



Instant Insight

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## Intel Introduces New Itanium 2: Third Time's the Charm or Madison Blues?

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Intel this week announced the availability of the newest iterations of its 64-bit Itanium 2 processor line, formerly code-named "Madison." According to Intel, the new Itanium 2 processor delivers 30-50% better performance than the previous Itanium 2 (code-named McKinley). System vendors including HP, Dell, IBM, Unisys, NEC and SGI all announced plans to deliver solutions based on the new processor. The Itanium 2 is available at 1.5GHz with 6MB of L3 cache, at 1.4GHz with 4MB of L3 cache, and at 1.3GHz with 3MB of L3 cache for \$4,226, \$2,247 and \$1,338 respectively in 1,000 unit quantities. In a separate event, AMD announced expansion of its Opteron product family with the new 800 Series for 4-way and 8-way servers and the 100 Series, for 1-way servers and workstations. In thousand unit quantities prices for the 800 series ranges from \$749 to \$2,149 while prices for the 100 Series range from \$229 to \$649. Additionally, IBM announced that a 32-way eServer p690 "Regatta" server had achieved a new transaction processing (TPC-C) record, displacing a 64-way HP Superdome based on the new Itanium 2 processor.

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Since Intel's original "Merced" announcement in mid-1997, the road to Itanium 2 has been more than a little rocky but the company can not be faulted for lack of ambition. From the start, the effort included alliances with as many IT industry leaders as possible, and Intel's goal of achieving a position in the 64-bit world analogous to its domination of 32-bit computing was clear. The question to ask, then, is how much the new Itanium 2 will contribute to that effort. The fact is that while Intel's current share of the 64-bit computing market is miniscule (a condition that can be linked to factors from the Itanium's missed deadlines and performance glitches to sagging IT spending), the company has done an impressive job of lining up support for the new architecture. HP leads the way, of course, in both potential market share and influence, since the company was an early Itanium booster and was one of the first to announce plans to replace its PA-RISC processors with Intel's. The rest of the Itanium partner list reads like a veritable who's who of the IT world, with Sun as the only notable and expected absence. Additionally, Intel's symbiotic relationship with Microsoft is another factor pushing Itanium, since the chip's success is critical to Redmond's own datacenter computing goals. Perhaps most importantly, early indications suggest that the newest Itanium 2 appears to have lain to rest many or most of the performance issues that plagued earlier versions of the processor.

Sounds impressive, but does this mean that the new Itanium 2 will lead Intel toward the 64-bit market domination that the company and many industry pundits believe is inevitable? We have our doubts. Historically, vendors have gained 64-bit market share against rivals either by making it easier for 32-bit customers to make the transition to higher end systems or by offering significant price/performance benefits over competitors' solutions. As to the first, the impact of AMD's Opteron introduction earlier this year suggests that Intel missed the boat by pursuing a 64-bit architecture completely separate from its well-known 32-bit products. While it is true that the company has pledged to improve the performance of 32-bit applications on Itanium 2, AMD's native approach is more elegant and is also buttressed by the Opteron's notable scalability enhancements. Additionally, Opteron costs significantly less than equivalent Itanium 2

processors, which is always a plus to vendors developing transitional solutions for SMBs and for smaller vendors that focus on highly targeted markets such as technical workstations.

While benchmark records are as changeable as the weather, IBM's TPC-C announcement suggests that Itanium 2 has a more than a short way to go in establishing dominance in the 64-bit market. The problem we see here is not who leads the benchmark pack at any given time, but that the gains by any player represent an essentially incremental game of leapfrog. This is not to denigrate any vendor's solution, but to point out that offering minimal price/performance improvements over competitors is a far from compelling message in a market as demanding as the 64-bit space, and are unlikely to convince many if any datacenter owners to replace their old equipment with new Itanium 2 machines.

We believe Intel's success will reflect the abilities of its system vendor allies to convince their clients of Itanium 2's value proposition. That has been the case with the company's x86 products, but the 64-bit market is far more competitive and far less homogenous than the 32-bit space. The fact is that Intel's continuing x86 dominance has largely come at the expense of less able opponents. The company has never faced the likes of IBM or Sun on even ground. This could have ramifications for the many vendors dependent on the success of Itanium 2. For HP, delivering a seamless transition from soon-to-be-extinct platforms such as PA-RISC, Alpha, and MIPS (Tandem) to Itanium will be critical to the success of the company's greater enterprise product strategy. If the company's customers suspect any hiccups along the way, they are likely to realize (perhaps with some gentle prodding from the competition) that the migration path to POWER or SPARC solutions is no more painful than the one to Itanium 2. Vendors like IBM, for whom Itanium 2 is merely one of many solutions, will be less affected by and likely less motivated to drive Intel's success. Overall, while Itanium 2 is likely to continue gaining market share, we believe that Intel's road to 64-bit leadership will be longer and more difficult than the company and many in the industry expect.