

**Read this story to learn:**

**How to gain business benefits from smart development of server architecture**

**How to build the business case for infrastructure investments**

**How to apply best-practices from IT leaders**

# SIMPLIFY, SAVE, SUCCEED

## COMPANIES SEE BETTER BUSINESS RESULTS, NEW COMPETITIVE EDGE, FROM INVESTMENT IN INTEL®-BASED PLATFORMS

Efficient, economical and reliable. These qualities give upstart air carrier JetBlue<sup>†</sup> its distinct competitive advantage in the turbulent airline industry. Amidst competitors known for late planes, diminished service and inflated costs, JetBlue's planes fly on-time, with top-flight service, and at bargain basement passenger fares. To maintain this edge, the company builds its business systems upon an equally qualified IT architecture.

Since its start-up in 2000, JetBlue has standardized on a single computing architecture—Intel. The airline's massive data warehouse and frequent flier

program, TrueBlue, are housed on a range of 4-, 8- and 16-way Intel® Itanium® 2-based Unisys ES7000 servers on Microsoft Windows\*. And JetBlue's online reservation system, which delivers 72 percent of JetBlue's revenue, is about to be moved onto Intel's new, enhanced platform, the Intel® Itanium® 2 processor 6M L3. Additionally, the airline runs its internal operations on roughly 250 Intel® Xeon™ processor-based HP servers.

As a result of this consolidation onto a single powerful platform, JetBlue hasn't just boosted computing power—it's saved an estimated 60 percent in

## Intel Alliance Profile: Hewlett-Packard<sup>†</sup>

In the midst of tough economic times, companies are challenged to meet critical objectives such as cutting costs while keeping pace with the enormous rate of change and creating solutions to drive the business forward. Together, HP and its partners are enabling customers like Raymond James and Johns Hopkins University to manage change and get more from their IT investments—more accountability, more agility and a better return on information technology.

Raymond James Financial, one of the largest financial services firms in the United States, is building a data warehouse and decision support system for more than 5,000 financial advisors nationwide using a next-generation Itanium 2-based Superdome\* server from HP. "We needed an architecture with exceptional performance and scalability that would help us drive down IT costs," says Tim Eitel, CIO, Raymond James Financial. "Our HP and Windows\*-based solution gives us the processing power and scalability for a massive database and data warehouse solution at an exceptional value."

The Johns Hopkins University project maps the universe as a participant in the Sloan Digital Sky Survey (SDSS) and is currently handling over 100 million galaxies in several databases, stored in Microsoft SQL Server\* 2000. "With each successive generation of Itanium-based servers from HP, we have reduced the time it takes to analyze the statistical properties of galaxies and other objects by—in some cases—months," reports Alex Szalay, Alumni Centennial professor, Johns Hopkins University.

But performance is only part of the story, Itanium 2-based HP systems offer breakthrough flexibility—with the ability to run HP-UX\*, Microsoft Windows\* or Linux\* on an industry standard Itanium 2-based platform. What's more, with Itanium 2-based HP solutions, customers can achieve more agility, more accountability, and better return on IT than ever before. For more information visit [www.hp.com/go/itanium](http://www.hp.com/go/itanium)

operational costs by not having to hire people needed to support multiple platforms. This all contributes to an impressive bottom line: in an industry where competitors increasingly bleed red ink, JetBlue grew 63 percent in the first quarter of 2003. Part of that growth easily can be attributed to smart IT spending.

"When JetBlue considers a server solution, we have three important criteria: scalability, manageability and availability," says airline Vice President/CIO Jeff Cohen. "In these areas, [Intel] has been very good to us."

Of course, you needn't be a high-flying startup to benefit from efficient, economical and reliable systems. At a time when IT budgets remain constrained by the weakened economy, IT leaders throughout the industry are increasingly turning to the same scalable solutions, for the same solid business results, that have fueled JetBlue's success.

### COMMON CHALLENGES, UNIQUE SOLUTIONS

Operating costs. Maintenance. Infrastructure upgrades. These are among the top challenges for IT leaders who struggle to minimize new spending—while also consolidating and/or upgrading back-end servers to maximize front-end business processes. It's almost a Catch-22, this notion of simultaneously controlling costs while unleashing new computing power and delivering greater business value. Yet companies such as T. Rowe Price, Monster and NASDAQ have met these objectives by building their systems upon flexible, scalable and reliable Intel architecture-based computing platforms. Among the business benefits these companies have gained through smart investments:

**Competitive Advantage** (see "Successfully Managing Rapid Growth at Monster")

**Simplified IT Environments** less costly to maintain (see "Server Consolidation at T. Rowe Price")

**Greater Productivity and Enhanced TCO** (see "Powering the Enterprise at NASDAQ")

Like business/IT leaders everywhere, Doug Busch, vice-president/CIO at Intel, struggles with the same daunting business and technology challenges. And like his peers, Busch strives to do more than just maintain his firm's technology status quo—he's also building for the future. To

## Intel in Action: Server Consolidation at T. Rowe Price<sup>†</sup>

Application and server consolidation: they're among the most compelling uses for Intel architecture-based platforms. Intel-based systems enable multiple and diverse operating systems and application stacks to be consolidated onto a single four-way, eight-way or above server without the cost and complexity of software migration and restrictive proprietary server technologies.

Leading investment management firm T. Rowe Price sought an IT department's wish list: reduced server and storage costs, improved manageability and greater flexibility with headroom for future growth. The answer: consolidation on Intel-based servers.

Boasting \$140 billion in managed assets, T. Rowe Price is in the process of consolidating a wide variety of off-the-shelf and custom applications on its Intel-based servers. At last check, the firm had attained a server consolidation ratio of 26:7 enroute to a goal of 10:1.

To get there, T. Rowe Price consolidated 26 two- and four-way Intel-based servers onto two six-way, and five four-way servers using advanced tools from VMware and Aurema. The VMware ESX Server\* offering creates virtual machines-- each isolated from each other—that enable multiple operating systems and application stacks to run efficiently on a single Intel-based server. The 26:7 ratio was chosen to ensure quick payback for the project and to provide substantial room for growth.

T. Rowe Price has found the environment much easier to manage, as changes are easily implemented right up to application landing dates. As an additional sign of a smooth deployment, the support staff has not yet received a single customer complaint. Now the development teams can more quickly test and deploy new applications, while also supporting multiple versions for each as each package evolves.

For more information on T. Rowe Price, visit [www.troweprice.com/](http://www.troweprice.com/)

achieve these goals, Busch and his IT staff have put their own Intel®-based server innovation to work, and the investment has paid off in ways that also benefit Intel's customers.

Since 1999, Busch and his team have achieved huge savings by transitioning the company's 16,000-server global computing environment to server solutions based on the Intel® Xeon™ processor family. And with the anticipated cost savings from Itanium® 2-based servers, Intel's IT infrastructure will run on complementary platforms that deliver better business results faster and more cost-effectively than their predecessors or competing architectures.

"Given that newer platforms become faster and less expensive over time, the way we approach a server upgrade is to start with a clean sheet of paper," says Busch, who oversees Intel's 4,000-person global technology unit. In advising customers how to achieve greater computing power and costs savings in their own enterprises, Busch recommends the same methodology he employed: **1. Assess** your company's computing requirements; **2. Evaluate** computing price/performance trends; **3. Calculate** the Total Cost of Ownership (TCO) of a refresh; **4. Compare** the TCO of a refresh to the cost of simply buying more of what's already in place—including hardware, software licensing and operational expenses.

Typically, a refresh provides a lower cost structure, Busch says, and enables IT departments to build a scalable, man-

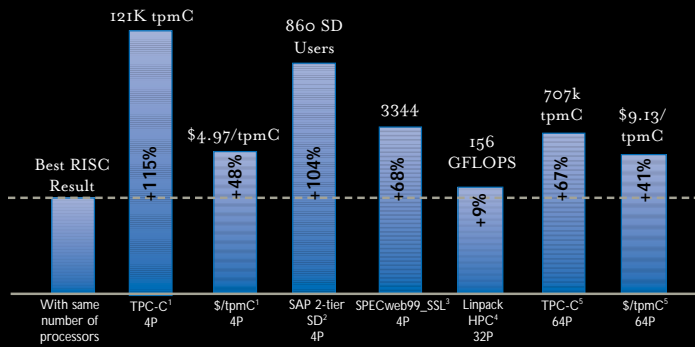
## INTEL® XEON™ PROCESSOR MP

### Ideal for Mid-Tier CRM, SCM and Business Intelligence

Aimed at medium-sized computing environments, this 32-bit platform is optimized for midsize computer workloads in the application and small to medium data tiers. Ideal for customer relationship management, site management, business intelligence and supply chain management.

- >> For databases <4-16 gigabytes of memory
- >> Broad ecosystem of standard solution providers
- >> Broad deployment enhances interoperability across platforms
- >> Runs thousands of applications

For more information on Intel® Xeon™ processor MP-based servers, visit [www.intel.com/ad/servers](http://www.intel.com/ad/servers)



## INTEL® ITANIUM® 2 PROCESSOR 6M: INDUSTRY-LEADING PERFORMANCE RESULTS

1 Source www.tpc.org: Intel® Itanium® 2 processor results on HP Server rx5670\* using 4 Intel® Itanium® 2 processors 1.50 GHz with 6MB L3 cache, 64GB memory, Microsoft Windows® Server 2003, Enterprise Edition and Microsoft SQL Server 2000\* Enterprise Edition 64-bit, \$4.97 \$/tpmC, availability date 8/1/03. Alpha results of 56.3K and \$9.44 price/tpmC on HP AlphaServer\* using 4 ES45 processors 1.25 GHz, 32GB memory, availability 09/27/02.  
 2 Source: www.sap.com/benchmark. Intel® Itanium® 2 processor results measured on HP Server rx5670\* using 4 Intel® Itanium® 2 processors 1.50 GHz with integrated 6MB L3 cache, 24GB of memory, HP-UX\* 11i, SAP rev 4.6 C, Oracle9i\*. Best RISC result of 420 from www.sap.com/benchmark on AlphaServer\* ES45 1000 MHz.  
 3 Source: www.spec.org as of 4/21/03: Intel® Itanium® 2 processors result on HP Server rx5670\* using 4 Intel® Itanium® 2 processors 1.50 GHz with 6MB L3 cache, 24GB memory, HP-UX\*. Power 4+ result of 1988 on pSeries\* 630 Model 6C4 using 4 Power 4+ processors 1.45 GHz with 8GB cache (off chip), 32GB memory, AIX.  
 4 Source: Dell Computer for Intel® Itanium® 2 processor 6M results on a cluster of 16 Dell PowerEdge\* Servers, each with 2 Intel® Itanium® 2 processors 6M at 1.50 GHz, 4GB RAM, RedHat Linux\* AS 2.1. Source: http://www-1.ibm.com/servers/eserver/pseries/hardware/system\_perf.pdf for Best RISC result of 143.3GFLOPs on IBM eServer\* p690 with 32 Power 4+ processors at 1.70 GHz.  
 5 Source: www.tpc.org: HP Superdome\* Server, 707,102 tpmC at \$9.13/tpmC, with 64 Intel® Itanium® 2 processors, each at 1.50 GHz with 6MB of L3 cache, running Microsoft Windows® Server 2003, Datacenter Edition and Microsoft SQL Server\* 2000 Enterprise Edition 64-bit, with 512 GB RAM. TPC-C Availability date: Oct. 23, 2003. Best RISC using HP 9000 Model Superdome\* Enterprise Server, 423,414 tpmC, \$15.64/tpmC, with sixty four (64) HP PA-RISC 8700 processors at 875 MHz, running HP-UX\* 11i 64-bit, Oracle9i\* Enterprise Database Server 9.2.0.1, 256GB RAM, Available: 8/26/2002.

ageable IT infrastructure for the future. With the Intel Xeon processor MP and Itanium 2-based platforms, Intel and its customers gain the ability to scale out and up—functionality that delivers the business benefits detailed above.

To provide customers with the computing platforms necessary to achieve these business benefits, Intel poured over \$9.5 billion into R&D and manufacturing innovation in fiscal year 2002. Much of this investment went to enrich the Intel Xeon processor family and fuel the emergence of complementary Intel Itanium 2 processors (see boxes, p. 3 and p. 4).

### THE ROI OF ARCHITECTURE INVESTMENT

Intel's R&D investment might seem counterintuitive to cost-conscious IT leaders, but industry analysts say forward-thinking companies are on the right track to reap business value from continued investment in server infrastructure. "Companies under-invest in technology at their peril—even in lean times," reports worldwide management consultancy McKinsey & Co. "New technology, deployed intelligently, can help organizations make dramatic leaps in productivity and redefine competition within [entire] sectors."<sup>1</sup>

Enterprise architecture expenditures are an especially smart investment in future business benefits, says Jeffrey Hewitt, principal analyst with Gartner Inc.

"As worldwide economies begin to show recovery, server infrastructure improvements will come back into the picture because companies seek to stay competitive and upgrade aging hardware platforms," Hewitt says. The server market segment's return to growth will be fueled primarily by Intel on the processor front and by Windows\* and Linux\* from an OS perspective, he adds.

These market trends and independent analysis point to a common conclusion: IT leaders must meet today's common business challenges—and tomorrow's—by investing in flexible, scalable, interoperable technology solutions. The unpleasant alternative is to risk falling behind in the race to generate new business value and drive innovation.

### POWERFUL PLATFORMS = PEAK PERFORMANCE

**It isn't just about the infrastructure.** Intel Xeon processor MP and Itanium 2 processor computing engines fuel more than a stronger, increasingly versatile IT

## INTEL® ITANIUM® 2 PROCESSOR Ideal for High-Performance Applications

Designed for the most demanding, data-intensive enterprise and technical applications. Ideal for these critical applications: large databases, enterprise resource planning (ERP), supply chain management (SCM), business intelligence and high-performance computing.

- >> 64-bit, with support for 32-bit
- >> For databases >4-16 gigabytes of memory
- >> Key databases, tools, and enterprise applications are available now, with others ramping dramatically throughout 2003
- >> Choice of operating systems, including Windows Server 2003, HP-UX and Linux. Optimized applications suitable for manufacturing, scientific, energy and financial services solutions

For more information on Intel® Itanium® 2 processor-based servers, visit [www.intel.com/ad/servers](http://www.intel.com/ad/servers)

foundation. They also enable companies to gain new business process efficiencies, streamlining business functions and enhancing employee productivity.

Business leaders realize that an advanced IT infrastructure can help extend their competitive advantages in key areas and, when coupled with improved processes and capabilities, drive innovation and new opportunities.

"As anyone on the Web knows, continuous enhancement is critical to attracting visitors and staying competitive," says Brian Farrey, president of TMP Technologies, a division of Monster Worldwide, which manages technology resources for its parent company (host of Monster.com). "The [Intel architecture] gives us more options and much faster development times when enhancing our site."

*Among the principal business benefits enabled by Intel's*

*evolving platforms:*

**Improved Online Transaction Processing and CRM:** Intel Xeon processor MP-based platforms are ideal for mid-tier business critical applications, helping companies in all industries streamline business processes. Among the business results enabled by Intel Xeon processor MP-based platforms: improved customer relationship management, collaboration and business intelligence.

**Maximized Databases, ERP, SCM and High-Performance Computing:** The Intel Itanium 2 processor is uniquely designed for the most demanding, data-intensive enterprise applications. These high performing computing engines enable businesses to deploy their highest-end enterprise applications (e.g. large databases and business intelligence) on cost-effective Intel-based servers, instead of those based on RISC architectures.

## Intel in Action: Powering the Enterprise at NASDAQ<sup>†</sup>

Like many enterprises in financial services, NASDAQ has banked heavily on—and is continuing to evolve with—platforms based on Intel<sup>®</sup> processors to keep pace with soaring transaction volumes driven largely by increased demand for instant information.

The company has also recognized the need to simplify and consolidate its hardware architecture to streamline development, deployment and support, having once had over a dozen hardware architectures in house.

Its efforts of late have been to harness Intel<sup>®</sup> Xeon<sup>™</sup> processor MP-based systems to run the database engine for

three emerging market data applications, as well as mission-critical applications launched and repeatedly enhanced over time.

"Intel Xeon processor MP and the future delivery of Intel<sup>®</sup> Itanium<sup>®</sup> processor family-based systems hold the key to NASDAQ's long-term business direction," says Richard Lind, SVP, technical operations for the firm. "They've laid out a very well-defined roadmap for driving down the cost of their processor technology while increasing the functionality it provides."

As a result, NASDAQ will migrate to the Intel Itanium processor family to power the core of SuperMontage<sup>\*</sup>, a "matching" engine that continually builds an internal representation of all buy and sell interests in a marketplace, and matches quotes and orders to produce instant execution functionality.

The data is fed into the three market data applications—DepthView<sup>\*</sup>, PowerView<sup>\*</sup> and TotalView<sup>\*</sup>—that are powered by Intel Xeon processors MP and were taken live late last year.

NASDAQ uses Intel Xeon processor MP-based Dell 6650<sup>\*</sup> servers running Windows 2000 for the application suite, and has supercharged the database power of a custom application, Surveillance Delivery Real-time (SDR), which analyzes market transactions and sends alerts to analysts for review. SDR handles 2,800 trades and 1,400 quotes per second.

"We're very impressed with the performance and future of the advanced Intel platforms and see them as the foundation for our future computing strategy," says Lind.

For more information about NASDAQ, visit [www.nasdaq.com](http://www.nasdaq.com)

Itanium 2-based servers provide faster data analysis and high availability in such industries as finance, manufacturing, energy and life sciences.

**Enhanced Business Performance, Reliability** Two new Intel products, the Intel® Itanium® 2 processor with 6M L3 cache, and the Intel® Xeon™ processor MP at 2.80 GHz/2MB, only improve upon the business results detailed above.

With core frequency doubled to 1.50GHz and the L3 cache doubled to 6MB, new Itanium 2-based platforms are the ideal solution for compute-intensive, high-end enterprise applications. With production software available today from Oracle, Microsoft and IBM, businesses can now deploy back-end databases on Itanium 2-based servers. Moreover, the new Itanium 2 processor with 6M L3 cache maintains full hardware and software compatibility with previous Itanium 2-based systems. Also, all Itanium 2 processors today offer support for IA-32

applications; a new technology called the IA-32 Execution Layer will further enhance this capability in 2H '03.

Meanwhile, the new Intel Xeon processor MP at 2.80 GHz/2MB cache is designed to increase performance levels for mid-tier server applications that demand large amounts of cache for frequent data access cycles. These new levels of speed and scalability are ideal to support robust CRM and SCM applications, allowing real-time access to information or fast data consolidation and analysis to support immediate opportunity identification—to cross-sell or up-sell, for example—and business decisions.

## INDUSTRY LEADERSHIP

Intel's industry leadership isn't just a marketing pitch; it's an operating philosophy to ensure that technology solutions address real-world business challenges facing specific industries. Intel drives and jointly develops these solutions

## Intel Alliance Profile: Oracle†

Product support from industry heavyweights like Oracle, which has long optimized its software for use with Intel processors, has already contributed to the accelerating adoption of Itanium 2-based servers. Oracle9i\* Database is available now for use with HP-UX\*, Linux\* and Microsoft Windows\* Server 2003 64-bit operating systems.

Oracle9i Database offers industry-leading scalability and reliability in both clustered and single system configurations, whether based on the Intel Itanium 2 processor or Xeon processor MP. It provides comprehensive features for OLTP and business intelligence, and delivers low total cost of ownership.

Using Oracle9i Real Application Clusters, an option of Oracle9i Database, running on

Itanium 2-based servers, businesses can deploy and manage Oracle's database on a cluster of several, high-performance, Itanium 2-based servers as easily as on a single, vertically integrated platform. This gives companies high availability, reliability and scalability, without application rewrites.

The Oracle-on-Intel combination has already demonstrated strong success across a wide array of customers including Dell, Electronic Arts, Texas Tech University, and Louisiana's Nineteenth Judicial District Court.

### KEY BENEFITS INCLUDE:

**Superior price/performance**—Intel Xeon processor MP-based servers clustered using Oracle9i Real Application Clusters deliver superior price-performance over non-clustered RISC-based systems. With the Oracle database, Itanium 2-based servers deliver additional and affordable power for the largest of enterprise databases.

**Security**—Oracle9i Database provides concrete security assurance, the only database built on a history of 15 independent security evaluations.

**Low Total Cost of Ownership**—Reduce operating costs by consolidating servers onto an Oracle9i Database cluster and Intel Xeon processor MP or Itanium 2-based systems, while improving performance and scalability and also gaining the flexibility offered by a standards-based computing platform.

**Latest Technology Advances**—The development teams at Oracle and Intel work closely together to guarantee that Oracle9i Database is optimized for both the Intel Xeon processor MP and Itanium 2-based servers.

For more information on Oracle, visit [www.oracle.com/intel](http://www.oracle.com/intel)

in a variety of ways. Among them:

**Alliances:** Intel works through Original Equipment Manufacturers (OEMs), independent software vendors (ISVs), solution providers (SPs) and system integrators (SIs) to enable customers to have a range of choices among complete, optimized solutions for their server infrastructure. Intel and this solutions community offer ready-made blueprints that help build successful enterprise systems and stay ahead of the competition. And Intel's two server families are backed by a groundswell of operating systems—Windows\*, Linux\* and Unix\*—hardware, software and database support. That support comes from technology leaders such as BEA, Dell, HP, IBM, Microsoft, Oracle, Red Hat, SAP, SAS and Unisys (see "Intel Alliance Profiles" for clear examples of this support).

**Services:** Customers also have a strong resource to

develop customized, optimized solutions with Intel® Solution Services, Intel's in-house, worldwide professional services organization. At several Intel Solution Centers worldwide, Intel experts design and test high-performance customer solutions on Intel-based servers—such as running heavy volumes of simultaneous workloads for a financial trading solution—to ensure high reliability before deployment. Customers include Virgin.com, Procter & Gamble, Sony Pictures Imageworks, Marriott, Credit Suisse, T-Mobile and Sungard.

**Expertise:** Through work with global technology leaders, international standards communities and technology end users, Intel has built respected expertise in guiding solutions development to deliver real business value that companies can take straight to the bottom line. Intel's team of professionals with direct industry expertise work with the worldwide technology community in areas like financial

## Intel in Action: Successfully Managing Rapid Growth at Monster.<sup>†</sup>

With its traffic having grown 30-fold since 1999, Monster needed a powerful infrastructure that could keep pace with its global growth and increasingly sophisticated site features—while keeping a lid on IT costs.

Monster began to migrate its operations to Dell servers powered by Intel® architecture four years ago. Today, 330 servers, primarily Intel® Xeon™ processor family-based platforms on Microsoft Windows\* 2000, run the company's career portal, which accommodates 600 million page views a month and sends out five million emails a day.

Another 700 servers handle the additional Monster Worldwide products—FastWeb\*, Flipdog\* and JobTrack\*—IT and back-end systems.

Thanks to the cost-effectiveness of its Intel architecture-based server infrastructure, Monster spends 5 to 7 percent of its revenue on IT infrastructure, compared to double-digit figures for many comparable Web giants. Those savings have helped Monster maintain 20 straight quarters of profitability. In addition, its Intel architecture-based server infrastructure provides the agility to roll out revenue-enhancing new features in only six weeks.

"Our availability is pretty close to 100 percent," says Paul Nielsen, senior vice-president of Monster's technology service organization. "If we have a problem with a box—which is almost never because of the hardware—we have redundancy within each cluster at each data center, and we have mirrored data centers. We can also pull boxes out for work with no impact to the end user."

Monster is sold on the savings, performance

and the future direction of Intel's processor architecture, having recently invested an additional \$2 million in Intel Xeon processor family-based servers, and has plans to evaluate Itanium 2-based platforms as growth of the site continues to soar.

But just how does Monster know that the basic cost structure and TCO of servers based on advanced Intel processors is less than that of rival platforms? Real-life experience amassed by acquiring several companies with servers based on other processor architectures.

"With these acquisitions, we're seeing the numbers in terms of what they are getting from their infrastructure and what it costs them, which is one of the reasons we migrate them pretty quickly to the platform we have," replies Farrey. For more information on Monster.com, visit [www.monster.com](http://www.monster.com)

## Intel Alliance Profile: Microsoft

### Featuring SQL Server\* 2000 Enterprise Edition†

With the growing complexity and competitive nature of business computing today, companies require their applications and databases to process and analyze massive amounts of data in a fast and efficient manner. Microsoft SQL Server\* 2000 Enterprise Edition is available in both 32-bit (for Intel Xeon processor MP) and now 64-bit (for Itanium 2-based platforms) versions, both of which are designed to help firms scale as their global users continue to grow.

SQL Server 2000 Enterprise Edition 64-bit on Itanium 2-based platforms opens a new chapter in high-end database computing at lower costs than Unix-based systems available today. Microsoft's commitment to Itanium architecture expands the scalability options for memory-intensive data applications such as large-scale e-commerce, data warehousing and analytics.

**Best Performance and Price/Performance<sup>3</sup>:** SQL Server 2000 64-bit delivers the fastest performance in non-clustered computing at 707,102 transactions per minute on the Itanium 2-based platform. It also delivers the best performance and price/performance for business-critical solutions on a 4-way Itanium 2-based server. Harnessing Itanium 2-based servers that support up to 512 gigabytes of RAM, SQL Server 2000 Enterprise Edition takes advantage of the advanced memory addressing capability to support rapid growth in mission-critical applications.

**Easy Migration and Fast Deployment:** Customer databases can be easily migrated from 32-bit to 64-bit, maintaining 100 percent T-SQL compatibility. No changes are required in client applications, which makes the job of database administrators and developers easier when deploying a 64-bit database into their server farm.

And with the ability to install up to 16 database engine instances on a single server, Microsoft offers the best economics of managing multiple types of high-end applications. With this package, companies realize these benefits while continuing to enjoy the familiar database environment, data access and formats to which they have grown accustomed. For additional information on Microsoft, visit: [www.microsoft.com/sql](http://www.microsoft.com/sql)

services, manufacturing, retail, government and communications. This is done to ensure that Intel's technology is put to work delivering strong ROI, lower TCO, and meeting specialized industry needs.

McKinsey & Co. recently singled out Intel for its success in delivering solid business results. "Intel has concentrated on new, higher-value goods, thereby generating extraordinary productivity advances as microprocessors and memory chips become exponentially more powerful though not exponentially more expensive."<sup>3</sup>

And, as shown in customer case studies such as JetBlue, Intel's powerful products, solutions and expertise are driving dramatic new business solutions—and value—across several key industries.

By taking JetBlue's lead—by making smart investments in enterprise architecture—well-established industry leaders find that they, too, can deploy critical business applications that can be described just like the upstart start-ups.

Efficient, economical and reliable.

For more information on Intel® Xeon™ processor MP and Intel® Itanium® 2 processor-based servers and educational opportunities, visit [www.intel.com/ad/servers](http://www.intel.com/ad/servers).

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<sup>1,2</sup> The McKinsey Quarterly Newsletter, May 6, 2003.

<sup>3</sup> Source: <http://www.tpc.org/> As of May 20, 2003: HP Superdome\*, 707,102 tpmC, \$9,130/tpmC, with 64 Intel Itanium 2 processors at 1.5 GHz, each with 6MB IL3 cache, running Microsoft Windows® Server 2003, Datacenter Edition and Microsoft SQL Server\* 2000 Enterprise Edition 64-bit, with 256 GB RAM; available 10-23-2003

† Results and information are reported by end-user or vendor and not verified by Intel. Results may not be representative and may vary. Buyers should consult other sources of information to evaluate the performance of systems or components they are considering purchasing.

