

The Future of Your PC's Software

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64-Bit Computing Allows for More RAM

In 1986, Intel introduced its first 32-bit CPU. It wasn't until 1993 that the first fully 32-bit Windows OS--Windows NT 3.1--followed, officially ending the 16-bit era. Now 64-bit processors have become the norm in desktops and notebooks, though Microsoft still won't commit to an all-64-bit Windows. But it can't live in the 32-bit world forever.

What is it? 64-bit versions of Windows have been around since Windows XP, and 64-bit CPUs have been with us even longer. In fact, virtually every computer sold today has a 64-bit processor under the hood. At some point Microsoft will have to jettison 32-bit altogether, as it did with 16-bit when it launched Windows NT, if it wants to induce consumers (and third-party hardware and software developers) to upgrade. That isn't likely with Windows 7: The upcoming OS is already being demoed in 32-bit and 64-bit versions. But limitations in 32-bit's addressing structure will eventually force everyone's hand; it's already a problem for 32-bit Vista users, who have found that the OS won't access more than about 3GB of RAM because it simply doesn't have the bits to access additional memory.

When is it coming? Expect to see the shift toward 64-bit accelerate with [Windows 7](#); Microsoft will likely switch over to 64-bit exclusively with Windows 8. That'll be 2013 at the earliest. Meanwhile, Mac OS X Leopard is already 64-bit, and some hardware manufacturers are currently trying to transition customers to 64-bit versions of Windows (Samsung says it will push its entire PC line to 64-bit in early 2009). And what about 128-bit computing, which would represent the next big jump? Let's tackle one sea change at a time--and prepare for that move around 2025.

Windows 7: It's Inevitable

Will Windows 7 finally push PC software into the 64-bit world for good? We can only hope. Whether you love Vista or hate it, the current Windows will soon go to that great digital graveyard in the sky. After the tepid reception Vista received, Microsoft is putting a rush on Vista's follow-up, known currently as [Windows 7](#).

What is it? At this point Windows 7 seems to be the [OS that Microsoft wanted to release as Vista](#), but lacked the time or resources to complete. Besides continuing refinements to the security system of the OS and to its look and feel, Windows 7 may finally bring to fruition the long-rumored database-like WinFS file system. Performance and compatibility improvements over Vista are also expected.



But the main thrust of Windows 7 is likely to be enhanced online integration and [more cloud computing features](#)--look for Microsoft to tie its growing Windows Live services into the OS more strongly than ever. Before his retirement as Microsoft's chairman, Bill Gates suggested that a so-called pervasive desktop would be a focus of Windows 7, giving users a way to take all their data, desktop settings, bookmarks, and the like from one computer to another--presumably as long as all those computers were running Windows 7.

When is it coming? Microsoft has set a target date of January 2010 for the release of Windows 7, and the official date hasn't slipped yet. However, rumor has the first official beta coming out before the end of this year. Google's Desktop OS



The independently created gOS Linux is built around Google Web apps. Is this a model for a future Google PC OS? The independently created gOS Linux is built around Google Web apps. Is this a model for a future Google PC OS? In case you haven't noticed, Google now has its well-funded mitts on just about every aspect of computing. From [Web browsers](#) to [cell phones](#), soon you'll be able to spend all day in the Googleverse and never have to leave. Will Google make the jump to building its own PC operating system next?

What is it? It's everything, or so it seems. Google Checkout provides an alternative to PayPal. Street View is well on its way to taking a picture of every house on every street in the United States. And the fun is just starting: Google's early-beta Chrome browser earned a 1 percent market share in the first 24 hours of its existence. Android, Google's cell phone operating system, is hitting handsets as you read this, becoming the first credible challenger to the iPhone among sophisticated customers.

When is it coming? Though Google seems to have covered everything, many observers believe that logically it will next attempt to attack one very big part of the software market: the operating system.

The Chrome browser is the first toe Google has dipped into these waters. While a browser is how users interact with most of Google's products, making the underlying operating system somewhat irrelevant, Chrome nevertheless needs an OS to operate.

To make Microsoft irrelevant, though, Google would have to work its way through a minefield of device drivers, and even then the result wouldn't be a good solution for people who have specialized application needs, particularly most business users. But a simple Google OS--perhaps one that's basically a customized Linux distribution--combined with cheap hardware could be something that changes the PC landscape in ways that smaller players who have toyed with open-source OSs so far haven't been quite able to do.

Check back in 2011, and take a look at the not-affiliated-with-Google gOS, [thinkgos](#) in the meantime.