

### PC configuration affects Skype Internet phone quality

Intel Corporation commissioned Principled Technologies to study the audio quality of Skype Internet phone calls (Voice over IP, or VoIP calls) on business PCs performing typical user functions. As PCs become alternatives to phones and provide enhanced calling features such as call forwarding, conference calling, and multiple telephone numbers, Internet phoning over PCs will become increasingly common. Our tests compared:

- A 2005 business PC with an Intel® Pentium® D Processor 840 with dual-core processing
- A roughly three-year-old PC with an Intel® Pentium® 4 Processor 2.0 GHz

We tested audio quality and system response time using a common scenario in which a user is working with two Microsoft Office 2003 programs while he is on a Skype Internet conference call and a scheduled virus scan is running in the background. This type of scenario is known as “multitasking” because the PC is performing multiple tasks at once, even though the user might be focusing on only one or two of the tasks at any given time.

In our tests, on the three-year-old PC the Internet phone calls were interrupted by audio problems—noises, drop-outs, and so on—eight times in the course of a typical call with a female voice, and the interruptions affected 59 seconds of the call. The 2005 model with the new Intel Pentium D processor 840 with dual-core capability, by contrast, showed **almost no audio problems and no time lost.**

The newer PC also delivered much better response time on the applications, as Figure 1 shows. On all timed tasks, the older system took nearly six times longer to open programs and complete tasks as the 2005 model system. In one case, for example, a task that completed in 15.7 seconds on the new PC took more than a full minute to complete on the older PC. Our test results illustrate the types of improvements businesses considering Internet phoning would be able to achieve with newer PCs with dual-core processing as opposed to existing three-year-old models. The higher audio quality and substantially better response time of newer PCs would deliver a better user experience with Internet phoning.

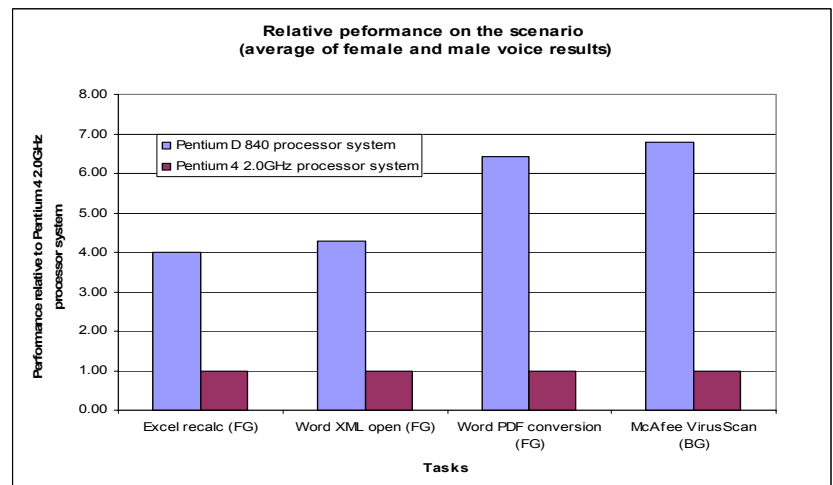
For more information on these tests and to see the full test report, visit:  
[www.principledtechnologies.com/clients/reports/Intel/SkDCWP.pdf](http://www.principledtechnologies.com/clients/reports/Intel/SkDCWP.pdf).

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#### Key findings

- ❖ The PC with an Intel® Pentium® D Processor 840 with dual-core processing delivered high fidelity Skype Internet phone calls that we found to be nearly flawless despite heavy system loads.
- ❖ By contrast, the three-year-old PC experienced a significant number of relatively long audio glitches under the same workload.
- ❖ The newer PC also delivered much better application response time when facing the sustained load of an Internet conference call and multiple applications running at the same time.



**Figure 1: Overall average performance, relative to the Intel® Pentium® 4 Processor 2.0 GHz processor-based system on all tasks for both systems. Taller bars indicate better performance.**