



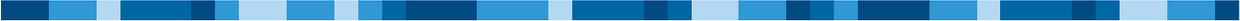
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# Microsoft Windows Vista: What To Expect

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## Introduction

The client O/S of the new Microsoft™ Longhorn generation of operating systems is finally almost here. Following the XP/2003 tradition, the client is to be released before the server family is shipped and will have its own distinguished name. The current release time is mid-2006, and the new client name is Vista. It is expected that the server is going to be released about three months after Windows Vista. The server is probably going to be called Windows Server 2007.

That said, it may be interesting to know that both Microsoft Windows Vista™ and the server are using Windows 2003 SP1 as code base. Initially, it was believed that that client was going to be built using XP as code base.

As expected, Microsoft demonstrated build 5219 (Community Technical Preview CTP 1) of Windows Vista to attendees of the Professional Developers Conference in September 2005. The October CTP, or build 5231, is already here. That means we can expect monthly builds from here on, with public monthly builds beginning probably in December 2005.

So it looks like there will be a new client O/S by the end of next year and maybe even sooner.

## How Many Vistas Are There Anyway?

The simple days of having one or two flavors of the same client O/S are gone. MS is now talking about no less than seven different editions in two categories: home and business. And this is just the client O/S. It seems that the Longhorn family is going to be quite large.

The Home category will include four products: Windows Vista Starter Edition; Windows Vista Home Basic Edition; Windows Vista Home Premium Edition; and Windows Vista Ultimate Edition.

In the Business category, there will be three editions: Windows Vista Small Business Edition; Windows Vista Professional Edition; and Windows Vista Enterprise Edition.

The sheer number of client editions will almost certainly lead to consumer confusion. Many of us are still trying to explain the difference between Windows XP and Office XP.

## Hardware Requirements

One possible explanation for the multitude of client O/S to be offered is that MS is trying to ensure that people who cannot afford to upgrade their hardware will still be willing to upgrade the O/S.

## Microsoft Is Talking about Windows Vista Ready vs. Windows Capable Systems.

A Windows Vista Ready System has a modern CPU, at least 512 MB of RAM, and a GPU that supports the Windows Vista Display Driver Model.

Clients that do not meet the Vista Ready hardware requirements will not be able to enjoy all new Vista features and benefits.

Vista is going to be the first O/S from MS that is really graphics focused. MS went from bitmap images to vector graphics, which means that there will be a shift in the CPU to the GPU. It will also require a high-end display card to be included in the machine. A 128 megabyte display card will be good, but a 256+ megabyte will be better.

According to MS, Vista would work best on a video card with more than 256MB RAM, 2GB of DDR3 memory, and a S-ATA 2 hard drive.

Another issue still to be addressed by the industry is the inability of current monitors to handle the copy protection in high-definition DVDs. To date, very few PC monitors support High-bandwidth Digital Content Protection (HDCP) technology. That's what you need in order to enjoy DVDs in high definition. This is something the industry needs to catch up with before the public release of Windows Vista next year. To summarize – hardware requirements for Windows Vista allow your current system to run it but your future system will run it properly. Sounds pretty much like any other previous release of MS O/S.

## What's all the Marketing Hype About?



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The marketing strategy around Vista features the "triple-C" campaign – Confident, Clear, and Connected.

It's yet to be seen how successful this marketing strategy is going to be, but the good news is that the triple Cs are actually supported by some very interesting new features.

### Connected

There is a pervasive-device synchronization feature, which will allow users to synchronize information across multiple PCs, servers, cell phones, and PDAs.

### Clear

There is system-level instant desktop search feature that lets users easily find information on their PCs and organize it using virtual folders.

Windows Vista offers live icons that display the first page of the document.

Metro is an advanced printer and document framework that will compete with PDFs and make it easier to use and share documents.

### Confidence

There will be integrated antimalware that will protect users from spyware, adware, and phishing attacks.

Secure Startup ensures the integrity of the data, even if the machine is lost or stolen.

There will be full-volume encryption.

User Account Protection (UAP) is a reduced-privileges mode that will run applications with limited permissions. Even administrators will be prompted to confirm their intentions and present security credentials for the task.

An integrated parental control feature will allow parents to confidently share their PC with their kids.

## Windows Vista Top Ten New Features

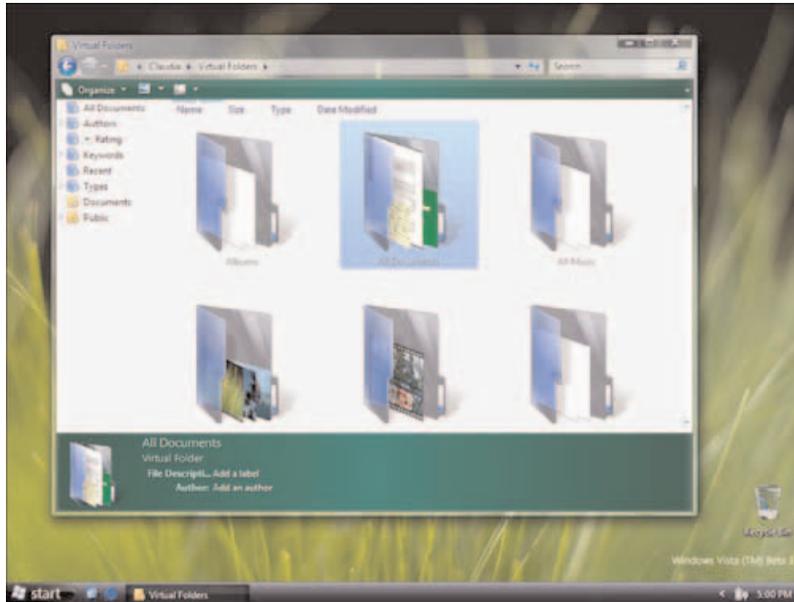
### 1. Cool Graphics

The Windows interface is probably the most impressive new feature of Windows Vista. It comes at a price though. In order to get the full-blown Windows Vista experience, which is based on the advanced graphics technology, you will need a graphics card that is supported with a Longhorn Display Model Driver (LDDM). Microsoft describes these cards as being DirectX 9 compliant, with at least 256MB RAM on them.

Based on the underlying capabilities of your display hardware you are going to get one of the two flavors of Aero (the new tiered user interface). Provided your hardware is Windows Vista ready you will enjoy Aero Glass—the premium Windows experience. For display-hardware challenged clients, Aero Express will resemble the graphics capabilities in Windows XP. There is also a Windows Classic interface provided for compatibility that resembles Windows 2000.

Here are some of the most impressive changes and additions to the desktop GUI:

**Virtual Folders** are dynamically created saved searches similar to Apple Mac OS Tiger. There are several built-in Virtual Folders, and users can create their own by using simple search criteria.

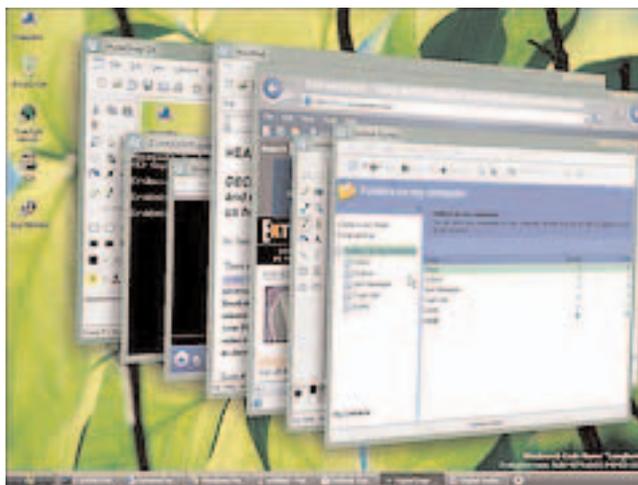


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**Live icons** offer a visual clue of the document's content, with the first page included in the icon. A Microsoft PowerPoint icon will look like the first slide, for example.

**Windows code-name "Flip"** allows you to easily switch between different applications. The old Alt + Tab now provides a visual row of live thumbnails for the open applications and documents. Users pick the one needed by clicking on the appropriate thumbnail.

**Windows code-name "Flip 3D"** (Windows Key + Tab) is another task-switching option that presents all open applications and documents in a three-dimensional, stacked view. It looks cool, although it does resemble Sun's Project Looking Glass.



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## 2. Image-based Setup

Microsoft claims that Windows Vista will now install on a new PC in less than 20 minutes. There is also talk about Windows Imaging (WIM) images. This feature allows users to distribute an entire Windows installation in a single, compressed file.

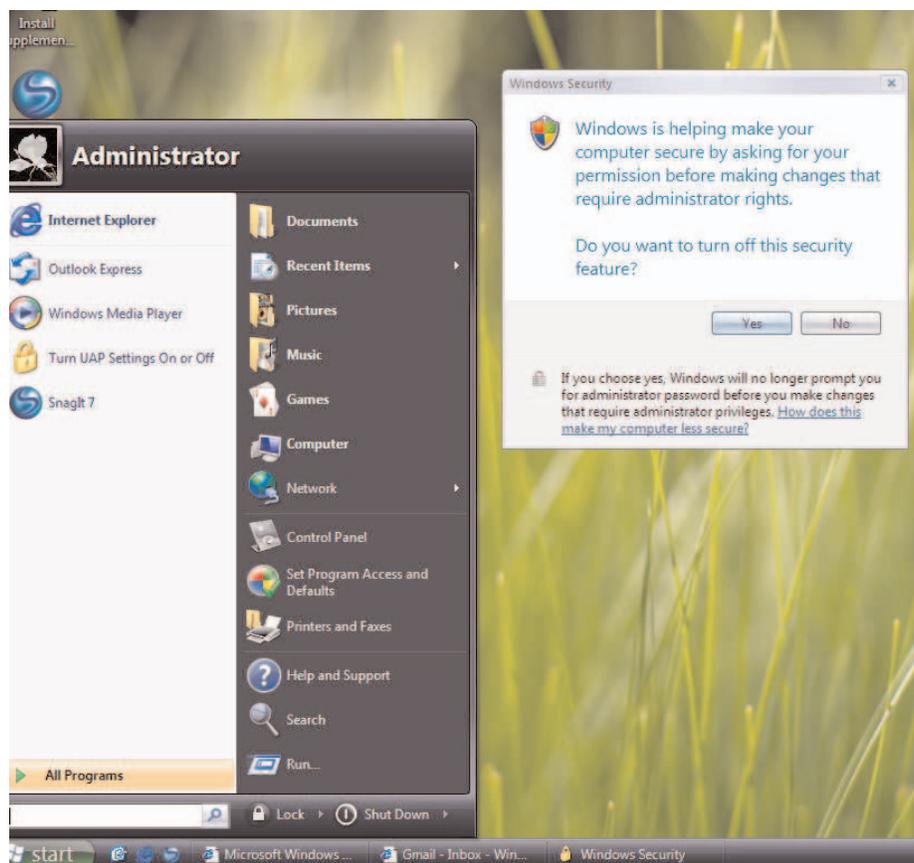
## 3. Windows Future Storage (WinFS)

WinFS is arguably the biggest change in the new generation of operating systems from Microsoft. MS decided not to ship it initially with Windows Vista. Instead it has planned to ship it with the server edition, and then offer it for clients as an add-on.

What exactly is WinFS? It's a new data storage engine that Microsoft is building on top of SQL Server 2005. Initially it was believed that WinFS was going to replace FAT and NTFS. Now it seems more likely that NTFS remains, and WinFS is going to provide highly complex indexing technology that works and depends on NTFS. In other words, WinFS is a service that runs on top of—and requires—NTFS.

## 4. User Account Protection (UAP)

UAP is a new user privileges model that will change the default privileges for user accounts.



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Traditionally, when you log onto a Windows machine the system generates an Access Token that determines your privileges on the system. The token is then passed to any process or application that you start. If you are logged on as an administrator, every application you start--including viruses, worms, and spyware--runs with your 'administrator' AT. This particular 'feature' of MS operating systems has been exploited by hackers numerous times in the past.

Microsoft finally addresses this problem with the introduction of User Account Protection that implements the principle of least permissions. This means that software applications and users should not have more privileges on an operating system than are absolutely necessary. Even when a user is logged on to an Administrator account, most applications will run using vastly reduced privileges. And when the user needs to perform a task that could harm or change the system configuration, the system will prompt him or her to supply an admin-level password. Please note that this happens even if you are logged on as administrator. This is because admin accounts are now associated with two ATs - a UAP token and a full-admin token. The only problems with this otherwise long overdue change is that the admin dialog pops up way too often now, and also it seems that applications need to be UAP aware for it to work properly. I am sure Microsoft is going to retrofit older applications before the final release of Windows Vista.

## 5. Shadow Copy without Server

Shadow copy proved to be a very popular feature of the Windows 2003 server. Now the same option is available for Windows Vista clients without the requirement for a network server.

It is implemented as a local file recovery service that lets you cache older versions of files. The service takes scheduled or manual snapshots of shadow-copy-enabled volumes. This allows users to recover with ease any data that has been overwritten or inadvertently deleted.

## 6. Internet Explorer 7



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Internet Explorer 7 Beta 1 is available now in a stand-alone version for Windows XP SP2, and as an enhanced version that comes with the Vista builds.

IE 7 is focused on security. Amongst the new features –is ActiveX Opt-In, which makes ActiveX controls safer and allows users to remove unwanted ActiveX controls. IP traffic can now be encrypted, which makes the job of the man-in-the-middle attacker more difficult. IE 7 also comes with the new Microsoft Phishing Filter.

One feature that seems to be missing, contrary to what was expected, is ad blocking capabilities. Hopefully any existing ad-blocking plug-ins will still work with IE 7.

## 7. Windows Defender (Formerly Windows Antispyware)

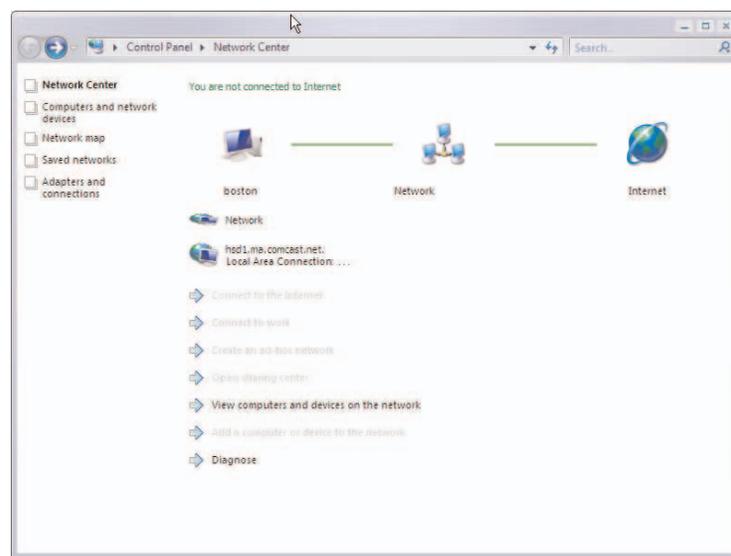
There are some interesting developments here. Microsoft rebranded the application and moved the engine to a system service. The new product will provide protection against a range of threats, including rootkits and key-stroke loggers as well as spyware applications. Signature updates will be delivered over Windows Update. This built-in, low-level support for antivirus services is probably going to be offered as a subscription-based service. Third parties such as McAfee and Symantec will be able to take advantage of this system as well.

## 8. Super Fetch

Super Fetch is not exactly a “new” technology, but rather a new development of a technology that has been around since the mid-1990s: demand paging. In a virtual memory operating system, copies of pages are transferred into physical memory only if needed. When a computer is shut off, the RAM contents are moved out of the virtual memory file on disk.

Super Fetch retrieves the memory pages that applications are most likely to utilize upon reboot. The decision to preload pages is based on applications that the user is most likely to use. Super Fetch enables applications to start up to three times faster. What is even more exciting is that you can use an USB flash memory stick as additional virtual RAM for Super Fetch. This performance boost will be particularly popular with laptop users.

## 9. Network Center



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The most interesting addition to the October build of Windows Vista is the new Network Center, which replaces My Network Places and Network Neighborhood.

The Network Center offers multiple tools and options. With the new applet you configure wired and wireless connections and view the Network Map, which is designed to show all the nodes on your network (including access points and switches). There's a Diagnose facility that will help you troubleshoot network problems.

Most of the options are not available yet but the new applet does look very promising

## 10. Metro

Windows Vista includes a new document format and printing architecture called Metro. It is based on XML and similar to PDF in that it allows documents to retain their formatting independent of devices and applications. Metro is to Windows Vista as Adobe PDF is to Mac OS X: It's a device- and application-independent printing architecture that allows documents to retain their exact formatting in any application and when printed.

Unlike PDF files, Metro will allow users to open Metro files without a special client. Microsoft is freely licensing Metro, which means Adobe is going to have a major challenge very soon.

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## About the Author

Sue Cooney (MCSE NT3.51, MCSE + I NT4.0, MCSE 2000, MCSE 2003, MCT) is a Senior Instructor for Global Knowledge. She has done consulting work for multiple private and public companies and Canadian government agencies. Sue is an instructor, author, and course director. She teaches a full range of Windows 2003 and Networking/TCP/IP courses and holds a Masters degree in Information Science. You can contact her at [sue.cooney@globalknowledge.com](mailto:sue.cooney@globalknowledge.com).