

18 December 2007

By: Marius Oiaga, Technology News Editor

Windows Vista
Microsoft

[32-bit Windows Vista SP1 to Handle a Full 4 GB of RAM?](#)

Yes and no!

Despite being an avid resource hog, Windows Vista is limited in terms of the sheer amount of resources that can be fed to it. The restrictions are more evident when it comes down to the 32-bit version of the operating system, while the 64-bit variants support a little more kick. I am, of course, referring to the maximum amount of physical system memory than can go into the operating system. For the 32-bit editions of Vista, users will have their hands tied when they will attempt to build a system configuration with 4 GB of RAM, or more. Actually, every bit of system memory over 3.5 GB is just wasting away. But, will the first service pack for Windows Vista resolve this aspect? Well, the answer is both yes and no. First off, Microsoft will indeed tweak Vista with the release of SP1, so that the operating system, following the implementation of the refresh, will be able to "deal" with a total of 4 GB of RAM. However, let's be fair, you all knew that this was coming, the 32-bit Windows Vista SKUs have a limited address space of 4 GB. This will not change with the introduction of SP1. In these 4 GB, Vista has to address not only the system memory, but the additional hardware items making up a system. By all means, SP1 will not extend the address space limitations of Vista. But, the service pack will indeed tweak the operating system. Namely, the changes will permit Vista SP1 to report the full quantity of RAM to users, especially if it is 4 GB. The RTM version of Vista is only able to report the system memory that is addressed, no more than 3.5 GB of RAM. At the same time, this detail is strictly dependent on the hardware infrastructure, so it will not be valid for all Vista users, SP1 or no SP1. "With SP1, Windows Vista will report the amount of system memory installed rather than report the amount of system memory available to the OS. Therefore 32-bit systems equipped with 4GB of RAM will report all 4GB in many places throughout the OS, such as the System Control Panel. However, this behavior is dependent on having a compatible BIOS, so not all users may notice this change", Microsoft revealed. All the 32-bit editions of Vista can handle up to 4 GB of RAM, by default, but address much less, a half a GB less, for that matter. Vista Starter is an exception to this rule as it provides support for a total of 1 GB of RAM. There is a way to force Vista to address more than 4 GB of RAM for the 32-bit editions, and it involves the [Physical Address Extensions](#). Otherwise users should look to the 64-bit editions of Vista. x64 Vista Home Basic can go as high as 8 GB of RAM, x64 Home Premium to 16 GB and the Business, Enterprise and Ultimate can manage up to 128 GB of system memory.