**NEC Corporation**

**Express5800/120Ri-2**  
(Intel Xeon processor 5160)

**SPECfp²006 Result**

**SPECfp_rate²006 = 44.2**  
**SPECfp_rate_base²006 = 42.9**

<table>
<thead>
<tr>
<th>Software</th>
<th>Hardware</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU Name: Intel Xeon 5160</td>
<td></td>
</tr>
</tbody>
</table>
CPU Characteristics: 3.00 GHz, 4MB L2, 1333MHz bus |  
Operating System: 64-Bit SUSE LINUX Enterprise Server 10, Kernel 2.6.16.21-0.8-smp on an x86_64 |
| CPU MHz: 3000 |  
Compiler: Intel C++ Compiler for IA32/EM64T application, Version 9.1 - Build 20070320, Package ID: l_cc_c_9.1.049 |  
CPU(s) enabled: 4 cores, 2 chips, 2 cores/chip |  
CPU(s) orderable: 1,2 chips |  
Auto Parallel: No |  
Primary Cache: 32 KB I + 32 KB D on chip per core |  
File System: ReiserFS |  
Secondary Cache: 4 MB I+D on chip per chip |  

**Test date:** May-2007  
**Hardware Availability:** May-2007  
**Software Availability:** Apr-2007

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>CPU2006</th>
<th>Test Sponsor</th>
<th>Hardware Availability</th>
<th>Software Availability</th>
</tr>
</thead>
<tbody>
<tr>
<td>bwaves</td>
<td>32.7</td>
<td>NEC Corporation</td>
<td>May-2007</td>
<td>Apr-2007</td>
</tr>
<tr>
<td>gamess</td>
<td>81.9</td>
<td>NEC Corporation</td>
<td>May-2007</td>
<td>Apr-2007</td>
</tr>
<tr>
<td>zeusmp</td>
<td>46.9</td>
<td>NEC Corporation</td>
<td>May-2007</td>
<td>Apr-2007</td>
</tr>
<tr>
<td>gromacs</td>
<td>71.7</td>
<td>NEC Corporation</td>
<td>May-2007</td>
<td>Apr-2007</td>
</tr>
<tr>
<td>cactusADM</td>
<td>52.1</td>
<td>NEC Corporation</td>
<td>May-2007</td>
<td>Apr-2007</td>
</tr>
<tr>
<td>leslie3d</td>
<td>23.6</td>
<td>NEC Corporation</td>
<td>May-2007</td>
<td>Apr-2007</td>
</tr>
<tr>
<td>namd</td>
<td>62.6</td>
<td>NEC Corporation</td>
<td>May-2007</td>
<td>Apr-2007</td>
</tr>
<tr>
<td>dealII</td>
<td>86.6</td>
<td>NEC Corporation</td>
<td>May-2007</td>
<td>Apr-2007</td>
</tr>
<tr>
<td>soplex</td>
<td>85.4</td>
<td>NEC Corporation</td>
<td>May-2007</td>
<td>Apr-2007</td>
</tr>
<tr>
<td>povray</td>
<td>108</td>
<td>NEC Corporation</td>
<td>May-2007</td>
<td>Apr-2007</td>
</tr>
<tr>
<td>calculix</td>
<td>59.7</td>
<td>NEC Corporation</td>
<td>May-2007</td>
<td>Apr-2007</td>
</tr>
<tr>
<td>GemsFDTD</td>
<td>21.8</td>
<td>NEC Corporation</td>
<td>May-2007</td>
<td>Apr-2007</td>
</tr>
<tr>
<td>tonto</td>
<td>53.0</td>
<td>NEC Corporation</td>
<td>May-2007</td>
<td>Apr-2007</td>
</tr>
<tr>
<td>lbm</td>
<td>51.8</td>
<td>NEC Corporation</td>
<td>May-2007</td>
<td>Apr-2007</td>
</tr>
<tr>
<td>wrf</td>
<td>43.2</td>
<td>NEC Corporation</td>
<td>May-2007</td>
<td>Apr-2007</td>
</tr>
<tr>
<td>sphinx3</td>
<td>41.4</td>
<td>NEC Corporation</td>
<td>May-2007</td>
<td>Apr-2007</td>
</tr>
</tbody>
</table>

Continued on next page
SPEC CFP2006 Result

NEC Corporation
Express5800/120Ri-2
(Intel Xeon processor 5160)

SPECfp_rate2006 = 44.2
SPECfp_rate_base2006 = 42.9

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

Test date: May-2007
Hardware Availability: May-2007
Software Availability: Apr-2007

L3 Cache: None
Other Cache: None
Memory: 8 GB (4x2 GB DDR2 5300F, 2 rank, CL5-5-5, ECC)
Disk Subsystem: 1x146.5 GB SAS, 15000RPM
Other Hardware: None

System State: Multiuser, Runlevel 3
Base Pointers: 64-bit
Peak Pointers: 32/64-bit
Other Software: None

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>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>bwaves</td>
<td>4</td>
<td>1661</td>
<td>32.7</td>
<td>1659</td>
<td>32.8</td>
<td>1662</td>
<td>32.7</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>gamess</td>
<td>4</td>
<td>956</td>
<td>82.0</td>
<td>956</td>
<td>81.9</td>
<td>957</td>
<td>81.8</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>milc</td>
<td>4</td>
<td>1716</td>
<td>21.4</td>
<td>1720</td>
<td>21.4</td>
<td>1717</td>
<td>21.4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>zeusmp</td>
<td>4</td>
<td>775</td>
<td>47.0</td>
<td>773</td>
<td>47.1</td>
<td>783</td>
<td>46.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>gromacs</td>
<td>4</td>
<td>399</td>
<td>71.7</td>
<td>402</td>
<td>71.1</td>
<td>398</td>
<td>71.8</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>gpus</td>
<td>4</td>
<td>914</td>
<td>52.3</td>
<td>919</td>
<td>52.0</td>
<td>918</td>
<td>52.1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>leslie3d</td>
<td>4</td>
<td>1592</td>
<td>23.6</td>
<td>1593</td>
<td>23.6</td>
<td>1596</td>
<td>23.6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>namd</td>
<td>4</td>
<td>513</td>
<td>62.6</td>
<td>512</td>
<td>62.7</td>
<td>517</td>
<td>62.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>dealII</td>
<td>4</td>
<td>538</td>
<td>85.1</td>
<td>536</td>
<td>85.4</td>
<td>535</td>
<td>85.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>soplex</td>
<td>4</td>
<td>1225</td>
<td>27.2</td>
<td>1223</td>
<td>27.3</td>
<td>1224</td>
<td>27.3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>povray</td>
<td>4</td>
<td>260</td>
<td>82.0</td>
<td>259</td>
<td>82.1</td>
<td>260</td>
<td>81.9</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>calculix</td>
<td>4</td>
<td>552</td>
<td>59.7</td>
<td>554</td>
<td>59.6</td>
<td>551</td>
<td>59.9</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GemsFDTD</td>
<td>4</td>
<td>1956</td>
<td>21.7</td>
<td>1944</td>
<td>21.8</td>
<td>1944</td>
<td>21.8</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>tonto</td>
<td>4</td>
<td>757</td>
<td>52.0</td>
<td>759</td>
<td>51.8</td>
<td>761</td>
<td>51.7</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>lbm</td>
<td>4</td>
<td>3176</td>
<td>17.3</td>
<td>3175</td>
<td>17.3</td>
<td>3175</td>
<td>17.3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>wrf</td>
<td>4</td>
<td>1035</td>
<td>43.2</td>
<td>1028</td>
<td>43.5</td>
<td>1038</td>
<td>43.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>sphinx3</td>
<td>4</td>
<td>2013</td>
<td>38.7</td>
<td>1992</td>
<td>39.1</td>
<td>1988</td>
<td>39.2</td>
<td></td>
<td></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 '/usr/bin/taskset' used to bind processes to CPUs

General Notes
The system bus runs at 1333 MHz
All binaries were built with 64-bit Intel compiler except:
433.milc, 434.zeusmp, 450.soplex, 470.lbm and 482.sphinx3 in peak were built with 32-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.
SPEC CFP2006 Result

NEC Corporation

Express5800/120Ri-2
(Intel Xeon processor 5160)

SPECfp_rate2006 = 44.2
SPECfp_rate_base2006 = 42.9

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

Test date: May-2007
Hardware Availability: May-2007
Software Availability: Apr-2007

Base Compiler Invocation

C benchmarks:
  icc

C++ benchmarks:
  icpc

Fortran benchmarks:
  ifort

Benchmarks using both Fortran and C:
  icc ifort

Base Portability Flags

410.bwaves: -DSPEC_CPU_LP64
416.gamess: -DSPEC_CPU_LP64
433.milc: -DSPEC_CPU_LP64
434.zeusmp: -DSPEC_CPU_LP64
435.gromacs: -DSPEC_CPU_LP64 -nofor_main
436.cactusADM: -DSPEC_CPU_LP64 -nofor_main
437.leslie3d: -DSPEC_CPU_LP64
444.namd: -DSPEC_CPU_LP64
447.dealII: -DSPEC_CPU_LP64
450.soplex: -DSPEC_CPU_LP64
453.povray: -DSPEC_CPU_LP64 -nofor_main
454.calculix: -DSPEC_CPU_LP64 -nofor_main
459.GemsFDTD: -DSPEC_CPU_LP64
465.tonto: -DSPEC_CPU_LP64
470.lbm: -DSPEC_CPU_LP64
481.wrf: -DSPEC_CPU_LP64 -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX
482.sphinx3: -DSPEC_CPU_LP64

Base Optimization Flags

C benchmarks:
  -fast

C++ benchmarks:
  -fast

Fortran benchmarks:
  -fast

Benchmarks using both Fortran and C:
  -fast
PEC CFP2006 Result

NEC Corporation
Express5800/120Ri-2
(Intel Xeon processor 5160)

SPECfp_rate2006 = 44.2
SPECfp_rate_base2006 = 42.9

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

Test date: May-2007
Hardware Availability: May-2007
Software Availability: Apr-2007

Peak Compiler Invocation

C benchmarks:

/opt/intel/cc/9.1.049/bin/icc -I/opt/intel/cc/9.1.049/include
-L/opt/intel/cc/9.1.049/lib

C++ benchmarks (except as noted below):

icpc

450.soplex: /opt/intel/cc/9.1.049/bin/icpc
-I/opt/intel/cc/9.1.049/include -L/opt/intel/cc/9.1.049/lib

Fortran benchmarks (except as noted below):

ifort

434.zeusmp: /opt/intel/fc/9.1.045/bin/ifort
-I/opt/intel/fc/9.1.045/include -L/opt/intel/fc/9.1.045/lib

Benchmarks using both Fortran and C:

icc ifort

Peak Portability Flags

410.bwaves: -DSPEC_CPU_LP64
416.gamess: -DSPEC_CPU_LP64
435.gromacs: -DSPEC_CPU_LP64 -nofor_main
436.cactusADM: -DSPEC_CPU_LP64 -nofor_main
437.leslie3d: -DSPEC_CPU_LP64
444.namd: -DSPEC_CPU_LP64
447.dealII: -DSPEC_CPU_LP64
453.povray: -DSPEC_CPU_LP64
454.calculix: -DSPEC_CPU_LP64 -nofor_main
459.GemsFDTD: -DSPEC_CPU_LP64
465.tonto: -DSPEC_CPU_LP64
481.wrf: -DSPEC_CPU_LP64 -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX

Peak Optimization Flags

C benchmarks:

433.milc: -prof_gen(pass 1) -prof_use(pass 2) -fast
470.lbm: Same as 433.milc
482.sphinx3: -fast

C++ benchmarks:

Continued on next page
SPEC CFP2006 Result

NEC Corporation
Express5800/120Ri-2
(Intel Xeon processor 5160)

SPECfp_rate2006 = 44.2
SPECfp_rate_base2006 = 42.9

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

Peak Optimization Flags (Continued)

444.namd: basepeak = yes
447.dealII: -prof_gen(pass 1) -prof_use(pass 2) -fast
450.soplex: Same as 447.dealII
453.povray: Same as 447.dealII

Fortran benchmarks:
410.bwaves: basepeak = yes
416.gamess: basepeak = yes
434.zeusmp: -fast
437.leslie3d: basepeak = yes
459.GemsFDTD: basepeak = yes
465.tonto: -prof_gen(pass 1) -prof_use(pass 2) -fast

Benchmarks using both Fortran and C:
435.gromacs: -prof_gen(pass 1) -prof_use(pass 2) -fast
436.cactusADM: basepeak = yes
454.calculix: Same as 435.gromacs
481.wrf: 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 SPECfp 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.