New servers deliver more performance, more savings, and faster estimated ROI.

Introducing the next generation of intelligent server processors—the Intel® Xeon® processor 5600 series.

Give your business the benefit of industry leading energy efficiency and performance that adapts to your workload with the Intel® Xeon® processor 5600 series. Now you can boost server performance by up to 60% over Intel® Xeon® 5500 platforms.¹ Plus, you can achieve similar performance as an Intel® Xeon® processor X5570, but with up to 30% lower power, using servers based on next generation 32nm processing technology.² And, you have the advantage of being able to combine servers from multiple generations in the same virtualization pool to extend failover, load balancing, and disaster recovery.

NEW FEATURES OF THE INTEL® XEON® PROCESSOR 5600 SERIES

Intelligent Performance
Built on the new Intel® 32nm process technology and the Nehalem microarchitecture, these new processors deliver more performance per watt and automatically control power consumption.

More cores and more cache
With up to 50 percent more cores and 50 percent more cache than the Intel® Xeon® 5500 series processors, these processors offer plenty of room for growth.

Enhanced security capabilities
Protect your business with faster data encryption enabled by Advanced Encryption Standard New Instructions, and benefit from additional protection against software attacks for highly virtualized and cloud deployments with Intel® Trusted Execution Technology.
### Typical 2-Socket Intel® Xeon® Processor Based Servers

<table>
<thead>
<tr>
<th>IT ANALYSIS</th>
<th>PURCHASED IN 2005</th>
<th>PURCHASED IN 2010</th>
<th>BENEFIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Processors</td>
<td>Intel® Xeon® processor (1 core, 3.8 GHz, 2-MB L3 cache)</td>
<td>Intel® Xeon® processor X5660 (6 cores, 3.33 GHz, 12-MB L3 cache)</td>
<td>Five additional cores per processor provide especially massive improvements in performance for multi-threaded applications</td>
</tr>
<tr>
<td>Performance per Server</td>
<td>Baseline</td>
<td>Up to 15X</td>
<td>Performance increase enables greater capacity or consolidation</td>
</tr>
<tr>
<td>Total Number of Servers</td>
<td>315 in 15 rack</td>
<td>21 in 1 rack</td>
<td>95% reduction in server numbers and smaller data center footprint</td>
</tr>
<tr>
<td>Watts per Server</td>
<td>382W active/228W idle</td>
<td>383W active/117W idle</td>
<td>Up to 48% less idle power</td>
</tr>
</tbody>
</table>

### FINANCIAL ANALYSIS

| Total Annual Energy Costs (estimated) | $154,581 | $27588 | Almost $147,000 per year savings |
| Operating System Licensing Costs (estimated) | $283,500 | $18,900 | ~ $264,600 in annual savings |
| Estimated ROI                      | ~5 months | ~5 months | |

### Refresh for real business benefits.

Whether you want to refresh to get more performance from the same number of servers or are looking to increase efficiencies by consolidating, the new Intel Xeon Processor 5600 series delivers measurable advantages in both scenarios.

From a performance standpoint, replacing a server purchased in 2005 with a new Intel Xeon processor 5600 series based server enables up to 15 times the performance.1 Alternatively, you could replace 15 of your older servers with one new Intel Xeon processor 5600 series based server and achieve estimated ROI in five months.4

For more information about the Intel Xeon Processor 5600 series, contact your Intel sales representative or visit www.intel.com/go/servers

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1. Up to 60% performance increase compared to Intel® Xeon®-5500 series claimed supported by a CPU insensitive benchmark (Blackshards®). Intel internal measurement (February 25, 2010). Baseline configuration and score on benchmark: Intel pre-production system with two Intel® Xeon® processors X5570 (2.93 GHz, 8 MB last level cache, 6.4 GT/sec QPI), 24GB memory (6x4GB DDR3-1333), 1x10GB 10K RPM SATA RAID for scratch. Red Hat EL 5, Update 4 64-bit OS. Source: Intel internal testing as of February 2010. SunGard v3.0 source code compiled with Intel® v11.0 compiler. Elapsed time to run benchmark: 17.84 seconds. New configuration and score on benchmark: Intel pre-production system with two Intel® Xeon® processors X5660 (3.33 GHz, 12 MB last level cache, 6.4 GT/sec QPI), 24GB memory (6x4GB DDR3-1333), 1x10GB 10K RPM SATA RAID for scratch. Red Hat EL 5, Update 4 64-bit OS. Source: Intel internal testing as of February 2010. SunGard v3.0 source code compiled with Intel® v11.0 compiler. Elapsed time to run benchmark: 11.51 seconds.

2. Baseline configuration and score on benchmark: Fujitsu PRIMERGY RX300 S5 system with two Intel® Xeon® processors X5570 (2.93 GHz, 8MB L3, 6.4 GT/s, Quad-core, 95W TDP), BIOS rev. R1.09, Intel® Turbo Boost enabled, Intel® Xeon® processor X5680 (3.33 GHz, 12 core, 3.90 GHz, 12-MB L3 cache), 6x4GB DDR3-1333, 1x147GB SAS hard drive, 1x1800W PSU, SLES 11 (X86_64) Kernel 2.6.27-5-default. Source: Fujitsu Performance Lab testing as of March 2010. SPECint_rate_base2006 benchmark was measured during the steady state window of the benchmark run and at idle. Performance gain compared to baseline was 15X. Baseline platform: Intel® server platform with two 64-bit Intel Xeon processors 3.80GHz with 2M L2 cache, 800 FSB, 8x1GB DDR2-400 memory. 1 hard drive, 1 power supply, Microsoft Windows® Server 2003 Ent. SP1, Oracle JRockit* build P28.0.0-29 run with 2 JVM instances. New platform: Intel server platform with two Intel® Xeon® X5670, 2.93 GHz, 12MB L3 cache, 6.40QPI, 12 GB memory (6x2GB DDR3-1333), 1 hard drive, 1 power supply, Microsoft Windows Server 2008 64 bit SP2, Oracle JRockit build P28.0-0.29 run with 2 JVM instances.

3. Estimated based on comparison between 25 Single Core Intel® Xeon® 3.80 with 2M L2 cache and 25 Intel® Xeon® X5650 based servers. Calculation includes analysis based on performance, power, cooling, electricity rates, operating system annual license costs and estimated server costs. This assumes 86W racks, $0.10 per kWh, cooling costs are 2x the server power consumption costs, operating system license cost of $600/year per server, server cost of $7200 based on estimated list prices and estimated server utilization rates. All dollar figures are approximate. Performance and power comparisons are based on measured server side java benchmark results (Intel Corporation February 2010). Platform power was measured during the steady state window of the benchmark run and at idle. Performance gain compared to baseline was 15X. Baseline platform: Intel® server platform with two 64-bit Intel Xeon processors 3.80GHz with 2M L2 cache, 800 FSB, 8x1GB DDR2-400 memory. 1 hard drive, 1 power supply, Microsoft Windows® Server 2003 Ent. SP1, Oracle JRockit* build P27.4.0-windows-x86_64 run with 2 JVM instances. New platform: Intel server platform with Intel® Xeon® processor X5660 (6 cores, 3.33 GHz, 6.40 GT/s Intel® QPI), 24GB memory (6x4GB DDR3-1333), 1 SATA 10krpm 150GB hard drive, 1 800w power supply, Microsoft Windows Server 2008 64 bit SP2, Oracle JRockit build P28.0.0-29 run with 4 JVM instances.

4. Performance tests and ratings are measured using specific computer systems and/or components and reflect the approximate performance of Intel® products as measured by those tests. Any difference in system hardware or software design or configuration may affect actual performance. Buyers should consult other sources of information to evaluate the performance of systems or components they are considering purchasing. For more information on performance tests and on the performance of Intel® products, visit Intel Performance Benchmark Limitations. Intel does not control or audit the design or implementation of third party benchmark data or Web sites referenced in this document. Intel encourages all of its customers to visit the referenced Web sites or others where similar performance benchmark data are reported and confirm whether the referenced benchmark data are accurate and reflect performance of systems available for purchase.

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**For more information about the performance of Intel® Xeon® processors or the Intel® server platform:**


2. Performance tests and ratings are measured using specific computer systems and/or components and reflect the approximate performance of Intel® products as measured by those tests. Any difference in system hardware or software design or configuration may affect actual performance. Buyers should consult other sources of information to evaluate the performance of systems or components they are considering purchasing. For more information, visit www.intel.com/performance/centre.

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