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Windows Vista  
Microsoft

## [Vista Requires More Hardware Resources than Microsoft's Windows for Supercomputers](#)

*A sign of Microsoft's alienation from its users?*

A new level of the absurd... Windows Vista requires more hardware resources than Microsoft's Windows for Supercomputers. Yet one operating system is designed to run on home computers while the other is aimed at the high-performance computing (HPC) market. And when it comes to the actual machines, there simply is no contest between the performance delivered by a commercially-available, off-the-shelf PC and a supercomputer.

**Super-Windows** With Windows Compute Cluster Server 2003 Microsoft made the first step into the high-performance computing market, the initial stage in a strategy set up to make HPC a mundane aspect of the commercial mainstream, in the company's vision. The availability of Windows HPC Server 2008 will be synonymous with the Redmond company gaining ground on parallel supercomputers and computer clusters. Parallel computing represents without a doubt the future direction of evolution for processor architectures, with even [Microsoft anticipating the tailoring of the Windows client infrastructures](#). At this point in time the technology is light years away from general consumer implementation, with the market still struggling to move from 32-bit to 64-bit architectures. In fact, Windows 7, the successor of Windows Vista, will continue to be offered in both 32-bit and 64-bit flavors in 2010. But perhaps the biggest challenge of a scenario involving the mainstream adoption of multicore CPUs is related to the creation of an ecosystem of software made up of parallel programs that would integrate with the new processors. Windows HPC Server 2008 is the successor of Windows Compute Cluster Server 2003, based on the 64-bit Windows Server 2008 and currently planned for the second half of 2008. With Windows Compute Cluster Server 2003 already on a couple of the world's top 500 supercomputers (according to the Linpack benchmark) the Mitsubishi UFJ Securities Cluster Achieves 6.5 TFLOPS and the Microsoft Rainier Cluster Achieves 9.0 TFLOPS, Windows HPC Server 2008 is not a newcomer to the market. **Surely a Windows for Supercomputers Cannot Run with Less Resources than Windows Vista...**"Windows HPC Server 2008 is a two DVD package. The first DVD contains the setup for a 64-bit version of Windows Server 2008 that is restricted to an HPC workload, and the second DVD contains the Microsoft HPC Pack, which provides the additional interfaces, tools, and management infrastructure. The minimum hardware requirements for Windows HPC Server 2008 are similar to the hardware requirements for the x64-based version of the Windows Server 2008 Standard operating system. Windows HPC Server 2008 supports up to 64 GB of RAM," Microsoft revealed in [Windows HPC Server 2008 Overview whitepaper](#). Windows HPC Server 2008 will integrate seamlessly with the following processors: AMD Opteron, AMD Athlon 64, Intel Xeon with Intel EM64T and Intel Pentium with Intel EM64T. But the limit of 64 GB of RAM is already an indication of the truly minimum system requirements of the operating system. The truth is that Windows Vista and Windows Server 2008, more so after the availability of Vista SP1, share the same core and in this context the resources necessary for running the two operating systems are close. Windows HPC Server 2008 Minimum Hardware Requirements (according to Microsoft – emphasis added):"- CPU - x64 architecture computer with Intel Pentium or Xeon family processors with Intel Extended Memory 64 Technology (EM64T) processor architecture; AMD Opteron family processors; AMD Athlon 64 family processors; compatible processor(s)- **RAM - 512 MB**- Multiprocessor support - Windows HPC Server 2008 and Windows Server 2008 Standard Edition support up to four processors per server. Windows Server 2008 Enterprise Edition supports up to eight processors per server.- Minimum Disk

space for setup - 50 GB."Now, Microsoft failed to give indications on the processors, but the system requirements for Windows Server 2008 will clarify this aspect. However, outside of the 50 GB hard disk space, Windows HPC Server 2008 runs with just 512 MB of RAM. Yes, try doing that with Windows Vista. Because of the multiple flavors of Microsoft's latest Windows client, there is one Vista that can run on 512 RAM – the Home Basic SKU. **Give Me More RAM, Vista Is Still Hungry!**But even for Windows Vista Home Basic, 512 MB of RAM is equivalent with the [recommended minimum hardware requirements](#) that are guaranteed to offer just basic (!) functionality and nothing more. Now, in all fairness, Microsoft has traditionally upped the stakes in terms of hardware requirements with each new edition of Windows. Addend functionality, features and capabilities inherently demand increased resources. Vista is by no means an exception to this rule. Vista Home Basic will run with the same amount of system memory as Windows HPC Server 2008. But the same is not valid for the remaining editions of the operating system, which need double the RAM. "Windows Vista Home Basic:• 800-megahertz (MHz) 32-bit (x86) processor or 800-MHz 64-bit (x64) processor • **512 megabytes (MB) of system memory**• DirectX 9-class graphics card • 32 MB of graphics memory • 20-gigabyte (GB) hard disk that has 15 GB of free hard disk space." "Windows Vista Home Premium, Windows Vista Business, Windows Vista Enterprise, and Windows Vista Ultimate:• 1-gigahertz (GHz) 32-bit (x86) processor or 1-GHz 64-bit (x64) processor • **1 GB of system memory** • Windows Aero-capable graphics card (Note: this includes a DirectX 9-class graphics card that supports the following: a WDDM driver, Pixel Shader 2.0 in hardware, 32 bits per pixel) • 128 MB of graphics memory (minimum) • 40-GB hard disk that has 15 GB of free hard disk space."Just keep in mind that for the Home Premium, Business, Enterprise and Ultimate editions of Vista, 1 GB of RAM will not deliver the top user experience. Users that want to see Vista fly will have to feed it accordingly starting somewhere at 2+ GB. And Vista will eat every last crumb of system memory. In this respect there have been [claims that Vista lives in full with 4 GB of RAM](#) under the hood. At the same time, the high-end editions of Vista on 64-bit can go as high as 128 GB of system memory. Windows HPC Server 2008 just pales in comparison, doesn't it? And here are the [Windows Server 2008 system requirements](#), just for the sake of the comparison:"- Processor: minimum: 1GHz (x86 processor) or 1.4GHz (x64 processor) recommended: 2GHz or faster- Memory: minimum: 512MB RAM - recommended: 2GB RAM or greater - optimal: 2GB RAM (Full installation) or 1GB RAM (Server Core installation) or more; maximum (32-bit systems): 4GB (Standard) or 64GB (Enterprise and Datacenter); maximum (64-bit systems): 32GB (Standard) or 2TB (Enterprise, Datacenter and Itanium-based Systems)- Available Disk Space: minimum: 10GB - recommended: 40GB or greater."**Microsoft's Slow Divorce from Users**Microsoft is in bed with the end users, but simultaneously the company has a responsibility to its partners and especially to the original equipment manufacturers. The Redmond company sells more Windows copies via the OEMs than through all the additional channels combined. According to Microsoft's own estimates, sales of Windows through the OEM channel account for in excess of 80% of all the revenue brought in by the Client division. In 2007 alone PC shipments worldwide are estimated to hit 260 million units. This figure will be surpassed in 2008. The vast majority of the 260 million computers are preloaded with Windows, with the focus falling on Windows Vista. Now imagine all the Vista SKUs running perfectly on 1 GHz processors with 512 MB of RAM. The Redmond company is in fact stopping short of gambling with its users by forcing resource hungry Windows clients down their throats. Microsoft and its OEM partners function under the same rules as a self-sufficient ecosystem. Windows helps sell computers and PCs push Windows. And with a sales target of 250+ million units per year neither Microsoft nor the OEMs can afford to slip up and not drive consumer demand and attract new customers, while at the same time fueling revenue and increasing market share. With Vista, Microsoft has evolved user experience by transforming the operating system into a resource hog. The company recently promised to tone down architectural changes to the operating system with [Windows 7](#). One year after Vista was released to manufacturing the

platform enjoys approximately 8% of the operating system market, in accordance with statistics from Net Applications and with Microsoft applauding the shipping of over 88 million copies of the product worldwide.