



Success Brief

Intel® Itanium® 2 Processor

Intel® Xeon® Processor

Manufacturing

Data Warehouse

Microsoft®

“This system is smoking fast — well beyond expectations. It is amazing hardware.”

Quentin Hurd
Product Manager
Licensing Technologies
and Analytics Group
Microsoft Corp.

Accelerating Data Delivery

Dual-Core Intel® Itanium® 2 Processor, SQL Server* 2005 Yield 8X Speedup for Microsoft

Whether consumers are buying a car or acquiring licensed software, the costs of these goods may vary depending on the dealer or store, the geographic region’s foreign exchange rates, taxes and other factors. Microsoft Corporation’s World Wide Licensing and Pricing group wanted to better understand those variations.

In August, 2005, the group deployed an 11-dimension Volume License Pricing and Sales data warehouse cube based on a pre-release version of Microsoft SQL Server* 2005 and running on a four-way, 64-bit Intel® Itanium® 2 processor-based server. A four-way, 64-bit Intel® Xeon® processor-based application server handles reporting and user access. Together, the two systems are helping Microsoft better understand competitive patterns, maximize revenues, and promote a positive and consistent experience for consumers and distributors.

In October, the data warehouse migrated to a pre-release version of Intel’s next-generation, dual-core Intel Itanium 2 processor that also supports Intel® Hyper-Threading (HT) Technology. The result: speedups of up to 800 percent on critical queries¹.

“With the Itanium 2-based platform, our 64-bit business intelligence solutions deliver the accountability and reliability it takes to make critical decisions around more than \$15 billion in annual revenue,” says Joe Matz, General Manager of Microsoft’s World Wide Licensing and Pricing organization.

Measures of Success

- Since implementing the cube, analytical questions are answered within minutes rather than days, weeks or months.
 - Upgrading to the next-generation Intel® Itanium® 2 processor produces results up to 800 percent faster and enhances scalability.
 - The 64-bit Intel Xeon processor-based application server speeds Terminal Server performance by 200-400 percent compared to a 32-bit implementation. It also reduces network traffic and provides the scalability to support rising numbers of concurrent users.
-

¹The original server used Intel Itanium 2 processors at 1.3 GHz and was configured with 9 MB of L3 cache. The new server used dual-core Intel Itanium 2 processors at 1.3 GHz with 24 MB of L3 cache. Both configurations used 32 GB of RAM.

The processor's dual-core architecture easily handles the 200 GB cube and supporting data warehouse.

Microsoft's Volume License analytics cube brings together information from a variety of data sources and includes global pricing data, foreign exchange rates and sales information. "It easily fills 200 GB of hard drive space, and consumes up to 20 GB of RAM at any one time," says Quentin Hurd, Product Manager in Microsoft's Licensing Technologies and Analytics group. The system handles 200 concurrent users without blinking.

Before deploying the cube, controllers pieced together data from numerous business systems and analyzed it with Excel* Pivot Tables. "For a complex scenario, it took a lot of hunt and peck work to query all the data sources and gather all the information you needed," recalls Melony McGuffin, Group Manager for Pricing Management at Microsoft. "Each query typically took 40 minutes to an hour, and one was so complex it ran for 20 hours. Now, we can do our investigative work much more quickly. We can measure and understand key aspects of our business better and faster, and use that knowledge to enable data-driven decision making."

Find a business solution that is right for your company. Contact your Intel representative or visit the Intel® Web site at <http://www.intel.com/business>

Return on Investment

- With the advanced analytics capabilities of Microsoft SQL Server* 2005 and the 64-bit performance of the Intel® Itanium® 2 and Intel® Xeon® processors, Microsoft financial controllers and executives can quickly analyze complex numbers and make data-driven decisions. This enhances their productivity and gives them more timely insights into a key aspect of the business.
- The increased visibility into the business helps Microsoft make smarter licensing and pricing decisions concerning more than \$15 billion in yearly revenues. "Bottom line is, we can better understand the business," McGuffin says. "We can identify patterns and opportunities and ask questions that we couldn't ask before. We can apply logic and consistency to something that's been nearly invisible up till now. It's a huge win."



A Powerful Combination

The combination of Intel® dual-core processing and 64-bit memory addressability is a potent one, according to Hurd. "With the next-generation Itanium 2 processor, we've suddenly gone from four processors to the equivalent of 16," he says. "And with the Itanium 2 processor's large address space, we're not as dependent on the I/O subsystem. SQL Server 2005 can put so much more data into RAM that it can really cruise, and the queries speed up dramatically."

Hurd sees SQL Server 2005 and Intel 64-bit processing opening the door to much broader use of sophisticated business intelligence. "This platform makes it so powerful and cost-effective to do advanced business intelligence, and SQL Server Development Studio and a plethora of helpful wizards make it remarkably easy to get going," he says. "I expect a lot more people will expand their analytics and begin using these powerful, 64-bit solutions. Sixty-four bit is going to become a necessity for knowledge workers."

Copyright © 2006 Intel Corporation. All rights reserved. Intel, the Intel logo, Intel. Leap ahead., the Intel. Leap ahead. logo, Itanium, Itanium Inside, Xeon and Xeon Inside are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the United States and other countries.

64-bit Intel® Xeon® processors with Intel® EM64T requires a computer system with a processor, chipset, BIOS, OS, device drivers and applications enabled for Intel EM64T. Processor will not operate (including 32-bit operation) without an Intel EM64T-enabled BIOS. Performance will vary depending on your hardware and software configurations. Intel EM64T-enabled OS, BIOS, device drivers and applications may not be available. Check with your vendor for more information.

This document is for informational purposes only. INTEL MAKES NO WARRANTIES, EXPRESS OR IMPLIED, IN THIS DOCUMENT.

*Other names and brands may be the property of their respective owners. 0106/ERC/RL/XX/PDF 311184-001US

