

Intel's 64-Bit Is Valuable, but Only in Limited Applications

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Intel's decision to move to 64-bit addressing extensions affects only certain memory-hungry applications. But this is another step on the road toward 64-bit infrastructure.

NEWS ANALYSIS

Event

On 17 February 2004, Intel announced that the next generation of its Xeon processors, due in the second quarter of 2004, will incorporate 64-bit addressing extensions. The extensions will appear in Prescott-based desktop processors in the third quarter of 2004. These extensions are software-compatible with the extensions introduced by Advanced Micro Devices (AMD) for its Opteron processor in 2003.

Analysis

The newly added addressing extensions will bring value to a limited set of memory-intensive server and workstation applications. They are useful only in memory configurations greater than 4 gigabytes, where 64-bit Windows can provide far better application support than 32-bit Windows with addressing extensions. However, memory sizes will continue to grow and the extensions will lead to infrastructure that seamlessly transitions to 64-bit addressing.

Intel's Itanium line is not affected by this announcement. Server processors of this class — including Itanium, SPARC, POWER and PA-RISC — have system implementation requirements that extend well beyond 64-bit addressing. These requirements include attributes that are critical for core business operations: multiprocessor scalability, data integrity and mean time to failure.

AMD's position in the market is not materially affected by this announcement. Opteron's key attribute is its tremendous bandwidth, which translates into great performance in the small-server range. The system topology serves particularly well in four-way configurations.

Recommendations: Enterprises do not need to change server procurement and deployment plans as a result of the Intel announcement. Enterprise decision-makers should, however, evaluate 64-bit technology for applications such as: terminal servers; midsize database implementations; Microsoft Exchange Server; and application-oriented Web serving.

Analytical Sources: Martin Reynolds, John Enck, George Weiss and Brian Gammage, Gartner Research

Recommended Reading and Related Research

- "AMD's 64-Bit Hype Clouds Underlying Processor Values" — AMD's architectural extensions provide an opportunity to use 64-bit processing at mainstream price points. **By Martin Reynolds**
- "HP's Choice of Opteron Chip Will Roil the Server Industry " — Hewlett-Packard's embrace of Opteron will force other market leaders, including Dell and IBM, to reassess this processor. **By John Enck and others**

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