# SPEC® CINT2006 Result

## NEC Corporation

Express5800/120Rg-1  
(Intel Xeon processor 5110)

| SPECint_rate2006 = 36.7 | SPECint_rate_base2006 = 35.0 |

### Hardware

<table>
<thead>
<tr>
<th>Description</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU Name</td>
<td>Intel Xeon 5110</td>
</tr>
<tr>
<td>CPU Characteristics</td>
<td>1.60 GHz, 4MB L2, 1066MHz 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>4 cores, 2 chips, 2 cores/chip</td>
</tr>
<tr>
<td>CPU(s) orderable</td>
<td>1.2 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</td>
</tr>
<tr>
<td>L3 Cache</td>
<td>None</td>
</tr>
<tr>
<td>Memory</td>
<td>8 GB (4x2 GB DDR2 5300F, 2 rank. CL5-5-5, ECC)</td>
</tr>
<tr>
<td>Disk Subsystem</td>
<td>1x146.5 GB SAS, 15000RPM</td>
</tr>
<tr>
<td>Other Cache</td>
<td>None</td>
</tr>
<tr>
<td>Other Hardware</td>
<td>None</td>
</tr>
</tbody>
</table>

### Software

<table>
<thead>
<tr>
<th>Description</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating System</td>
<td>64-Bit SUSE LINUX Enterprise Server 10, Kernel 2.6.16.21-0.8-smp on an x86_64</td>
</tr>
<tr>
<td>Compiler</td>
<td>Intel C++ Compiler for IA32/EM64T application, Version 9.1 - Build 20070320, Package-ID: l_cc_c_9.1.049</td>
</tr>
<tr>
<td>Auto Parallel</td>
<td>No</td>
</tr>
<tr>
<td>File System</td>
<td>ReiserFS</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>
</tr>
<tr>
<td>Other Software</td>
<td>MicroQuill SmartHeap Library 8.1</td>
</tr>
</tbody>
</table>

---

Logical Diagram:

```
Specifications:
```

- CPU Name: Intel Xeon 5110
- CPU Characteristics: 1.60 GHz, 4MB L2, 1066MHz bus
- CPU MHz: 1600
- FPU: Integrated
- CPU(s) enabled: 4 cores, 2 chips, 2 cores/chip
- CPU(s) orderable: 1.2 chips
- Primary Cache: 32 KB I + 32 KB D on chip per core
- Secondary Cache: 4 MB I+D on chip per chip
- L3 Cache: None
- Memory: 8 GB (4x2 GB DDR2 5300F, 2 rank. CL5-5-5, ECC)
- Disk Subsystem: 1x146.5 GB SAS, 15000RPM
- Other Cache: None
- Other Hardware: None

Operating System: 64-Bit SUSE LINUX Enterprise Server 10, Kernel 2.6.16.21-0.8-smp on an x86_64


Auto Parallel: No

File System: ReiserFS

System State: Multiuser, Runlevel 3

Base Pointers: 32-bit

Peak Pointers: 32/64-bit

Other Software: MicroQuill SmartHeap Library 8.1
NEC Corporation  
Express5800/120Rg-1  
(Intel Xeon processor 5110)  

**SPEC CINT2006 Result**

**SPECint_rate2006 =** 36.7  
**SPECint_rate_base2006 =** 35.0

CPU2006 license: 9006  
Test sponsor: NEC Corporation  
Tested by: NEC Corporation

---

**Results Table**

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Copies</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Base</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Peak</th>
<th>Seconds</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>400.perlbench</td>
<td>4</td>
<td>896</td>
<td>43.6</td>
<td>896</td>
<td>43.6</td>
<td>894</td>
<td>43.7</td>
<td>4</td>
<td>830</td>
<td>47.1</td>
<td>821</td>
<td>47.6</td>
<td>827</td>
<td>47.3</td>
<td></td>
</tr>
<tr>
<td>401.bzip2</td>
<td>4</td>
<td><strong>1382</strong></td>
<td>27.9</td>
<td>1384</td>
<td>27.9</td>
<td>1381</td>
<td>27.9</td>
<td>4</td>
<td>1302</td>
<td>29.7</td>
<td><strong>1305</strong></td>
<td>29.6</td>
<td>1310</td>
<td>29.5</td>
<td></td>
</tr>
<tr>
<td>403.gcc</td>
<td>4</td>
<td>911</td>
<td>35.4</td>
<td>899</td>
<td>35.8</td>
<td>900</td>
<td><strong>35.8</strong></td>
<td>4</td>
<td>911</td>
<td>35.4</td>
<td>899</td>
<td>35.8</td>
<td><strong>900</strong></td>
<td><strong>35.8</strong></td>
<td></td>
</tr>
<tr>
<td>429.mcf</td>
<td>4</td>
<td><strong>1041</strong></td>
<td>35.0</td>
<td>1042</td>
<td>35.0</td>
<td>1041</td>
<td>35.0</td>
<td>4</td>
<td>1059</td>
<td>34.4</td>
<td><strong>1060</strong></td>
<td>34.4</td>
<td>1061</td>
<td>34.4</td>
<td></td>
</tr>
<tr>
<td>445.gobmk</td>
<td>4</td>
<td>987</td>
<td>42.5</td>
<td>985</td>
<td>42.6</td>
<td><strong>985</strong></td>
<td><strong>42.6</strong></td>
<td>4</td>
<td>900</td>
<td>46.6</td>
<td>902</td>
<td>46.5</td>
<td><strong>900</strong></td>
<td><strong>46.6</strong></td>
<td></td>
</tr>
<tr>
<td>456.hmmer</td>
<td>4</td>
<td>1388</td>
<td>26.9</td>
<td>1389</td>
<td>26.9</td>
<td>1390</td>
<td>26.9</td>
<td>4</td>
<td><strong>1162</strong></td>
<td>32.1</td>
<td>1160</td>
<td>32.2</td>
<td>1164</td>
<td>32.1</td>
<td></td>
</tr>
<tr>
<td>458.sjeng</td>
<td>4</td>
<td>1217</td>
<td>39.8</td>
<td>1225</td>
<td>39.5</td>
<td><strong>1222</strong></td>
<td><strong>39.6</strong></td>
<td>4</td>
<td>1132</td>
<td>42.8</td>
<td><strong>1130</strong></td>
<td><strong>42.8</strong></td>
<td>1126</td>
<td>43.0</td>
<td></td>
</tr>
<tr>
<td>462.libquantum</td>
<td>4</td>
<td>3585</td>
<td>23.1</td>
<td><strong>3586</strong></td>
<td>23.1</td>
<td>3590</td>
<td>23.1</td>
<td>4</td>
<td><strong>3527</strong></td>
<td>23.5</td>
<td>3522</td>
<td>23.5</td>
<td>3528</td>
<td>23.5</td>
<td></td>
</tr>
<tr>
<td>464.h264ref</td>
<td>4</td>
<td>1358</td>
<td>65.2</td>
<td><strong>1356</strong></td>
<td>65.3</td>
<td>1356</td>
<td>65.3</td>
<td>4</td>
<td>1348</td>
<td>65.7</td>
<td>1353</td>
<td>65.4</td>
<td><strong>1349</strong></td>
<td><strong>65.6</strong></td>
<td></td>
</tr>
<tr>
<td>471.omnetpp</td>
<td>4</td>
<td>953</td>
<td>26.2</td>
<td>948</td>
<td>26.4</td>
<td><strong>950</strong></td>
<td><strong>26.3</strong></td>
<td>4</td>
<td>882</td>
<td>28.3</td>
<td>885</td>
<td>28.3</td>
<td><strong>884</strong></td>
<td><strong>28.3</strong></td>
<td></td>
</tr>
<tr>
<td>473.astar</td>
<td>4</td>
<td>1059</td>
<td>26.5</td>
<td><strong>1058</strong></td>
<td>26.5</td>
<td>1056</td>
<td>26.6</td>
<td>4</td>
<td><strong>1047</strong></td>
<td>26.8</td>
<td>1048</td>
<td>26.8</td>
<td>1046</td>
<td>26.8</td>
<td></td>
</tr>
<tr>
<td>483.xalancbmk</td>
<td>4</td>
<td><strong>599</strong></td>
<td>46.1</td>
<td>599</td>
<td>46.1</td>
<td>599</td>
<td>46.1</td>
<td>4</td>
<td><strong>599</strong></td>
<td>46.1</td>
<td>599</td>
<td>46.1</td>
<td>599</td>
<td>46.1</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  
'/usr/bin/taskset' used to bind processes to CPUs

---

**General Notes**

The system bus runs at 1066 MHz  
All binaries were built with 32-bit Intel compiler except:  
401.bzip2, 456.hmmer and 462.libquantum in peak were built with 64-bit Intel compiler by changing the path for include and library files.

The Express5800/120Rg-1 and the Express5800/120Ri-2 models are electronically equivalent.  
The results have been measured on a Express5800/120Ri-2 model.

---

**Base Compiler Invocation**

C benchmarks:  
*icc*

C++ benchmarks:  
*icpc*
SPEC CINT2006 Result

NEC Corporation
Express5800/120Rg-1
(Intel Xeon processor 5110)

SPECint_rate2006 = 36.7
SPECint_rate_base2006 = 35.0

CPU2006 license: 9006
Test date: May-2007
Test sponsor: NEC Corporation
Hardware Availability: May-2007
Tested by: NEC Corporation
Software Availability: Apr-2007

Base Portability Flags

400.perlbench: -DSPEC_CPU_LINUX_X64
462.libquantum: -DSPEC_CPU_LINUX
483.xalancbmk: -DSPEC_CPU_LINUX

Base Optimization Flags

C benchmarks:
- fast

C++ benchmarks:
- xP -O3 -ipo -no-prec-div -L/opt/SmartHeap_8.1/lib -lsmartheap

Peak Compiler Invocation

C benchmarks (except as noted below):
icc

401.bzip2: /opt/intel/cce/9.1.049/bin/icc
-I/opt/intel/cce/9.1.049/include
-L/opt/intel/cce/9.1.049/lib

456.hmmer: /opt/intel/cce/9.1.049/bin/icc
-I/opt/intel/cce/9.1.049/include
-L/opt/intel/cce/9.1.049/lib

462.libquantum: /opt/intel/cce/9.1.049/bin/icc
-I/opt/intel/cce/9.1.049/include
-L/opt/intel/cce/9.1.049/lib

C++ benchmarks:
icpc

Peak Portability Flags

400.perlbench: -DSPEC_CPU_LINUX_X64
401.bzip2: -DSPEC_CPU_LP64
456.hmmer: -DSPEC_CPU_LP64
462.libquantum: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX
483.xalancbmk: -DSPEC_CPU_LINUX
SPEC CINT2006 Result

NEC Corporation
Express5800/120Rg-1
(Intel Xeon processor 5110)

SPECint\_rate2006 = 36.7
SPECint\_rate\_base2006 = 35.0

CPU2006 license: 9006
Test sponsor: NEC Corporation
Test date: May-2007
Tested by: NEC Corporation
Hardware Availability: May-2007
Software Availability: Apr-2007

Peak Optimization Flags

C benchmarks:

400.perlbench: -prof\_gen(pass 1) -prof\_use(pass 2) -fast
401.bzip2: -fast
403.gcc: basepeak = yes
429.mcf: -prof\_gen(pass 1) -prof\_use(pass 2) -fast
-L/opt/SmartHeap\_8.1/lib -lsmartheap
445.gobmk: Same as 429.mcf
456.hmmer: Same as 400.perlbench
458.sjeng: Same as 429.mcf
462.libquantum: Same as 400.perlbench
464.h264ref: Same as 429.mcf

C++ benchmarks:

471.omnetpp: -prof\_gen(pass 1) -prof\_use(pass 2) -xP -O3 -ipo
-no-prec-div -L/opt/SmartHeap\_8.1/lib -lsmartheap
473.astar: -prof\_gen(pass 1) -prof\_use(pass 2) -fast
-L/opt/SmartHeap\_8.1/lib -lsmartheap
483.xalancbmk: basepeak = yes

The flags file that was used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/NEC-ic91-linux-flags.20090714.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/NEC-ic91-linux-flags.20090714.xml

SPEC and SPECint are registered trademarks of the Standard Performance Evaluation Corporation. All other brand and product names appearing in this result are trademarks or registered trademarks of their respective holders.

For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

Tested with SPEC CPU2006 v1.0.
Originally published on 10 July 2007.