# SPEC® CINT2006 Result

## NEC Corporation

### Express5800/B140a-T (Intel Xeon E7310)

<table>
<thead>
<tr>
<th>SPECint2006</th>
<th>SPECint_base2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>14.6</td>
<td>12.9</td>
</tr>
</tbody>
</table>

### CPU2006 license: 9006

- Test sponsor: NEC Corporation
- Tested by: NEC Corporation
- Test date: Feb-2009
- Hardware Availability: Feb-2009
- Software Availability: Nov-2008

### Hardware

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU Name:</td>
<td>Intel Xeon E7310</td>
</tr>
<tr>
<td>CPU Characteristics:</td>
<td>1066 MHz system bus</td>
</tr>
<tr>
<td>CPU MHz:</td>
<td>1600</td>
</tr>
<tr>
<td>FPU:</td>
<td>Integrated</td>
</tr>
<tr>
<td>CPU(s) enabled:</td>
<td>16 cores, 4 chips, 4 cores/chip</td>
</tr>
<tr>
<td>CPU(s) orderable:</td>
<td>1,2,3,4 chips</td>
</tr>
<tr>
<td>Primary Cache:</td>
<td>32 KB I + 32 KB D on chip per core</td>
</tr>
<tr>
<td>Secondary Cache:</td>
<td>4 MB I+D on chip per chip, 2 MB shared / 2 cores</td>
</tr>
<tr>
<td>L3 Cache:</td>
<td>None</td>
</tr>
<tr>
<td>Other Cache:</td>
<td>None</td>
</tr>
<tr>
<td>Memory:</td>
<td>32 GB (16x2 GB PC2-5300F, 2 rank, CL5-5-5, ECC)</td>
</tr>
<tr>
<td>Disk Subsystem:</td>
<td>1x146.5 GB SAS, 10000 RPM</td>
</tr>
<tr>
<td>Other Hardware:</td>
<td>None</td>
</tr>
</tbody>
</table>

### Software

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating System:</td>
<td>SUSE Linux Enterprise Server 10 (x86_64) SP2, Kernel 2.6.16.60-0.21-smp</td>
</tr>
<tr>
<td>Compiler:</td>
<td>Intel C++ Compiler 11.0 for Linux</td>
</tr>
<tr>
<td>Auto Parallel:</td>
<td>Yes</td>
</tr>
<tr>
<td>File System:</td>
<td>ReiserFS</td>
</tr>
<tr>
<td>System State:</td>
<td>Run level 3 (multi-user)</td>
</tr>
<tr>
<td>Base Pointers:</td>
<td>32-bit</td>
</tr>
<tr>
<td>Peak Pointers:</td>
<td>32/64-bit</td>
</tr>
<tr>
<td>Other Software:</td>
<td>MicroQuill SmartHeap Library 8.1</td>
</tr>
<tr>
<td>Binutils:</td>
<td>2.18.50.0.7.20080502</td>
</tr>
</tbody>
</table>

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## SPECint2006 Results

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>400.perlbench</td>
<td>13.4</td>
</tr>
<tr>
<td>401.bzip2</td>
<td>10.6</td>
</tr>
<tr>
<td>403.gcc</td>
<td>8.30</td>
</tr>
<tr>
<td>429.mcf</td>
<td>16.4</td>
</tr>
<tr>
<td>445.gobmk</td>
<td>11.8</td>
</tr>
<tr>
<td>456.hmmer</td>
<td>8.94</td>
</tr>
<tr>
<td>458.sjeng</td>
<td>11.6</td>
</tr>
<tr>
<td>462.libquantum</td>
<td></td>
</tr>
<tr>
<td>464.h264ref</td>
<td>18.2</td>
</tr>
<tr>
<td>471.omnetpp</td>
<td>9.80</td>
</tr>
<tr>
<td>473.astar</td>
<td>8.76</td>
</tr>
<tr>
<td>483.xalancbmk</td>
<td></td>
</tr>
</tbody>
</table>

**SPECint2006 = 14.6**

**SPECint_base2006 = 12.9**
SPEC CINT2006 Result

NEC Corporation
Express5800/B140a-T
(Intel Xeon E7310)

SPEClnt2006 = 14.6
SPEClnt_base2006 = 12.9

CPU2006 license: 9006
Test sponsor: NEC Corporation
Tested by: NEC Corporation
Test date: Feb-2009
Hardware Availability: Feb-2009
Software Availability: Nov-2008

Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>400.perlbench</td>
<td>926</td>
<td>10.5</td>
<td>922</td>
<td>10.6</td>
<td>913</td>
<td>10.7</td>
<td>729</td>
<td>13.4</td>
<td>726</td>
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<tr>
<td>401.bzip2</td>
<td>1239</td>
<td>7.79</td>
<td>1245</td>
<td>7.75</td>
<td>1250</td>
<td>7.72</td>
<td>1164</td>
<td>8.29</td>
<td>1162</td>
<td>8.30</td>
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<tr>
<td>403.gcc</td>
<td>975</td>
<td>8.25</td>
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<td>8.22</td>
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<td>758</td>
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<td>429.mcf</td>
<td>560</td>
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<td>549</td>
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<tr>
<td>445.gobmk</td>
<td>999</td>
<td>10.5</td>
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<tr>
<td>462.libquantum</td>
<td>172</td>
<td>121</td>
<td>170</td>
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<td>119</td>
<td>172</td>
<td>121</td>
<td>170</td>
<td>122</td>
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<tr>
<td>464.h264ref</td>
<td>1307</td>
<td>16.9</td>
<td>1321</td>
<td>16.7</td>
<td>1324</td>
<td>16.7</td>
<td>1217</td>
<td>18.2</td>
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<td>18.2</td>
</tr>
<tr>
<td>471.omnetpp</td>
<td>714</td>
<td>8.76</td>
<td>714</td>
<td>8.76</td>
<td>717</td>
<td>8.72</td>
<td>638</td>
<td>9.80</td>
<td>638</td>
<td>9.80</td>
</tr>
<tr>
<td>473.astar</td>
<td>939</td>
<td>7.48</td>
<td>941</td>
<td>7.46</td>
<td>940</td>
<td>7.47</td>
<td>816</td>
<td>8.60</td>
<td>823</td>
<td>8.53</td>
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<tr>
<td>483.xalancbmk</td>
<td>508</td>
<td>13.6</td>
<td>509</td>
<td>13.6</td>
<td>510</td>
<td>13.5</td>
<td>508</td>
<td>13.6</td>
<td>509</td>
<td>13.6</td>
</tr>
</tbody>
</table>

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

Operating System Notes

'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run
OMP_NUM_THREADS set to number of cores
KMP_AFFINITY set to "physical,0"

Platform Notes

Bios settings:
Hardware Prefetcher: Enabled
Adjacent Cache Line Prefetch: Enabled
FSB High Bandwidth Optimization: Disabled

Base Compiler Invocation

C benchmarks:
  icc

C++ benchmarks:
  icpc

Base Portability Flags

400.perlbench: -DSPEC_CPU_LINUX_IA32

Continued on next page
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Base Portability Flags (Continued)

462.libquantum: -DSPEC_CPU_LINUX
483.xalancbmk: -DSPEC_CPU_LINUX

Base Optimization Flags

C benchmarks:
-xSSSE3 -ipo -O3 -no-prec-div -static -parallel
-par-runtime-control -opt-prefetch

C++ benchmarks:
-xSSSE3 -ipo -O3 -no-prec-div -opt-prefetch -Wl,-z,muldefs
-L/opt/SmartHeap_8.1/lib -lsmartheap

Base Other Flags

C benchmarks:
403.gcc: -Dalloca=_alloca

Peak Compiler Invocation

C benchmarks (except as noted below):
icc
401.bzip2: /opt/intel/Compiler/11.0/074/bin/intel64/icc
-L/opt/intel/Compiler/11.0/074/ipp/em64t/lib
-I/opt/intel/Compiler/11.0/074/ipp/em64t/include
456.hmmer: /opt/intel/Compiler/11.0/074/bin/intel64/icc
-L/opt/intel/Compiler/11.0/074/ipp/em64t/lib
-I/opt/intel/Compiler/11.0/074/ipp/em64t/include

C++ benchmarks:
icpc

Peak Portability Flags

400.perlbench: -DSPEC_CPU_LINUX_IA32
401.bzip2: -DSPEC_CPU_LP64
456.hmmer: -DSPEC_CPU_LP64
462.libquantum: -DSPEC_CPU_LINUX

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Peak Portability Flags (Continued)

483.xalancbmk: -DSPEC_CPU_LINUX

Peak Optimization Flags

C benchmarks:

400.perlbench: -prof-gen(pass 1) -prof-use(pass 2) -xSSSE3 -ipo -O3
-no-prec-div -static -ansi-alias -opt-prefetch
401.bzip2: -prof-gen(pass 1) -prof-use(pass 2) -xSSSE3 -ipo -O3
-no-prec-div -static -auto-ilp32 -opt-prefetch
-ansi-alias
403.gcc: -xSSSE3 -ipo -O3 -no-prec-div -static -inline-calloc
-opt-malloc-options=3
429.mcf: -xSSSE3 -ipo -O3 -no-prec-div -static -opt-prefetch
445.gobmk: -prof-gen(pass 1) -prof-use(pass 2) -xSSSE3 -O2 -ipo
-no-prec-div -ansi-alias
456.hmmer: -xSSSE3 -ipo -O3 -no-prec-div -static -unroll2
-ansi-alias -auto-ilp32
458.sjeng: -prof-gen(pass 1) -prof-use(pass 2) -xSSSE3 -ipo -O3
-no-prec-div -static -unroll4
462.libquantum: basepeak = yes
464.h264ref: -prof-gen(pass 1) -prof-use(pass 2) -xSSSE3 -ipo -O3
-no-prec-div -static -unroll2 -ansi-alias

C++ benchmarks:

471.omnetpp: -prof-gen(pass 1) -prof-use(pass 2) -xSSSE3 -ipo -O3
-no-prec-div -ansi-alias -opt-ra-region-strategy=block
-Wl,-z,muldefs -L/opt/SmartHeap_8.1/lib -lsmartheap
473.astar: -prof-gen(pass 1) -prof-use(pass 2) -xSSSE3 -ipo -O3
-no-prec-div -ansi-alias -opt-ra-region-strategy=routine
-Wl,-z,muldefs -L/opt/SmartHeap_8.1/lib -lsmartheap
483.xalancbmk: basepeak = yes

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Peak Other Flags

C benchmarks:

403.gcc -Dalloca=_alloca

The flags files that were used to format this result can be browsed at

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic11.0-int-linux64-revE.xml
http://www.spec.org/cpu2006/flags/NEC-Intel-Linux-Settings-flags-revB.xml

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For other inquiries, please contact webmaster@spec.org.

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