

Intel® Xeon® Processor 5500 Series

An Intelligent Approach to IT Challenges

Intel® Xeon® Processor 5500 Series: Delivering Unmatched Capability at a Lower Cost

- **Intelligent performance** automatically optimizes performance to match dynamic business and application requirements.
- **Automated energy efficiency** scales energy usage to the workload to achieve optimal performance/watt and reduce operating costs.
- **Flexible virtualization** offers best-in-class performance and manageability in virtualized environments to improve IT infrastructure efficiency and utilization, and reduce costs.

The Intel® Xeon® processor 5500^A series delivers up to 9x higher performance per server over single-core servers, enabling 9:1 server consolidation, up to 90% lower operating costs and an estimated 8-month payback on investment.¹

A Giant Leap for IT and Business Capabilities

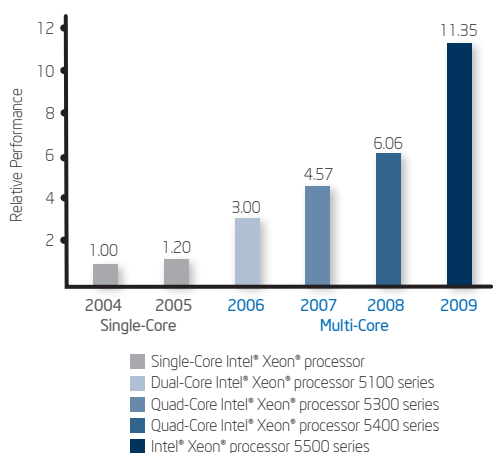
Intel-based servers are the proven foundation of a dependable IT infrastructure. Now the Intel Xeon processor 5500 series, built with a new generation of Intel® Microarchitecture, codenamed Nehalem, provides a foundation for IT management to refresh existing or design new data centers to achieve greater performance while using less energy and space, and dramatically reducing operating costs.

Refreshing ROI

Research shows that upgrading to multi-core servers with higher performing, more efficient processors can accelerate data center ROI, saving on power and cooling, space, labor, and software licensing costs. By refreshing IT infrastructure with more energy-efficient systems, you gain capacity to grow and to increase IT performance. The cost savings can pay for new server investments in as little as eight months.¹

This groundbreaking level of performance and extreme energy efficiency lets you deliver more business results from every clock cycle, every IT man-hour, every watt, and every inch of data center space. The lower TCO and improved performance of the Intel Xeon processor 5500 series offers the opportunity to transform the competitiveness of your business and the economics of your data center.

Boost IT Responsiveness with Compelling Performance Gains



Source: Intel IT, March 2009. TCO calculations based on Intel® Xeon® processor X5570 (2.93 GHz).

Figure 1. Performance gains shown represent a blend (GEO mean) of five common workload types across a range of typical uses.²

Estimate your savings today at
www.intel.com/go/xeonestimator.

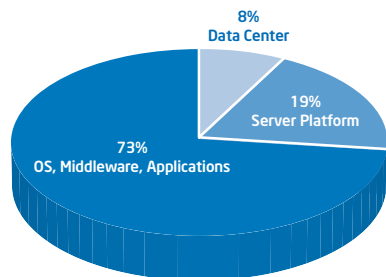


Selecting Server Processors to Reduce Total Costs

The Advantage of High-End Processors

Selecting higher-end processors delivers the maximum value to both IT and business. Because four-year server TCO is dominated by software costs, and since the CPU accounts for only a small percentage of overall cost (Figure 2), the cost difference between platforms with low-end and high-end CPUs has little impact on overall server TCO. Because high-end processors substantially increase performance, they deliver better value. High-end processors deliver up to 89 percent faster performance and reduce server TCO by up to 43 percent compared to low-end processors (Figure 3).³

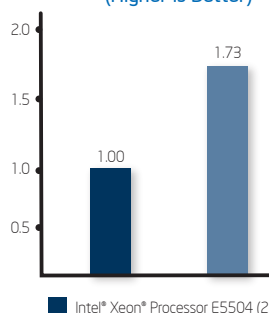
Hardware Accounts for a Small Percentage of 4-year TCO



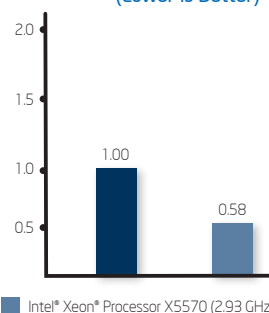
Source: Intel IT, Intel internal measurements, February 2009.

Figure 2

Relative Performance/TCO (Higher is Better)



Relative TCO/Performance (Lower is Better)



Source: Intel IT, March 2009. TCO calculations based on Intel Xeon processor X5570 (2.93 GHz).

Figure 3

Processor Number ^A	CPU Frequency	Intel Turbo Boost Technology ^B	Intel HT Technology ^C	L3 Cache	Number of Cores	Power	Intel QPI Link Speed ^D	DDR3 Memory
Intel Xeon Processor X5570	2.93 GHz	•	•	8 MB	4	95 W	6.4 GT/s	1333, 1066, 800
Intel Xeon Processor X5560	2.80 GHz	•	•	8 MB	4	95 W	6.4 GT/s	1333, 1066, 800
Intel Xeon Processor X5550	2.66 GHz	•	•	8 MB	4	95 W	6.4 GT/s	1333, 1066, 800
Intel Xeon Processor E5540	2.53 GHz	•	•	8 MB	4	80 W	5.86 GT/s	1066, 800
Intel Xeon Processor E5530	2.40 GHz	•	•	8 MB	4	80 W	5.86 GT/s	1066, 800
Intel Xeon Processor E5520	2.26 GHz	•	•	8 MB	4	80 W	5.86 GT/s	1066, 800
Intel Xeon Processor E5506	2.13 GHz			4 MB	4	80 W	4.8 GT/s	800
Intel Xeon Processor E5504	2.00 GHz			4 MB	4	80 W	4.8 GT/s	800
Intel Xeon Processor E5502	1.86 GHz			4 MB	2	80 W	4.8 GT/s	800

^A GT/s = giga-transfers/second

Table 1. The Intel Xeon processor 5500 series is available in a range of features to match different computing demands.

Engage and discuss technology with Intel server experts at www.intel.com/server.

For more information on the Intel Xeon processor 5500 series, visit www.intel.com/xeon.

For more information about Intel Microarchitecture Nehalem, visit www.intel.com/technology/architecture-silicon/next-gen.

^A Intel processor numbers are not a measure of performance. Processor numbers differentiate features within each processor family, not across different processor families. See www.intel.com/products/processor_number for details.

^B Intel Turbo Boost Technology requires a Platform with a processor with Intel Turbo Boost Technology capability. Intel Turbo Boost Technology performance varies depending on hardware, software and overall system configuration. Check with your platform manufacturer on whether your system delivers Intel Turbo Boost Technology. For more information, see <http://www.intel.com/technology/turboboost>.

^C Hyper-Threading Technology requires a computer system with an Intel processor supporting Hyper-Threading Technology and an HT Technology enabled chipset, BIOS and operating system. Performance will vary depending on the specific hardware and software you use. See <http://www.intel.com/info/hyperthreading/> for more information including details on which processors support HT Technology.

¹ Source: Intel, March 2009. Compares replacing nine four-year-old single-core Intel Xeon processor 3.8GHz with 2M cache-based servers with one new Intel Xeon processor X5570-based server. Results have been estimated based on internal Intel analysis and are provided for information purposes only.

² Source: Intel, March 2009. Performance measured on Intel Xeon processor based machines. Performance based on the Geomean of five key industry standard benchmarks: SPECint*_rate2006, SPECfp*_rate2006, SPECjbb*2005, SAP*SD 2-Tier, and TPC-C uses best published or measured results as of March 30, 2009. For more information, visit www.intel.com/performance/server/index.htm.

³ Read the full Intel IT study, available at www.intel.com/IT.

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