## SPEC® CINT2006 Result

### NEC Corporation

**Express5800/140Hf**  
(Intel Xeon processor 7110M)

<table>
<thead>
<tr>
<th>SPECint®2006</th>
<th>9.10</th>
</tr>
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<tbody>
<tr>
<td>SPECint_base2006</td>
<td>8.49</td>
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**CPU2006 license:** 9006  
**Test date:** Nov-2007  
**Test sponsor:** NEC Corporation  
**Hardware Availability:** Oct-2006  
**Tested by:** NEC Corporation  
**Software Availability:** Jun-2007

<table>
<thead>
<tr>
<th>Software Package</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating System</td>
<td>SUSE Linux Enterprise Server 10 (x86_64), Kernel 2.6.16.21-0.8-smp</td>
</tr>
<tr>
<td>Compiler</td>
<td>Intel C++ Compiler for IA32/EM64T application, Version 10.0 - Build 20070426 Package ID: l_cc_p_10.0.023</td>
</tr>
<tr>
<td>Auto Parallel</td>
<td>No</td>
</tr>
<tr>
<td>File System</td>
<td>ext2</td>
</tr>
<tr>
<td>System State</td>
<td>Multiuser, Runlevel 3</td>
</tr>
<tr>
<td>Base Pointers</td>
<td>32-bit</td>
</tr>
<tr>
<td>Peak Pointers</td>
<td>32/64-bit</td>
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<td>Other Software</td>
<td>MicroQuill SmartHeap library 8.1</td>
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### Hardware

<table>
<thead>
<tr>
<th>Feature</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU Name</td>
<td>Intel Xeon 7110M</td>
</tr>
<tr>
<td>CPU Characteristics</td>
<td>2.60 GHz, 800 MHz bus</td>
</tr>
<tr>
<td>CPU MHz</td>
<td>2600</td>
</tr>
<tr>
<td>FPU</td>
<td>Integrated</td>
</tr>
<tr>
<td>CPU(s) enabled</td>
<td>8 cores, 4 chips, 2 cores/chip, 2 threads/core</td>
</tr>
<tr>
<td>CPU(s) orderable</td>
<td>1,2,4 chips</td>
</tr>
<tr>
<td>Primary Cache</td>
<td>12 K micro-ops I + 16 KB D on chip per core</td>
</tr>
<tr>
<td>Secondary Cache</td>
<td>1 MB I+D on chip per core</td>
</tr>
<tr>
<td>L3 Cache</td>
<td>4 MB I+D on chip per chip</td>
</tr>
<tr>
<td>Other Cache</td>
<td>None</td>
</tr>
<tr>
<td>Memory</td>
<td>32 GB (16x2 GB PC2-3200R, 2 rank, CL3-3-3, ECC)</td>
</tr>
<tr>
<td>Disk Subsystem</td>
<td>1x146.5 GB SAS, 15000RPM</td>
</tr>
<tr>
<td>Other Hardware</td>
<td>None</td>
</tr>
</tbody>
</table>

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Standard Performance Evaluation Corporation  
info@spec.org  
http://www.spec.org/
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SPECint_base2006 = 8.49

CPU2006 license: 9006
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Test date: Nov-2007
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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>1126</td>
<td>8.68</td>
<td>1130</td>
<td>8.65</td>
<td>1125</td>
<td>8.69</td>
<td>979</td>
<td>9.98</td>
<td>975</td>
<td>10.0</td>
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<tr>
<td>401.bzip2</td>
<td>1409</td>
<td>6.85</td>
<td>1409</td>
<td>6.85</td>
<td>1415</td>
<td>6.82</td>
<td>1325</td>
<td>7.28</td>
<td>1308</td>
<td>7.38</td>
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<tr>
<td>403.gcc</td>
<td>906</td>
<td>8.88</td>
<td>909</td>
<td>8.86</td>
<td>908</td>
<td>8.86</td>
<td>906</td>
<td>8.88</td>
<td>909</td>
<td>8.86</td>
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<tr>
<td>429.mcf</td>
<td>1470</td>
<td>7.13</td>
<td>1469</td>
<td>7.14</td>
<td>1469</td>
<td>7.14</td>
<td>1375</td>
<td>7.63</td>
<td>1373</td>
<td>7.64</td>
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<tr>
<td>456.hmmer</td>
<td>1477</td>
<td>6.32</td>
<td>1480</td>
<td>6.30</td>
<td>1478</td>
<td>6.31</td>
<td>1240</td>
<td>7.52</td>
<td>1243</td>
<td>7.51</td>
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<tr>
<td>462.libquantum</td>
<td>1220</td>
<td>17.0</td>
<td>1221</td>
<td>17.0</td>
<td>1227</td>
<td>16.9</td>
<td>1189</td>
<td>17.4</td>
<td>1195</td>
<td>17.3</td>
</tr>
<tr>
<td>464.h264ref</td>
<td>1509</td>
<td>14.7</td>
<td>1509</td>
<td>14.7</td>
<td>1511</td>
<td>14.6</td>
<td>1415</td>
<td>15.6</td>
<td>1415</td>
<td>15.6</td>
</tr>
<tr>
<td>471.omnetpp</td>
<td>1015</td>
<td>6.16</td>
<td>1016</td>
<td>6.15</td>
<td>1017</td>
<td>6.15</td>
<td>938</td>
<td>6.66</td>
<td>940</td>
<td>6.65</td>
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<tr>
<td>473.astar</td>
<td>1113</td>
<td>6.30</td>
<td>1115</td>
<td>6.30</td>
<td>1110</td>
<td>6.32</td>
<td>1054</td>
<td>6.66</td>
<td>1054</td>
<td>6.66</td>
</tr>
<tr>
<td>483.xalancbmk</td>
<td>632</td>
<td>10.9</td>
<td>633</td>
<td>10.9</td>
<td>632</td>
<td>10.9</td>
<td>632</td>
<td>10.9</td>
<td></td>
<td></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

General Notes

All benchmarks compiled in 32-bit mode except 401.bzip2 and 456.hmmer, for peak, are compiled in 64-bit mode

The Express5800/140Hf and the Express5800/140Re-4 models are electronically equivalent.
The results have been measured on an Express5800/140Re-4 model.

Base Compiler Invocation

C benchmarks:
    icc -static(*)

C++ benchmarks:
    icpc

(*) Indicates a compiler flag that was found in a non-compiler variable.
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Base Portability Flags

- 400.perlbench: -DSPEC_CPU_LINUX_IA32
- 462.libquantum: -DSPEC_CPU_LINUX
- 483.xalancbmk: -DSPEC_CPU_LINUX

Base Optimization Flags

C benchmarks:
- -xP -ipo -O3 -no-prec-div

C++ benchmarks:
- -xP -ipo -O3 -no-prec-div -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 -static(*)

- 401.bzip2: /opt/intel/cce/10.0.023/bin/icc
  -L/opt/intel/cce/10.0.023/lib
  -I/opt/intel/cce/10.0.023/include

- 445.gobmk: icc

- 456.hmmer: /opt/intel/cce/10.0.023/bin/icc
  -L/opt/intel/cce/10.0.023/lib
  -I/opt/intel/cce/10.0.023/include -static(*)

C++ benchmarks:
- icpc

(*) Indicates a compiler flag that was found in a non-compiler variable.
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Peak Portability Flags

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

Peak Optimization Flags

C benchmarks:

400.perlbench: -prof-gen(pass 1) -prof-use(pass 2) -xP -ipo -O3 -no-prec-div -ansi-alias -prefetch
401.bzip2: -prof-gen(pass 1) -prof-use(pass 2) -xP -ipo -O3 -no-prec-div
403.gcc: basepeak = yes
429.mc2: -xP -ipo -O3 -no-prec-div -prefetch
445.gobmk: -prof-gen(pass 1) -prof-use(pass 2) -xP -O2 -ipo -no-prec-div -ansi-alias
456.hmmer: -prof-gen(pass 1) -prof-use(pass 2) -xP -ipo -O3 -no-prec-div -unroll2 -ansi-alias
458.sjeng: -prof-gen(pass 1) -prof-use(pass 2) -xP -ipo -O3 -no-prec-div -unroll4
462.libquantum: Same as 458.sjeng
464.h264ref: Same as 456.hmmer

C++ benchmarks:

471.omnetpp: -prof-gen(pass 1) -prof-use(pass 2) -xP -O3 -ipo -no-prec-div -ansi-alias -Wl,-z,muldefs -L/opt/SmartHeap_8.1/lib -lsmartheap
473.astar: Same as 471.omnetpp
483.xalancbmk: basepeak = yes
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### Peak Other Flags

C benchmarks:

403.gcc: -Dalloca=_alloca

The flags file that was used to format this result can be browsed at http://www.spec.org/cpu2006/flags/NEC-ic10-INT-ia32-intel64-linux-flags.html

You can also download the XML flags source by saving the following link: http://www.spec.org/cpu2006/flags/NEC-ic10-INT-ia32-intel64-linux-flags.xml

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

Tested with SPEC CPU2006 v1.0.  