed through open programs on your taskbar. Hover or click on the program's icon in order to open the thumbnail view. Then hover over a thumbnail to activate Aero Peek.

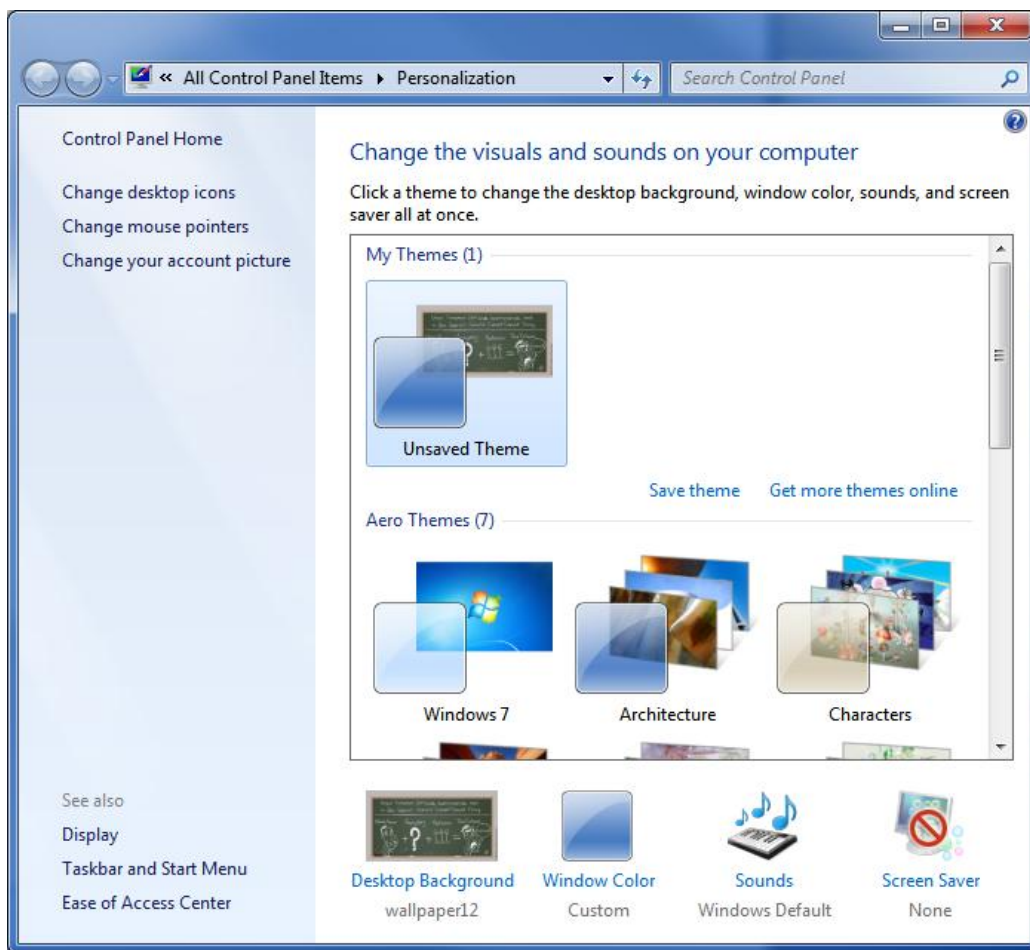
Another new (and hilarious to use) feature is called Aero Shake. To activate Aero Shake you just need to grab a window with your mouse cursor and shake it like a dog shakes a chew toy. No, I'm not kidding – try it. Grab the window and drag it back and forth rapidly. All of your windows except for the one that you are using will be minimized. Although you might feel a bit silly using this one in a busy office, it is actually a convenient feature.

That's nothing, however, compared to Aero Snap. This new feature is activated by dragging a window to either side of your monitor and holding it there for a second. The window's size will be automatically adjusted so that it takes up the left half of the screen. If you drag a second window to the right side of your monitor it will be automatically sized to take up the right hand of the screen. This is immensely useful when you need to compare the contents of two windows. Aero Snap will also automatically maximize a window if you drag it to the top of the display.

## Learning to Customize Aero

The ease with which Aero can be customized is a major improvement over previous versions of Windows. Windows XP was a real pain to mess with because many parts of the interface had to be adjusted independently if you wanted to customize the appearance of the operating system. Windows 7 provides customization options that are easier to understand.

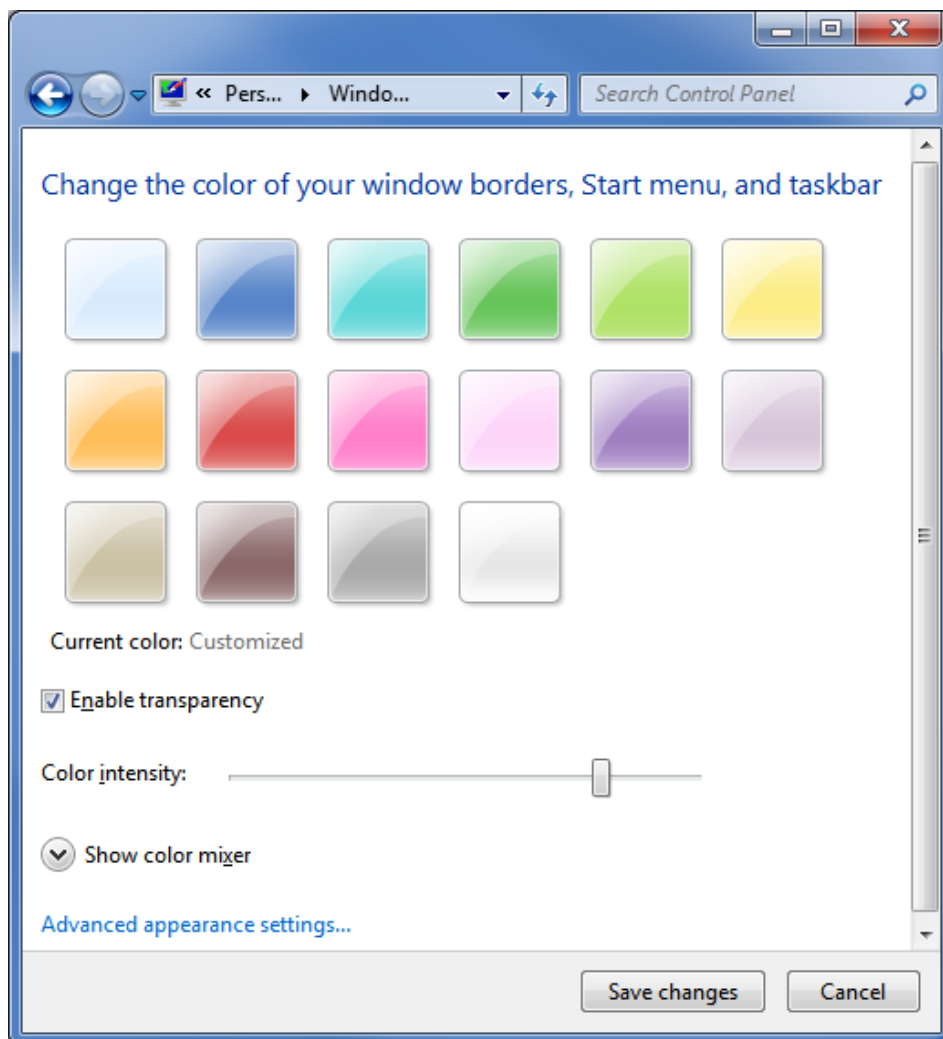
If you'd like to customize the appearance of Windows 7 you can begin by right-clicking on the Desktop and then clicking **Personalization**. This will open a window that displays the themes available.



At the top there is a section called My Themes. This is where any themes you create and save will appear. Below that are the pre-loaded Aero themes. If you'd like, you can simply pick a theme and be done with it. Note that with the exception of the Windows 7 theme, all of the pre-loaded themes include a wallpaper slideshow. We'll talk about that feature more in the last section of this chapter.

To customize the appearance of Aero, find **Windows Color** at the bottom of the Personalization window. Click on it to open the Windows Color and Appearance window. Aero lets you change the color of the Aero theme to anything you'd like, and at the top of the Windows Color and Appearance window you'll find some pre-selected suggestions. Picking one of these will cause the Windows Color and Appearance window to change to the color you selected as a means of demoing the color.





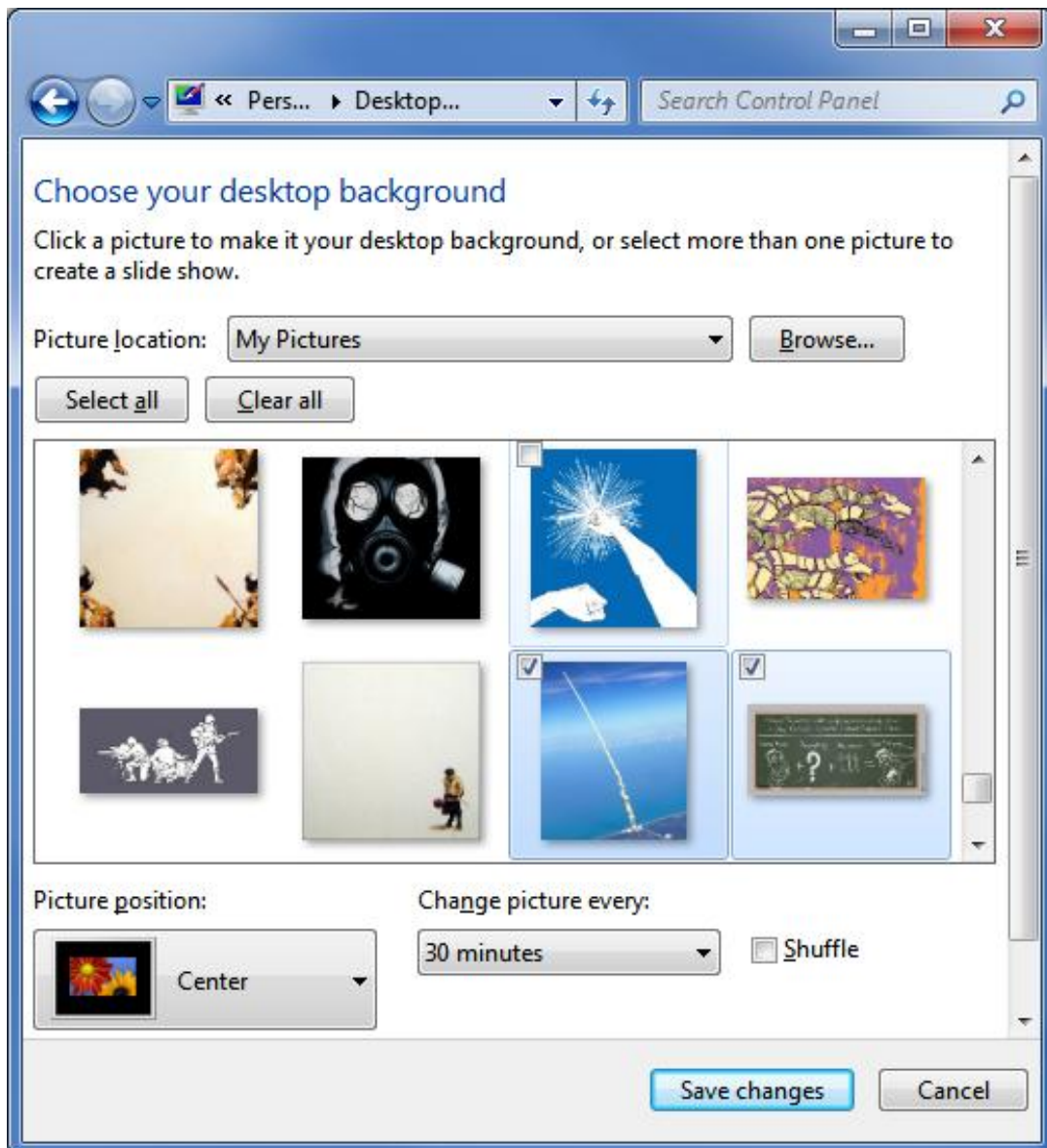
Below the color suggestions is a checkbox labeled **Enable Transparency**. This should be on by default. If you don't like the transparent effects in Windows Aero you can turn it off. You will also see a slider labeled **Color Intensity**. This slider dictates how bright the color you select for Windows Aero will be. If you place it all the way to the left the color you select won't show up at all. If you place it all the way to the right the color you select will be nearly opaque, even with transparency on.

Below the **Color Intensity** slider you'll find the **Color Mixer**. To display it you'll need to click on the drop-down arrow. The color mixer lets you make your own custom colors for display by Windows Aero.

Last, but far from least, is Advanced Appearance Settings. Opening this will open an old-fashioned Window Color and Appearance window. This is where you can get into the real nitty-gritty of changing Windows 7's appearance. You can change the colors of menus, hyperlinks, scrollbars, and more. Honestly, fiddling with the color options here will make it look like a disco ball exploded in your computer, but it doesn't hurt to experiment.

## Learning to Customize Wallpapers

Windows 7 also lets you customize the appearance of your desktop with a variety of wallpaper options. To access these options you will again need to open the Personalization window by right-clicking on your desktop and then clicking **Personalization**. At the bottom of the Personalization window you will find the Desktop Background option. Click on this to open the Desktop Background window.



As has been the case for years now, you can select any image you like and use it as a wallpaper. However, there are some new features that you might be unfamiliar with if you're coming from Windows XP.

When you select an image to be a wallpaper you have the option to Fill, Fit, Stretch, Tile or Center the image. These options have the following effects.

- **Fill** – This blows up the image until it fills your entire screen. The image is not stretched, however, so some parts of the image will not appear if the image does not have the same aspect ratio as your monitor.



- **Fit** – This blows up the image, but does not allow the image to expand beyond the borders of your display.



- **Stretch** – This stretches the image so that it fills up your entire display.

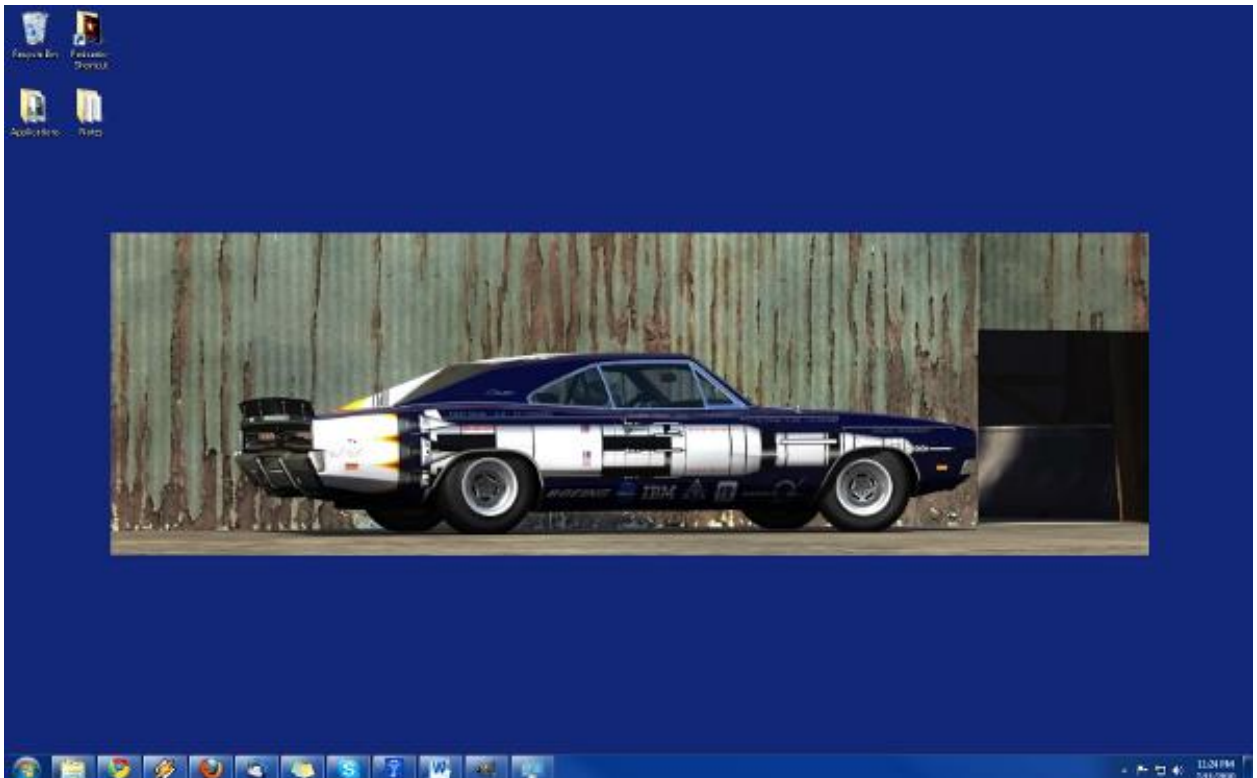




- **Tile** – This repeats the image until it fills up your entire display.



- **Center** – This makes no modifications to the image's size and places the image in the center of your display.



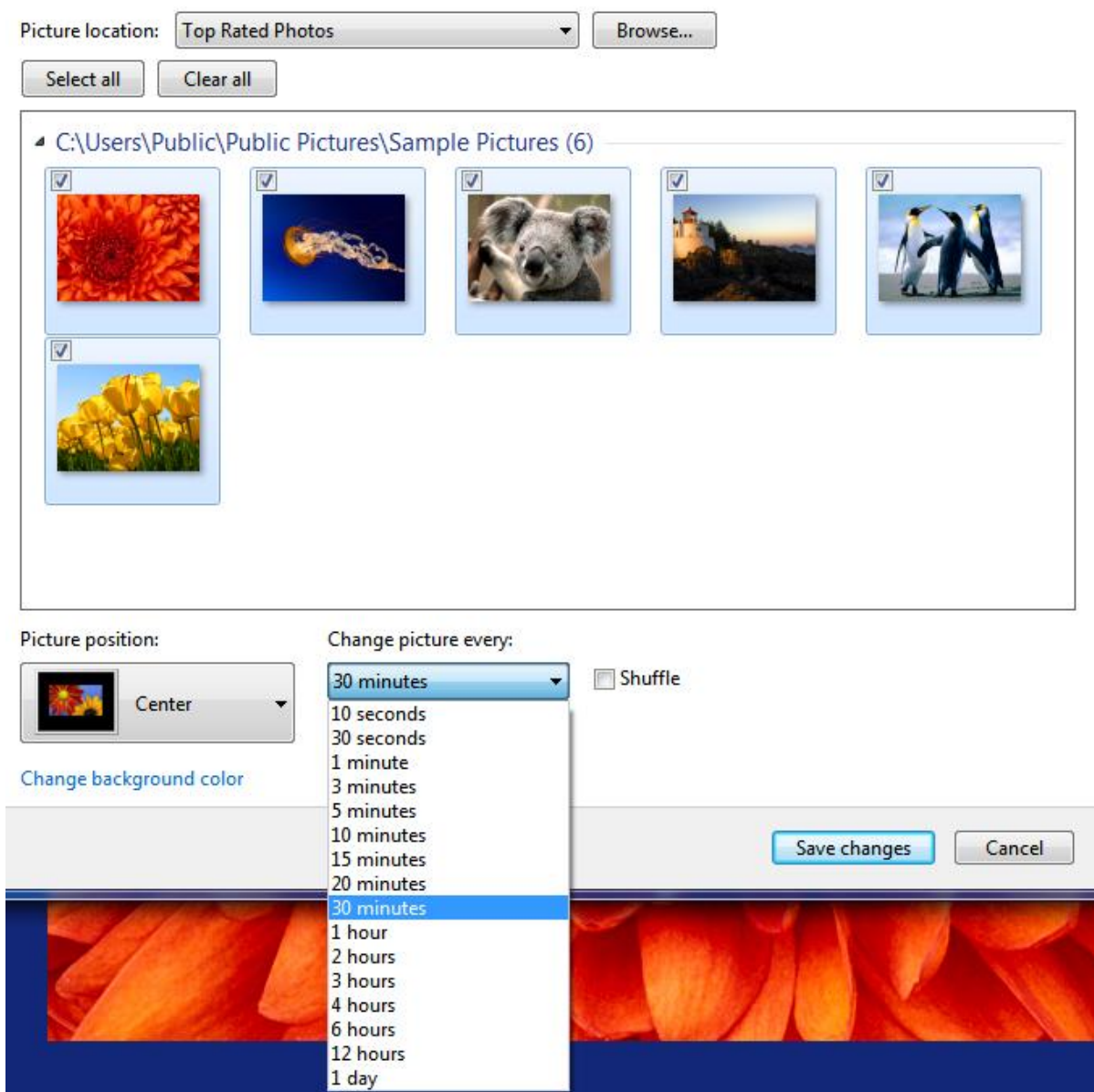


You can also make wallpaper slideshows in Windows 7. You'll note that when you browse a folder for images in the Desktop Background window *all* of the images in the folder are displayed. If you hover your cursor over an image a checkbox will appear in the upper left hand corner. If you click on this checkbox, and then click the checkbox of another image, a drop-down menu will become active at the bottom of the window.

This dropdown box lets you select how quickly Windows 7 will change between the wallpapers you selected. There are settings that range from 10 seconds to 1 day. You can also select to either have the wallpapers randomly shuffled, or you can let them display in order.

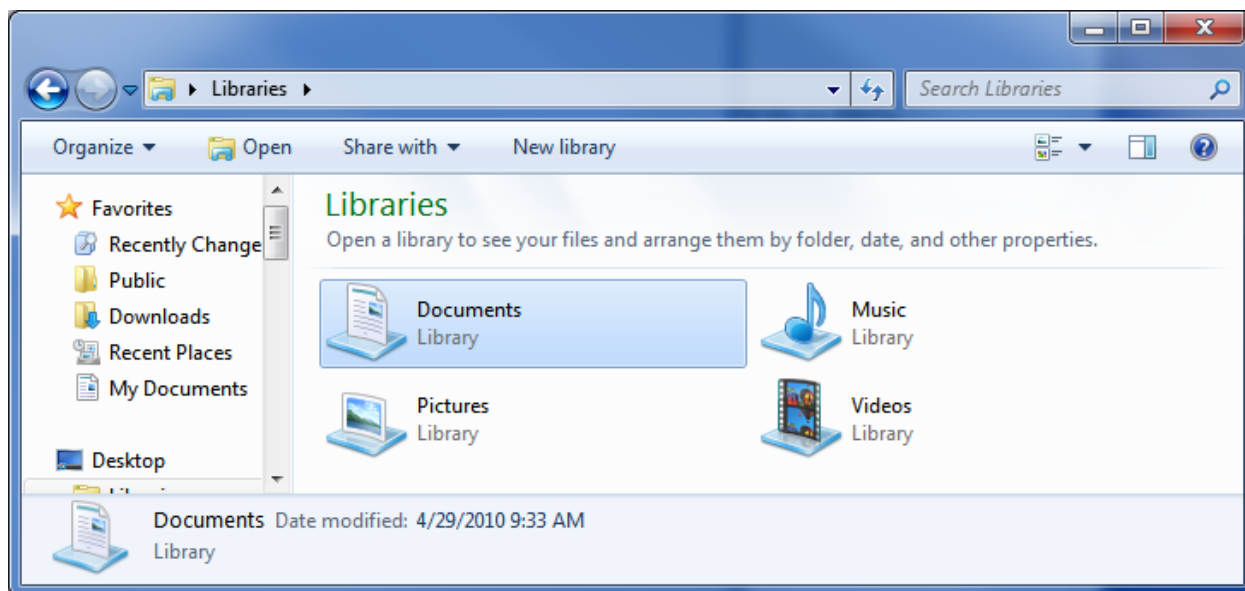
### Choose your desktop background

Click a picture to make it your desktop background, or select more than one picture to create a slide show.



# Chapter 5 – Windows 7 Libraries

## Going to the Library



One important, but often forgotten, feature in Windows 7 is Libraries. Libraries are a new method of storage that is unlike anything found in Windows before. A Library is not a folder. Instead it is a collection of folders that have their contents pooled together in a common area. Windows 7 comes with four default libraries called Documents, Music, Pictures and Videos.

At first glance a Library looks a lot like a folder. When you open a Library you will be able to see all of the folders and documents in the Library. You can add files and folders directly to the Library as well. However, the structure of the Library does not necessarily have anything to do with the structure of the files and folders on your hard drive. This subtle change can make a world of difference in a number of situations.

For example, let's say that you have a home network with several computers on it. You have some documents that you would like to share with other computers on your network, so you place them in your Public Documents folder. However, you also have some documents you don't want shared, so you place them in your My Documents folder. Under normal circumstances this could end up being a real pain in the butt because your documents would be scattered over two locations, making it more difficult to organize them. However, if you have both folders added to the Documents Library (they are by default in Windows 7), you will be able to view all of the documents from both folders in one location.

You can also view folders in a Library in ways that you couldn't normally view them. In the upper right hand corner of an open Library you will find an Arrange By drop-down menu. This drop down menu lets you sort the contents of the Library by Folder, Month, Day, Rating, or Tag. You can't do this in a normal folder.

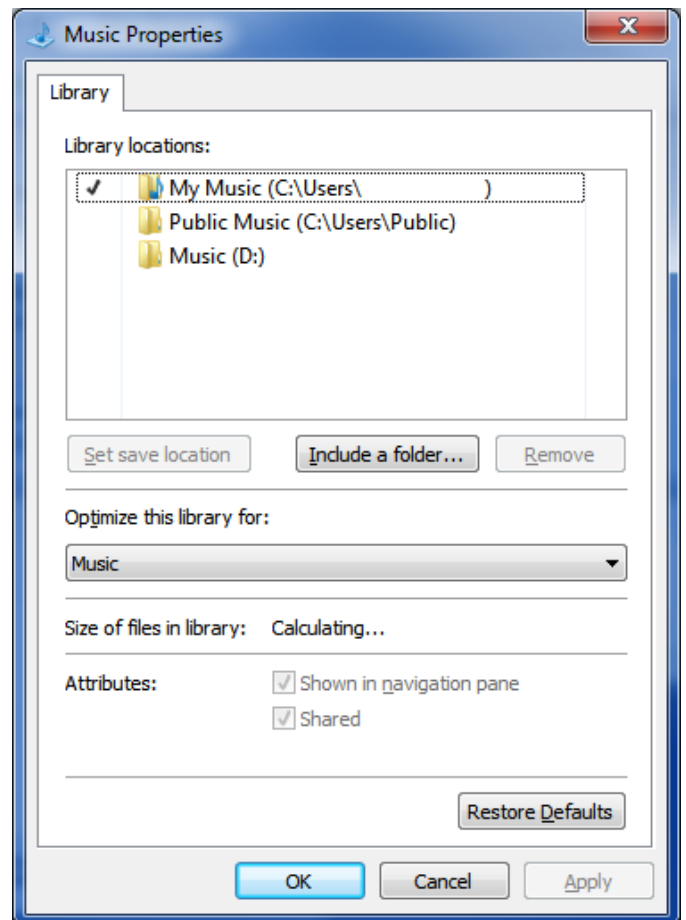
## Creating and Managing Libraries

As mentioned, Windows 7 comes with four default Libraries – Documents, Music, Pictures and Videos. These are fairly broad categories that will cover the needs of many users, but you can create a new Library.

To do this you will need to be in the Library directory. The Library directory can be found in Windows Explorer. Right-click on an empty space in the directory and then hover over the New option. This will open up the **Library** option. Click on it to create your new Library.

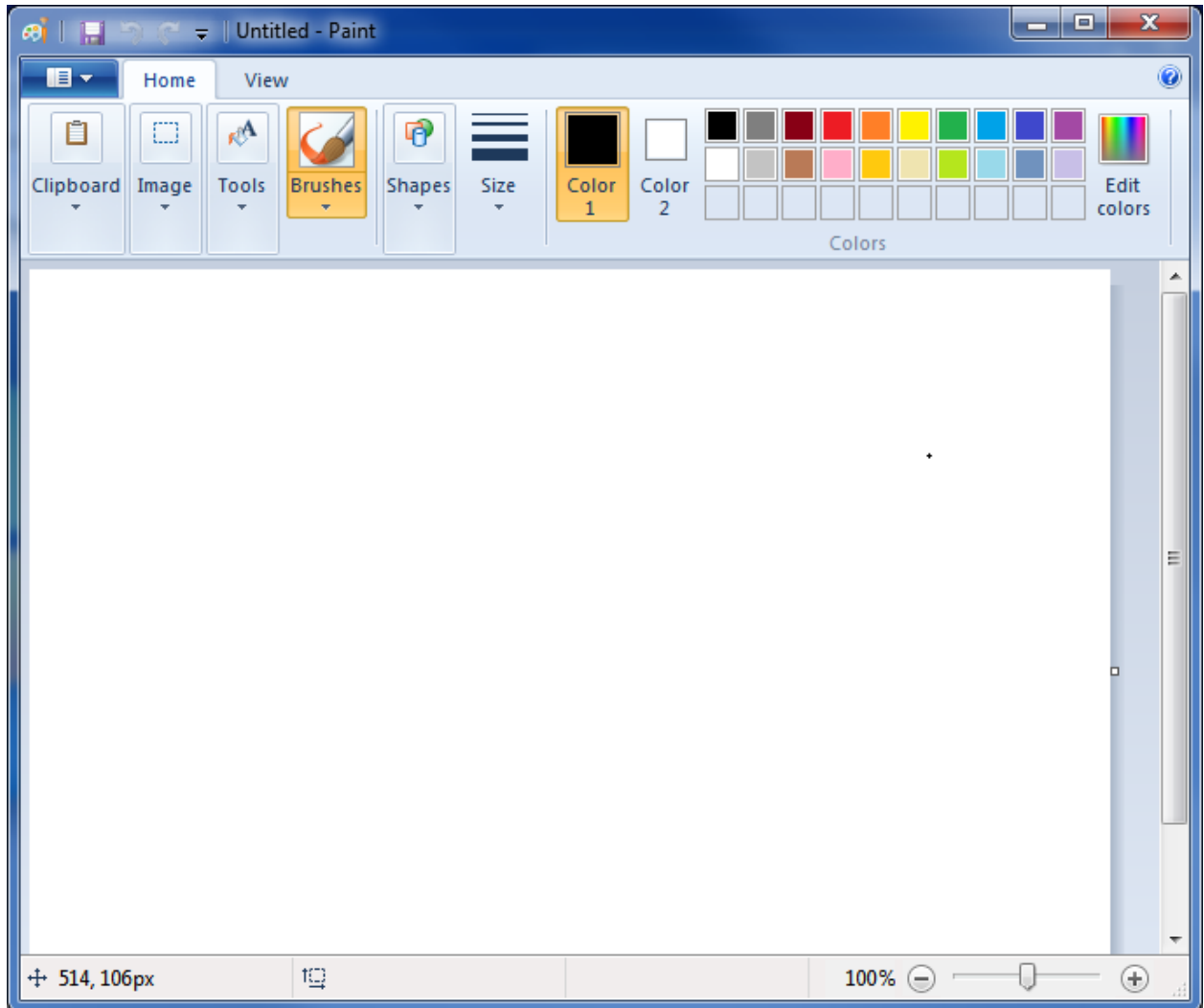
You can also manage libraries by dictating what folders will be included in a Library. Right-click on a Library and then click on **Properties**. This will open a window that displays the folders included in the Library. Click on the **Include a Folder** option in order to browse for and add a new folder. To remove a folder you simply need to click on it and then select the **Remove** option.

The final management option here is the **Set Save Location** option. Remember, Libraries are not folders, so in reality you are not saving files or folders to a Library when you drag them to or create them in that Library. You are actually creating them in one of the folders that is part of the Library. You can select the folder that will be used for this by clicking on one of the folders displayed and then clicking the **Set Save Location** option.



# Chapter 6 – Windows 7 Software

## The New Paint



Like every version of Windows, Windows 7 includes Paint, a very basic image editing program. Paint has received a minor overhaul for Windows 7, however, that is instantly noticeable when you open the program.

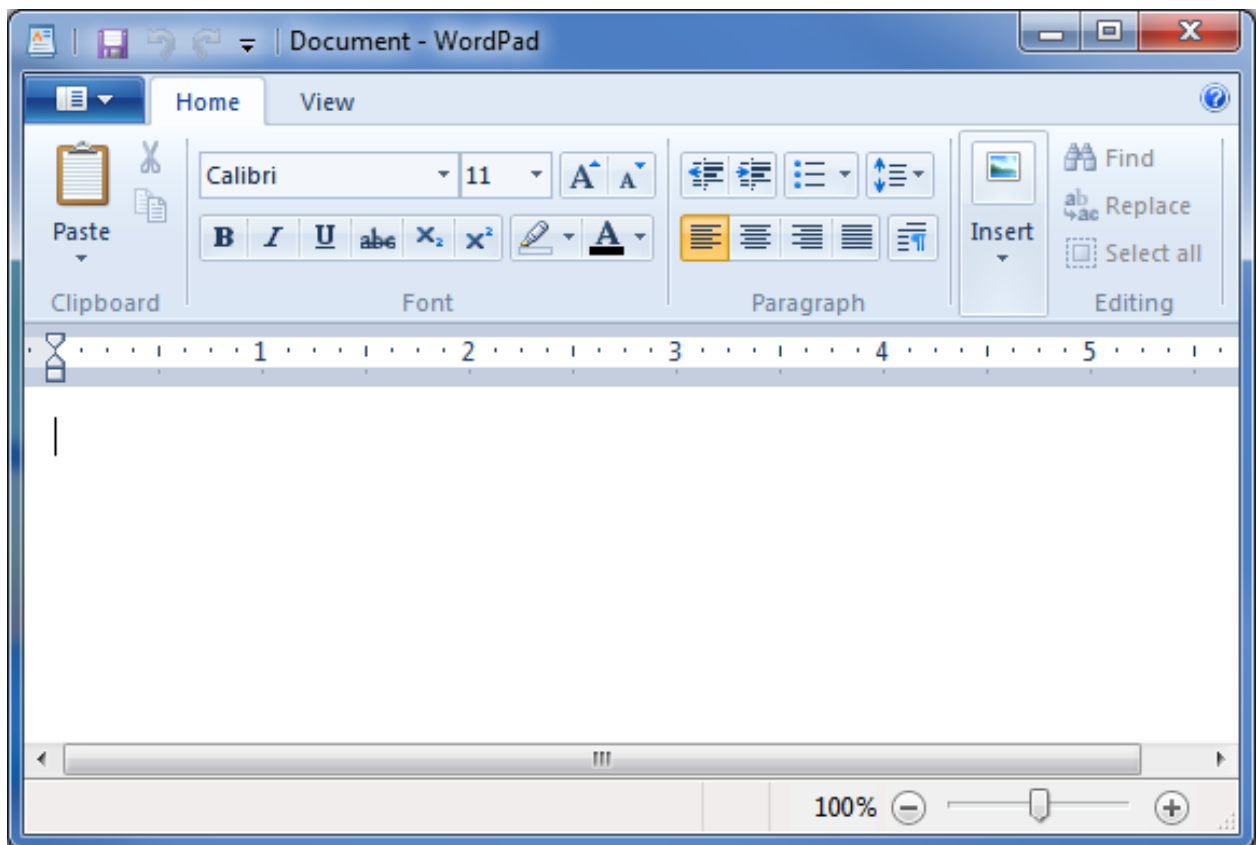
The new version of Paint uses the “Ribbon” user interface that was pioneered in Microsoft Office. This user interface is designed with a ribbon of interface options at the very top of the program. The interface options that are most commonly used are larger, while less commonly used options are smaller.

There are also a few new features. One is the addition of new “artistic” brushes that can be accessed under the **Brushes** options. These brushes allow users to create

different textures and effects while editing a photo. The shapes that are created using the Shapes tool are anti-aliased to make them appear smooth, a first for Paint. The text box is more flexible and will now accept text that is too large to fit inside the text box's current size. Finally, Paint can view transparent PNG images, although it can't save the transparency.

Paint is still a bare-bones image editor, and certainly not a replacement for GIMP or Photoshop. These changes do increase the program's basic functionality, however, and eliminate some of the program's most annoying problems.

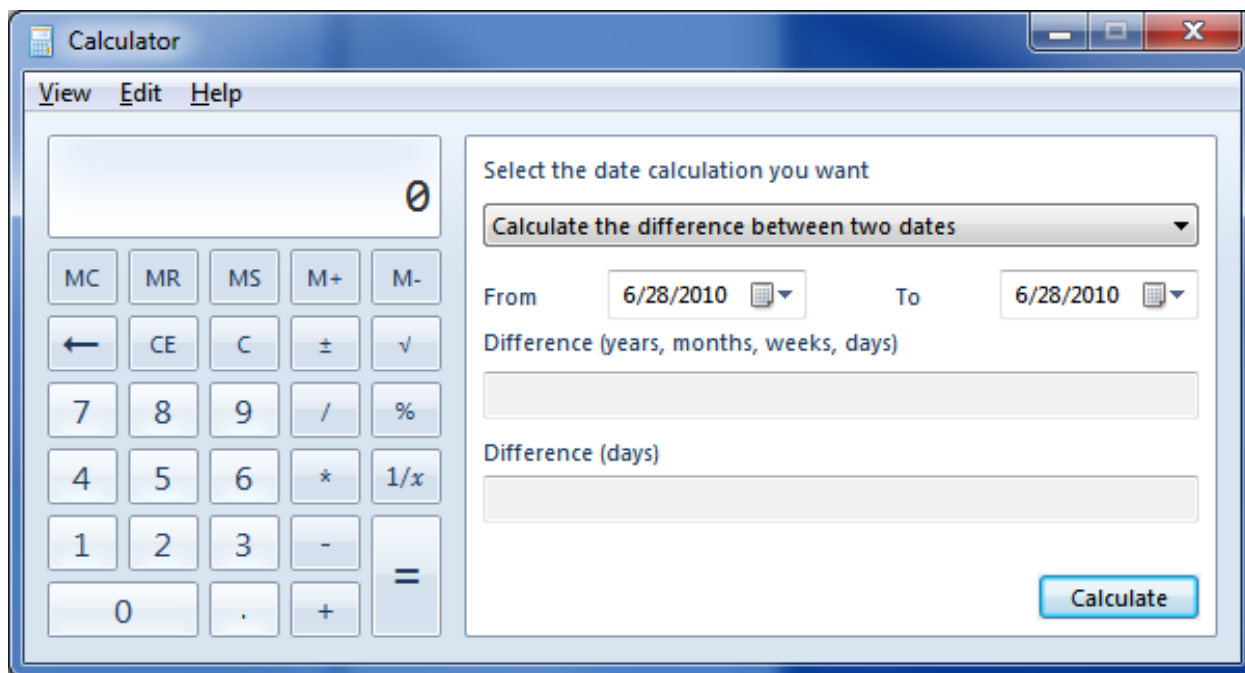
## The New Wordpad



Wordpad is also included in Windows 7, of course, and it has had the same Ribbon interface applied to it. Although the interface makes Wordpad appear much more modern than the version found in Vista and XP, the functionality of Wordpad remains almost identical to previous versions. The only notable change is that Wordpad can now save documents to the OpenText Format, and this means you can open Wordpad saved documents with OpenOffice. Wordpad still lacks a spellchecker, and for this reason it is still only suitable for extremely basic word processing.



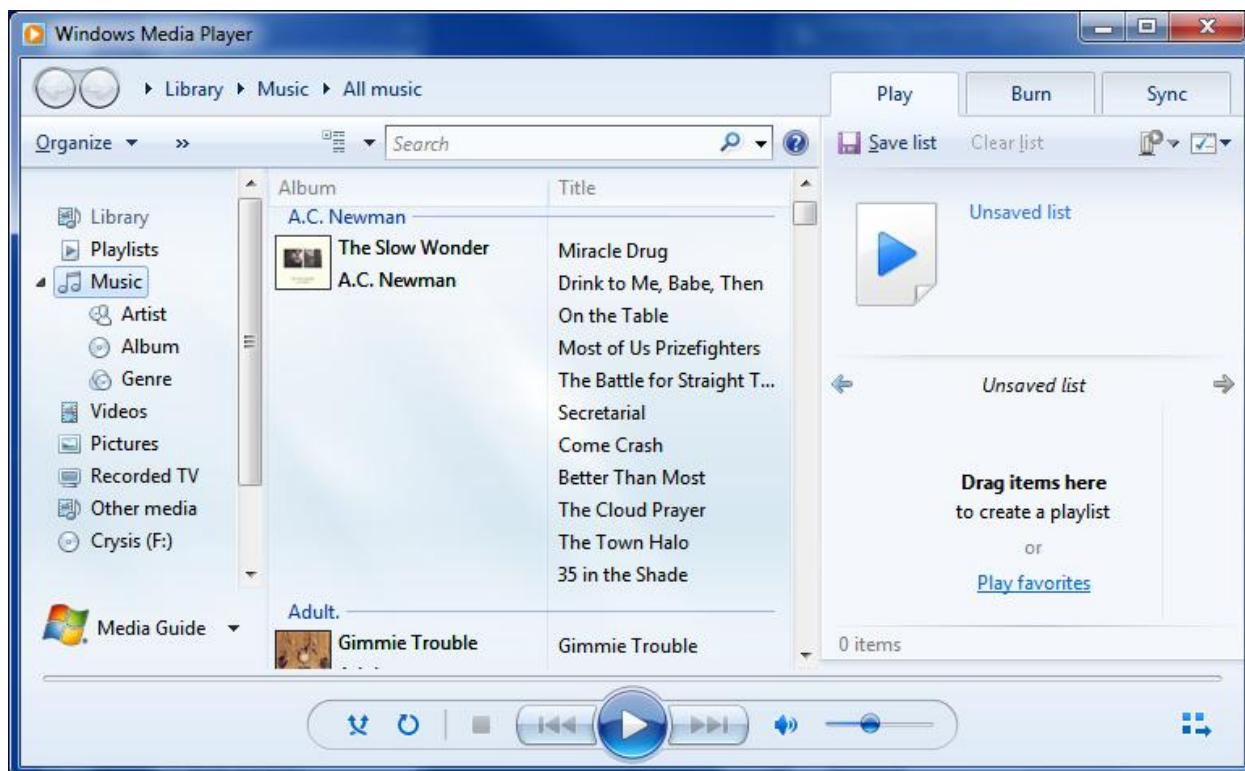
## The New Calculator



If you open the Calculator in Windows 7 you will find that it has the same interface as previous versions of the Calculator. However, the Calculator in Windows 7 has a few extra functions that were not previously available.

The Calculator can now emulate a Scientific, Programming or Statistics calculator. New Unit Conversion and Date Calculation features have also been added. Finally, the Calculator supports four functions that are labeled Worksheets. These Worksheets let you Calculate mortgage payments, determine the cost of a vehicle lease, and calculate your fuel economy in miles per gallon or liters per kilometer.

## Windows Media Player 12



Windows 7 ships with the latest version of Microsoft's media player, Windows Media Player 12. Windows Media Player 12 is a minor update to Windows Media Player 11. The interface is not dramatically different, so you should be able to understand the new version quickly. The biggest interface change is related to the inclusion of Libraries, which are now used to sort music instead of a proprietary library database format. The new player will also play songs from your iTunes library if they don't have DRM protection.

Most of the changes to Windows Media Player 12 are under the hood. The new player adds support for H.264, MPEG-4, AAC, 3GP, MP4 and MOV formats. This additional support plugs the largest gaps in the file support of previous media player versions. The player also now supports the ability to stream shared media files from your network. You can even stream files from you home network over the Internet, lettngs you view content at home while you're on the road.

Some features from previous versions have been removed. The Party Mode, Media Link for Email, and Color Chooser features are gone. The Advanced Tag Editor has also been removed, although you can still edit metadata by right-clicking on a file.

## Missing Software

When you first begin using Windows 7 you may find that some programs you used in Windows Vista don't seem to be installed. This is not an error or the result of doing anything wrong during the installation process. Windows 7 simply does not come with some programs that were included in Vista. These include Windows Mail, Windows Movie Maker, Windows Photo Gallery and Windows Calendar.

The removal of these features can be frustrating if you relied on them, but don't worry. These features were removed because they have been incorporated into a new package of programs called [Windows Live Essentials](#). Windows Live Essentials includes update versions of these programs, with the exception of Windows Calendar. Windows Calendar's functionality has been rolled into Windows Live Mail, the replacement for Windows Mail. The Windows Live Essentials package also includes some additional programs.

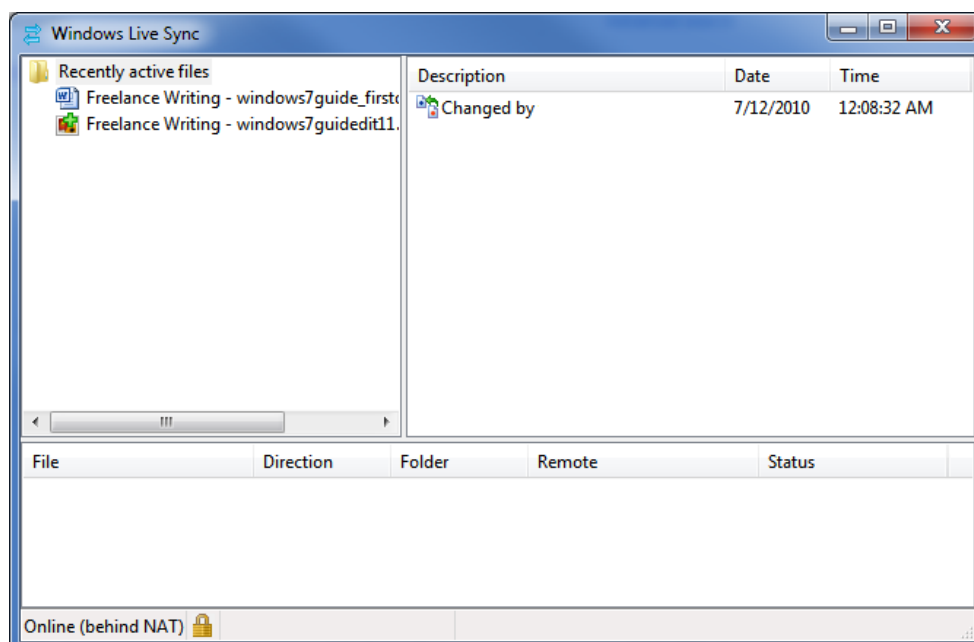
- [Family Safety](#) – This is a parental control utility. Parents can set restrictions on how children browse the Internet. It can also be used to monitor web activity.



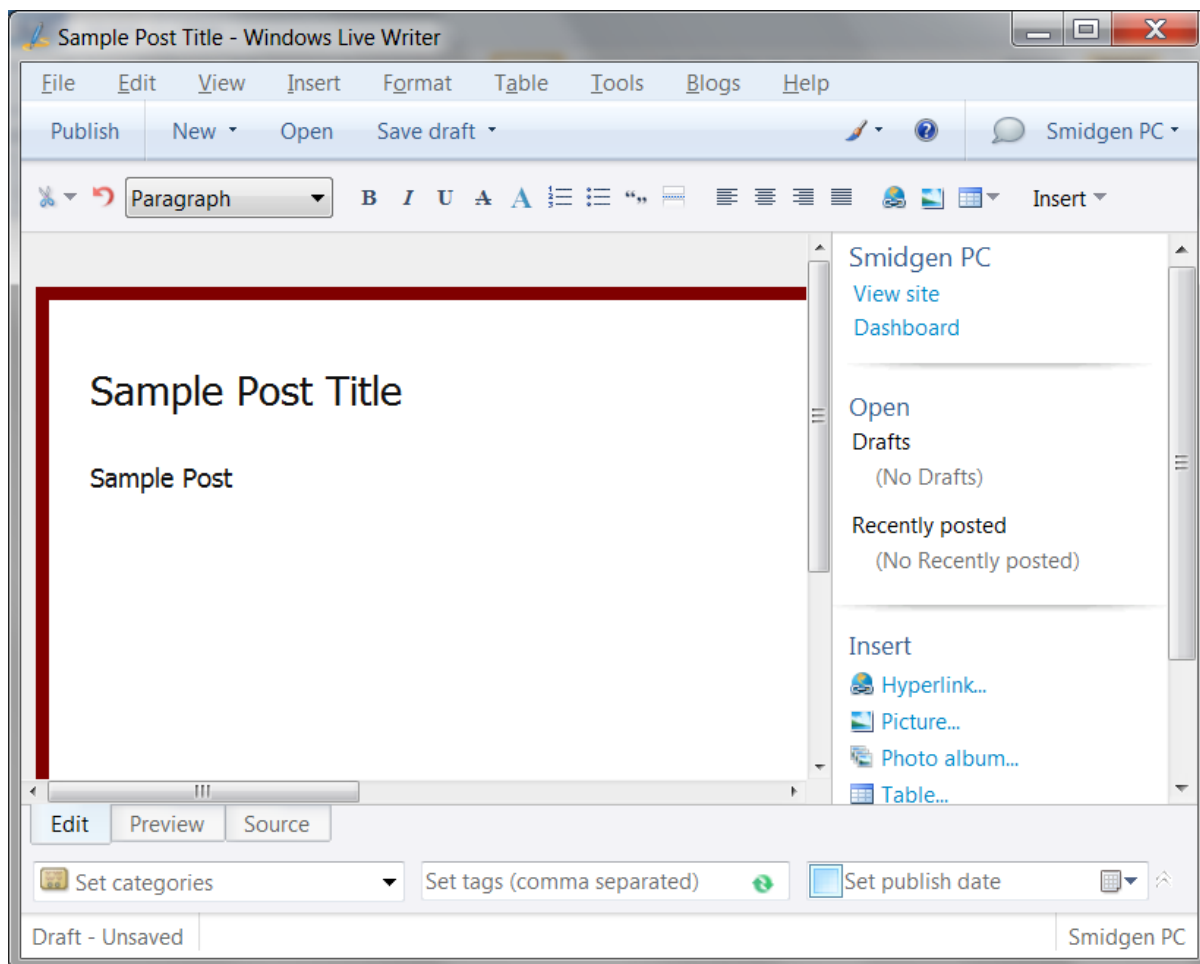
- [Messenger](#) – This is Microsoft's instant messenger program. It offers basic messaging functionality and can be used for voice chat.



- [Sync](#) – Sync makes it possible to share files among multiple computers automatically. Folders that are synced on separate computers will automatically communicate with each other using the Internet. A file placed in a synced folder on one computer will be transferred to all synced computers.



- **Writer** – A desktop blog-publishing application. Writer can be used to publish blog posts without accessing the blog's web interface. It is compatible with Blogger, LiveJournal, Wordpress and several other blog formats.



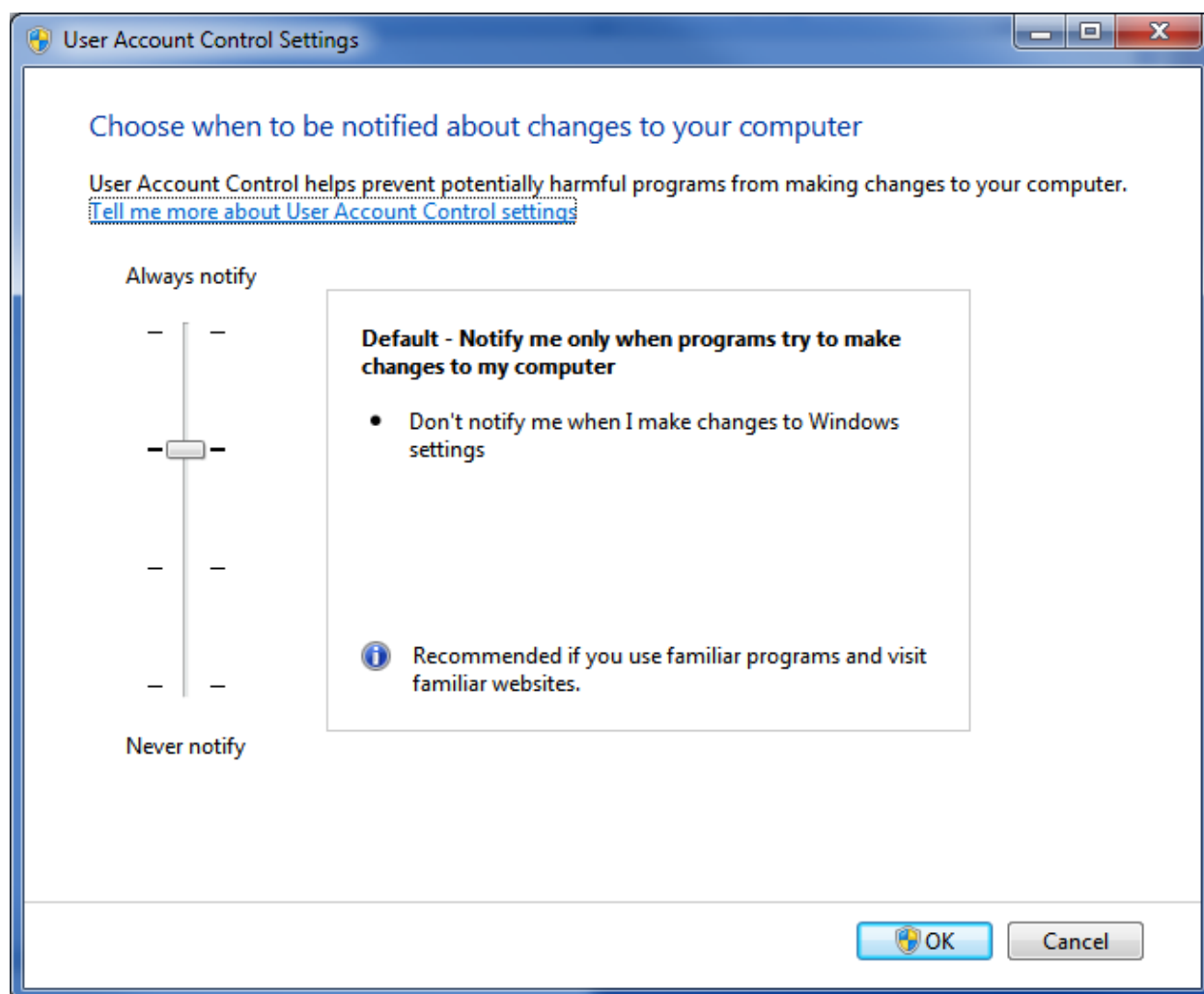
Installing Windows Live Essentials will add the software missing from Vista and then some. Note that while the Essentials package does include all the software listed above it is possible (at least for now) to download each program individually.

## User Account Control

*It's not as annoying as Vista*

User Account Control was one of the most hated features of Windows Vista. This was unfortunate, because it was also one of the best security advancements that Windows Vista brought to the table. Although it is annoying to have to confirm actions that you've already initiated, like installing a program, this is the only way to thwart the installation of malware capable of taking over your computer.

UAC is back in Windows 7, but it has had its default settings changed. You can access UAC by opening your control panel and then going to **User Accounts**. From there, click on **Change User Account Control Settings**. Then new default setting is the second most secure. It will only set off a notification if a program tries to make changes to your computer.



The default setting is "secure enough" but not as secure sliding the bar up to the maximum security setting. If you do this, UAC will act just as it did with Vista, and will always notify you when any change to your computer's settings is attempted.



You can also slide the bar down a notch so that notifications are still made, but your desktop is not rendered inactive when the notification prompt appears. This is also less annoying, but it is less secure because a malware program that triggers to the alert will have an easier time continuing to work in the background.

Finally, you can turn UAC off entirely. This is not recommended. Malware that manages to gain control of your computer will be able to make changes to your Windows settings without your knowledge.

## Microsoft Security Essentials

### A Free Windows Antivirus



Windows has never shipped with an antivirus program included. This has caused security issues not only because it leaves Windows vulnerable, but also because users who don't know any better often hit Google in search of free antivirus programs. These users often end up downloading installing a fakesware program that advertises itself as an antivirus but is actually malware.

Windows 7 also does not ship with an antivirus program, but Microsoft does now offer a free antivirus program that you can download from the Microsoft website.

[Microsoft Security Essentials](http://www.microsoft.com/security_essentials/) is a pure antivirus component and does not integrate with the other security features of Windows 7 to any significant degree. It is a simple program compared to the more comprehensive suites from companies like Symantec. It is capable of running virus scans, and it includes Microsoft SpyNet, a cloud antivirus solution that gathers data about known viruses from all computers

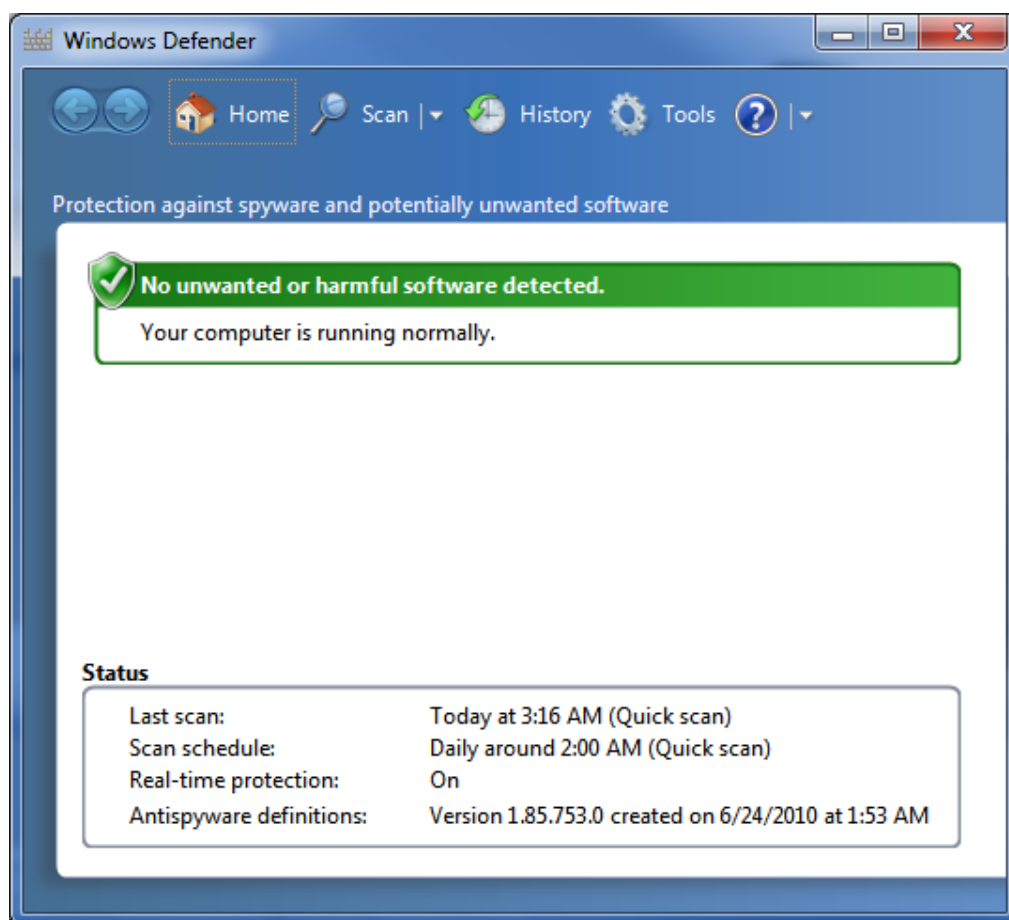
running Microsoft Security Essentials. However, the program doesn't offer much additional functionality.

According to AV-Comparatives, Microsoft Security Essentials has solid antivirus protection. It was able to deal with 96.3% of all threats and returned very few false positives. You can buy better protection, but it is worth noting that Microsoft Security Essentials ranked better than some paid security software, such as Trend Micro Internet Security and Kingsoft Antivirus.

## Windows Defender

Windows Defender is an anti-spyware program built into Windows 7. It is *not* an antivirus program. It is meant to only deal with spyware, which can be defined as a program that is attempting to gather data from your computer. It is not meant to deal with malware that is attempting to take over or damage your computer – that is what Security Essentials is meant to combat.

Opening Windows Defender will open a window that tells you the current status of your computer's spyware security. Normally this screen will simply inform you that your computer is running normally. Windows Defender is set to scan your computer on a daily basis when you install Windows 7, a fact that will be reflected in the Status section at the bottom of the window.



At the top of the Windows Defender window you will see the **Scan** button, as indicated by the magnifying glass icon. Clicking on it will start a quick scan, while clicking on the arrow beside the icon will open a drop-down menu with some additional scan options. Although you can initiate a manual scan, there is rarely any need to do so if the automatic daily scan is scheduled.

If you want to change the schedule of the automatic scans you can do so by clicking on the **Tools** button, as indicated by the gear icon. The automatic scanning settings will appear by default. You can adjust the frequency of scans, although you can only choose daily or weekly. You also can choose the time of the scan and the type of scan.

Finally, there are two checkboxes at the bottom. The first forces Windows Defender to update its definitions before scanning. This is on by default and should be left on. The second checkbox forces Windows Defender to wait until your computer is idle before scanning. This is on by default, but can be turned off if you wish. The scan process of Windows Defender is not taxing and won't cause a noticeable reduction in performance on a modern computer.

## Windows Firewall

The name of Windows Firewall really says it all. Windows Firewall first appeared in Windows XP and has been receiving updates ever since. Firewall's functionality is essentially the same in Windows 7 as it was in Windows Vista, although there are a few changes.

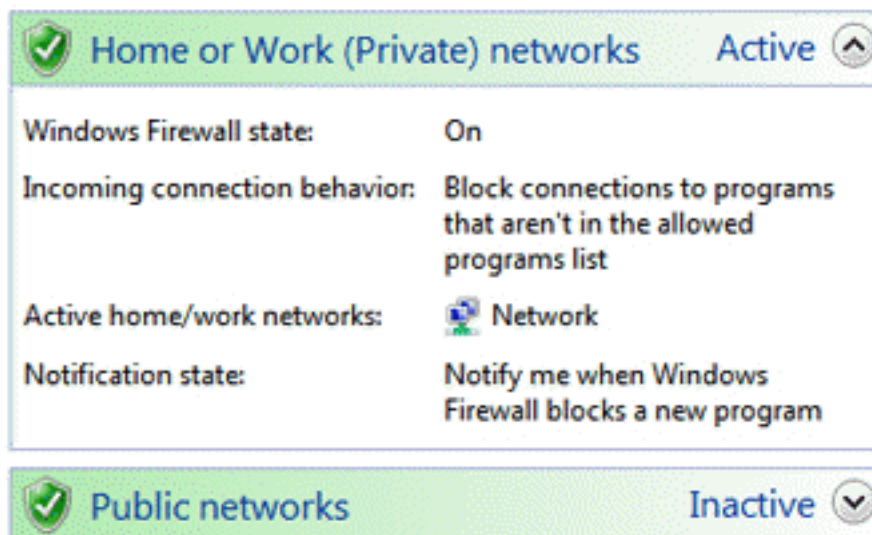
One of the changes is associated with the way that Windows 7 handles networking. When you install Windows 7 you will have the ability to create what is known as a HomeGroup. This concept will be explained more in the next chapter, but it essentially is your home network. Windows 7 has the ability to apply different firewall settings to the HomeGroup than it does to all other networks. This makes it easier to share files and other information between different computers on your home network. This functionality is enabled by default when you create a HomeGroup, so you may never have any reason to actually open the Windows Firewall window.

## Windows Firewall

Windows Firewall can help prevent hackers or malicious software from gaining access to your computer through the Internet or network.

[How does a firewall help protect my computer?](#)

[What are network locations?](#)



However, if you do want to change your settings, you can do so by opening the Windows Firewall window in the Windows Control Panel. The fact that Windows Firewall can now treat the HomeGroup differently means that Windows Firewall is now finally a dual-mode firewall. When you open the Windows Firewall window you will see options for both your home network and for public networks. Each of these feature sets can be accessed and adjusted individually. Windows Firewall will also display the type of network you are currently connected to – in most cases you'd already know this, but it can be handy if there are a lot of rogue, unsecured WiFi routers in your area.

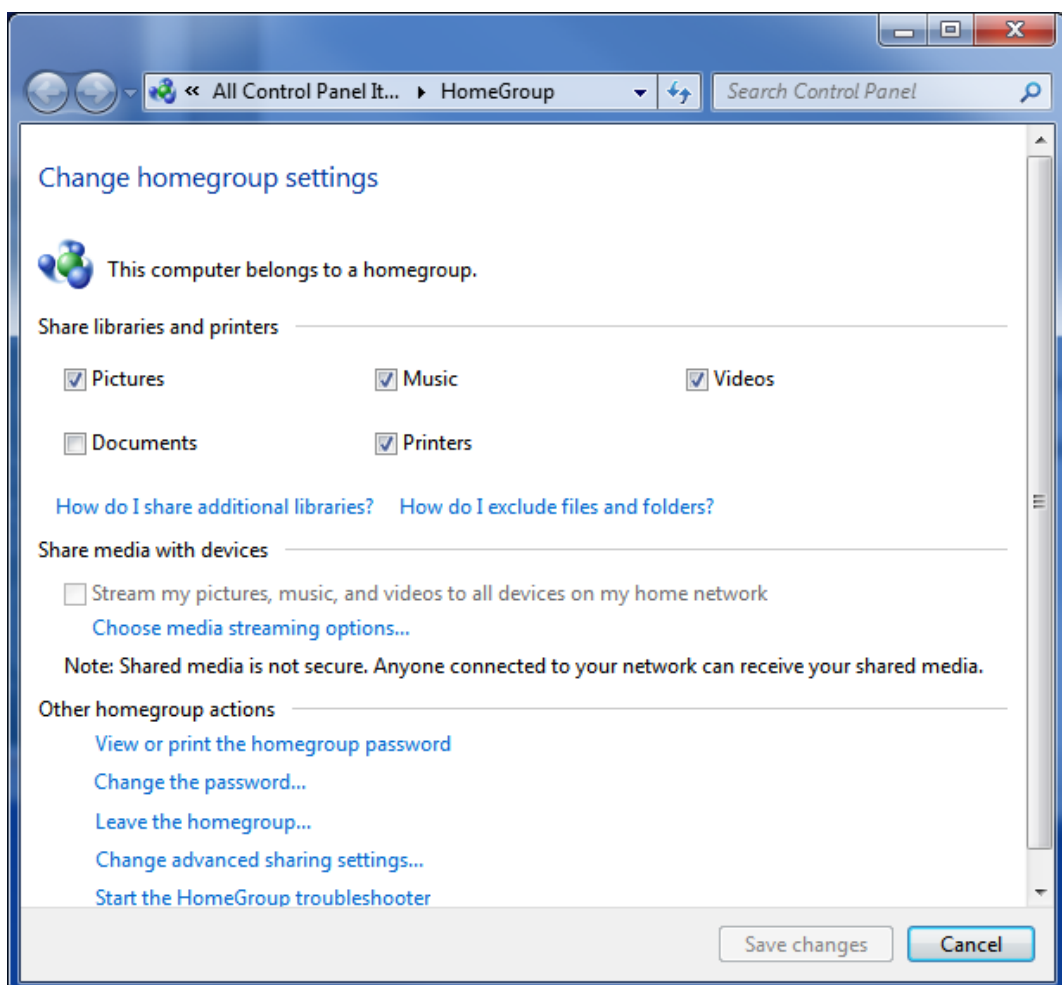
# Chapter 7: Windows 7 Networking

## – Easy As Pie

### No Place Like HomeGroup

Home networking has always been a bit of a pain in the butt with Windows. Windows 7 attempts to address this by over-hauling how Windows handles home networking, and as part of this over-haul Microsoft has added a new networking feature known as HomeGroup. Your HomeGroup is automatically created when you install Windows 7. All computers that are part of a HomeGroup are able to share information easily. They can also access printers that are connected to other computers that are a part of the HomeGroup.

The type of information that is shared can be changed as you desire. To make changes you need to open your HomeGroup window. This is most easily done by typing "homegroup" in the Windows Search field. Once you've opened the HomeGroup window you can find a section titled "Share libraries and printers" at the very top. There are five checkboxes here, one for each of the default libraries created by Windows 7 and one for printers.



You can also share media with devices on your network (such as an Xbox 360) if you desire. This is done in the "Share media with devices" section by marking the checkbox. The checkbox is only available if there are devices connected to your home network that Windows 7 is able to share media with.

Of course, having a HomeGroup isn't of much use if you only have one computer in it. To add additional computers to your HomeGroup you will need to access the Network and Sharing Center of the computer that you want to add. Under the "View your active networks" section you should see **HomeGroup: Available to Join**. Click on this. You will now be asked for your HomeGroup password. If you don't still have this from your installation you can view your HomeGroup password by clicking the "View or print the homegroup password" option on any computer already connected to the HomeGroup. Once you have entered the password the connection will be made and you will be able to share information among the newly added computer and all other computers that are a part of the HomeGroup. Sound's easy, right? It is. I do have some bad news, however – HomeGroup only works with other Windows 7 computers. Any computer on your home network that does not have Windows 7 installed can't be a part of the HomeGroup. You can still network Windows XP and Vista, but the HomeGroup features are not available. Networking will work as it did in Windows Vista.

There also seems to be high chance of error when networking with a Windows XP machine – XP machines often do not show up as available in Windows 7 and vice versa. Unfortunately, there doesn't appear to be any clear reason why this occurs, nor is there any solution that is guaranteed to work. If you are upgrading from XP and you have multiple computers on a network you should try to upgrade all networked computers to Windows 7 at once.

## Wireless Networking Made Easy

Windows 7 also makes major improvements to how the operating system handles wireless networking. The biggest improvement can be found in the wireless networking pop-up menu itself. If you have Windows 7 installed and your computer has wireless Internet you can open the pop-up menu by clicking on the icon on the left of the taskbar. The icon appears as a series of reception bars, like those found on a cell phone.

The new pop-up makes it easy to switch wireless networks. All of the wireless networks available will be displayed on the pop-up. The one that you are currently using will be clearly labeled as "Connected" in bold type. To switch networks, click on that network in the pop-up menu and then click the **Connect** button. If the network is password protected you will have to type in the encryption key. That's it! You're now connected to the new network.



The new wireless networking pop-up menu is so efficient that you'll rarely have to access anything beyond the functionality it provides, but if you do need to change your wireless networking settings you can do so by clicking **Open Network and Sharing Center** at the bottom of the pop-up menu. Next, click on **Manage wireless networks** on the left of the Network and Sharing Center window.

The Manage Wireless Networks window will show a list of all wireless networks that are saved on your computer. These are networks that you will be able to connect to automatically if they are detected by Windows. You can add a new network by clicking the **Add** button. You will be asked to enter the network's name, security type, encryption type and security key. Once you have done this you can click **Next** to save the network to the list. You can also change these settings at any time by right-clicking on a listed network and then clicking **Properties** from the menu.



# Chapter 8: Windows 7 and Gaming

---

## A New Performance Champion?



Windows uses a proprietary graphics API (advanced programming interface) called DirectX. It is DirectX that makes it possible for 3D games to function on a Windows computer (although there are competitors, such as Open GL). DirectX has been updated many times since its introduction in 1995. Vista arrived with DirectX 10 and Windows 7 was released alongside the latest version, DirectX 11.

In theory, Vista should have been a big deal for gamers. DirectX 10 was a feature Windows XP could not support, and it was supposed to make games look better than anyone could previously imagine. However, game developers were slow to take advantage of DirectX 10. Worse, Vista proved to be around 10% slower in games overall than Windows XP. As a result, many gamers decided not to make the leap to Microsoft's latest operating system.

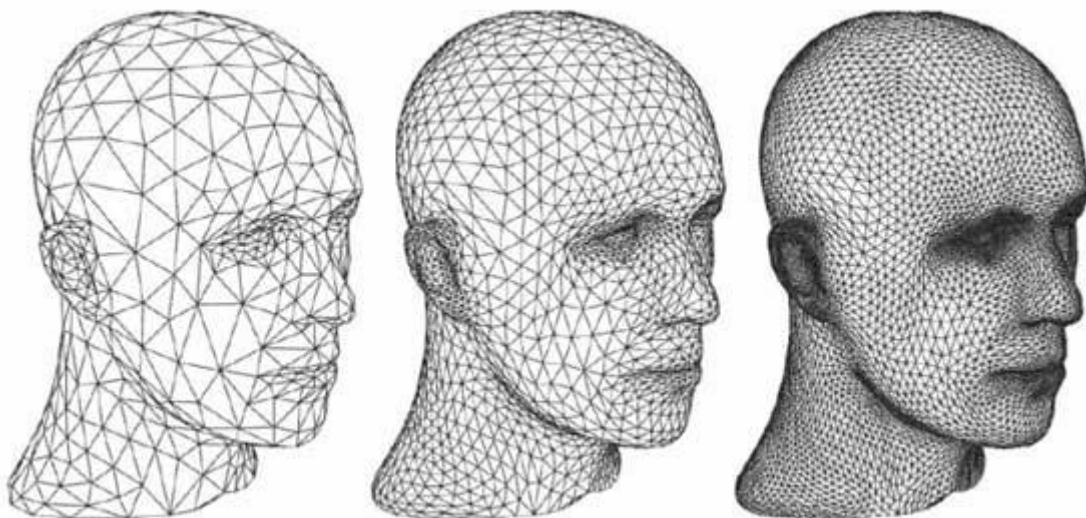
Unfortunately, the performance situation has not changed with Windows 7. Windows 7 performs almost identically to Windows Vista in gaming benchmarks, and that means Windows 7 also offers slower performance in games than Windows XP. However, the landscape of Windows gaming has changed. Although XP is still faster, it remains stuck using DirectX 9. There are now numerous games that support DirectX

10, and Microsoft has already introduced DirectX 11. Like DirectX 10, this new update is meant to revitalize PC gaming and make jaw-dropping graphics possible. The difference is that DirectX 11, unlike 10, may actually live up to this hype.

### New Features in DirectX 11

DirectX 11 is the largest update to DirectX in some time. Although there are many changes, the most important enhancements in DirectX 11 are the inclusion of Tessellation and Compute Shaders.

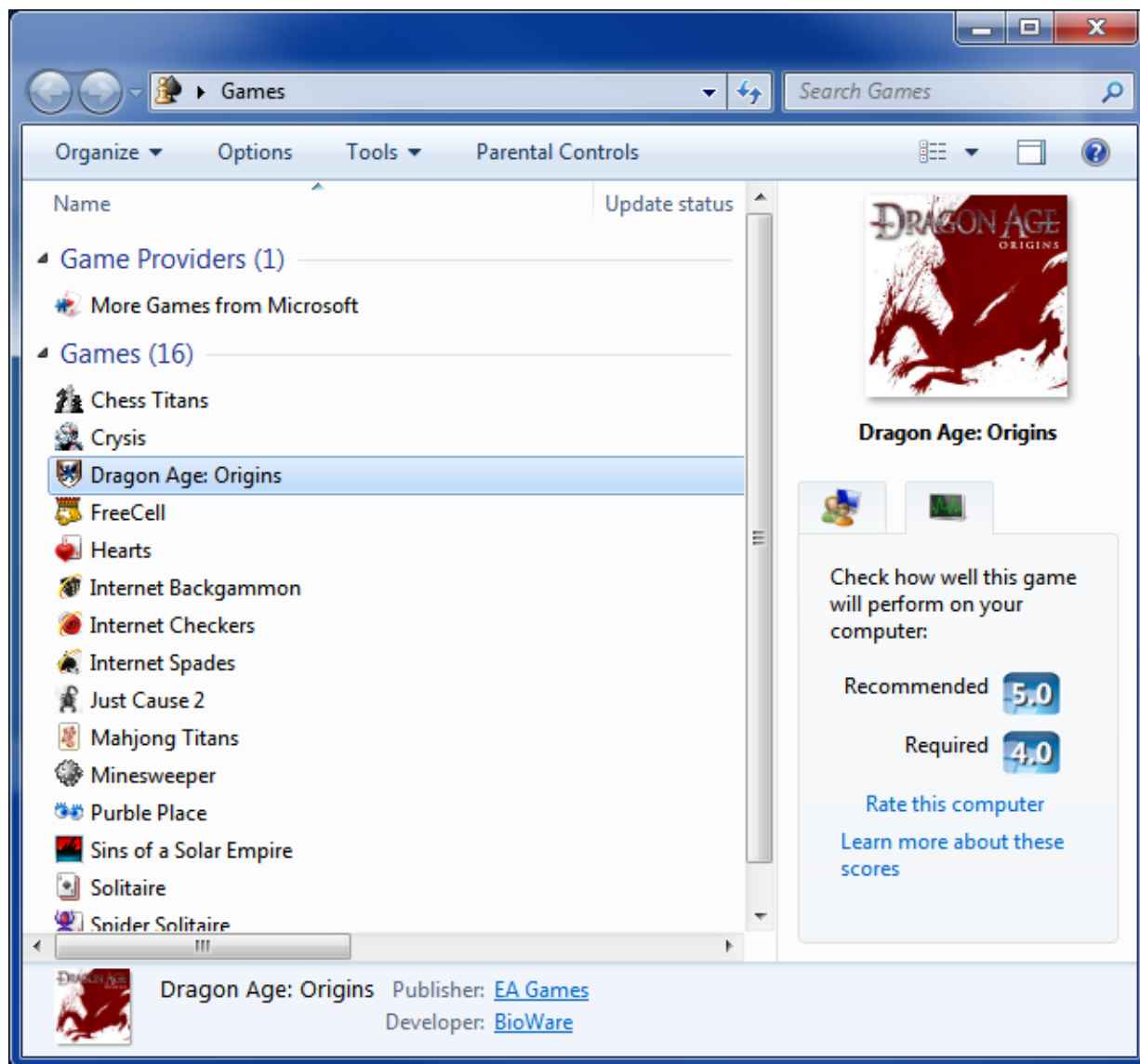
Tessellation is a technology that makes it possible for the polygon count of a 3D model to be dynamically increased or decreased depending on the amount of GPU power is available in a given system. Although some games have had tessellation in the past, that tessellation was part of the game's engine. That meant a game developer who wanted tessellation had code their own tessellation feature into their game's engine. Adding tessellation to DirectX 11 finally gives game developers a standard, and that means it is much more likely that we'll see tessellation included in games.



The second new feature, Compute Shaders, makes the graphics processing pipeline available to tasks unrelated to rendering an image. This means that a GPU can be used to perform tasks that would normally be given to the CPU. This makes a lot of sense in certain situations because a GPU is capable of handling certain tasks far better than a CPU. This is also a feature that has existed previously but is now being standardized so that it is easier for game developers to code for.

DirectX 11 is fully compatible with Windows Vista, so those who are still using Vista will also be able to enjoy these enhancements.

## Using Games Explorer



Windows 7 includes the Games Explorer feature. This was included in Vista, but it had extremely limited functionality – it basically acted as a folder into which games could be dropped, and the interface wasn't elegant. Games Explorer has been updated in Windows 7 to address these issues, and Games Explorer is now a useful feature.

The Games Explorer can be opened by searching for "Games" in the Windows Search field. The Games Explorer window itself is separated into two sections. The first is Game Providers. This section represents game services, such as MSN games. The second section is Games. This, of course, lists the games installed on your computer. Unfortunately many games still don't add themselves automatically, so it can still be hard to keep the Games Explorer up to date. You can add a game to the Games Explorer by drag-and-dropping the game's .exe into the Games Explorer window.

Once a game is listed in Games Explorer you can view more information about it by clicking on its icon. Some of the information that might be listed is the game's box art and ESRB rating. It is also possible to view the recommended system requirements of the game as gauged by the Microsoft Windows Experience Index. Finally, you can update games automatically by right-clicking on their icon and clicking the **Check online for updates** option.



# Conclusion

---

That is all of the advice I have for you in this guide. I hope that it served you as a proper introduction to Windows 7. The advice here will help new users become acquainted with Windows 7 and can also help those who are on the fence about purchasing Windows 7 decide if it would be a good idea.

There are, of course, many other components to Windows 7 that are not explained here. Like any operating system, Windows 7 has many hidden features and settings that you may not ever run across or need to use during your time with the operating system. To find out more information about Windows 7, check out the MakeUseOf articles below.

- [4 Common Windows 7 Problems and Fixes](#)
- [15 Best Windows 7 Tips](#)
- [How to Change the Windows 7 Logon Screen](#)
- [How to Choose Between 32-bit and 64-bit Windows 7](#)
- [How to Configure and Use Windows 7's XP Mode](#)
- [How to Upgrade from XP to Windows 7 in 4 Easy Steps](#)
- [The Most Common Windows 7 Compatibility Issues](#)
- [Speeding Up Windows 7: Everything You Need to Know](#)



Did you like this PDF Guide? Then why not visit [MakeUseOf.com](http://www.makeuseof.com) for daily posts on cool websites, free software and internet tips.

If you want more great guides like this, why not **subscribe to MakeUseOf and receive instant access to 20+ PDF Guides** like this one covering wide range of topics.

Moreover, you will be able to download [free Cheat Sheets](#), [Free Giveaways](#) and other cool things.

**Subscribe to MakeUseOf :** <http://www.makeuseof.com/join>

## MakeUseOf Links:

Home:	<a href="http://www.makeuseof.com">http://www.makeuseof.com</a>
MakeUseOf Directory:	<a href="http://www.makeuseof.com/dir">http://www.makeuseof.com/dir</a>
MakeUseOf Answers:	<a href="http://www.makeuseof.com/answers">http://www.makeuseof.com/answers</a>
Geeky Fun:	<a href="http://www.makeuseof.com/tech-fun">http://www.makeuseof.com/tech-fun</a>
PDF Guides:	<a href="http://www.makeuseof.com/pages/">http://www.makeuseof.com/pages/</a>
Tech Deals:	<a href="http://www.makeuseof.com/pages/hot-tech-deals">http://www.makeuseof.com/pages/hot-tech-deals</a>

## Follow MakeUseOf:

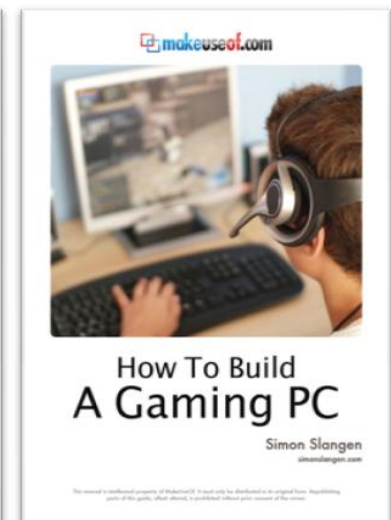
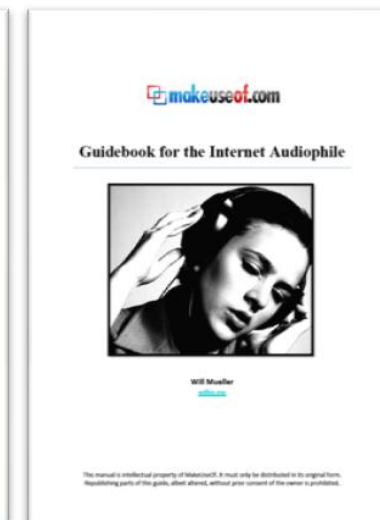
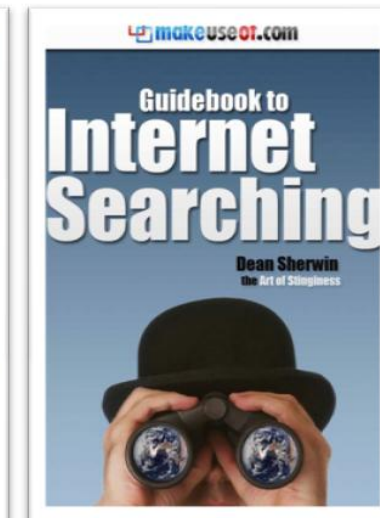
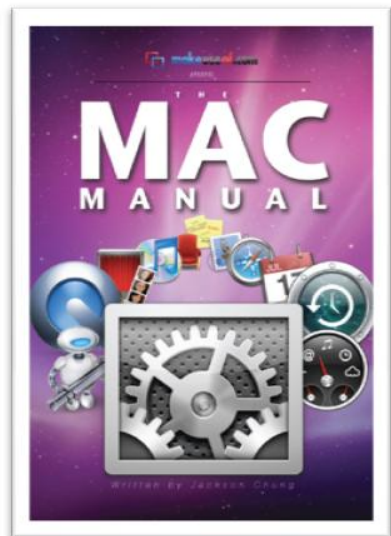
RSS Feed:	<a href="http://feedproxy.google.com/Makeuseof">http://feedproxy.google.com/Makeuseof</a>
Newsletter:	<a href="http://www.makeuseof.com/join">http://www.makeuseof.com/join</a>
Facebook:	<a href="http://www.facebook.com/makeuseof">http://www.facebook.com/makeuseof</a>
Twitter:	<a href="http://www.twitter.com/Makeuseof">http://www.twitter.com/Makeuseof</a>

## Download Other MakeUseOf PDF Guides!

Subscribe to Download : <http://www.makeuseof.com/join>



Subscribe to Download : <http://www.makeuseof.com/join>



Subscribe to Download : <http://www.makeuseof.com/join>

