## NEC Corporation

### Express5800/120Bb-6

**Intel Xeon processor 5160**

<table>
<thead>
<tr>
<th>SPECfp_rate_2006</th>
<th>44.0</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECfp_rate_base2006</td>
<td>42.6</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CPU_2006 license:</th>
<th>9006</th>
</tr>
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<tbody>
<tr>
<td>Test sponsor:</td>
<td>NEC Corporation</td>
</tr>
<tr>
<td>Tested by:</td>
<td>NEC Corporation</td>
</tr>
<tr>
<td>Test date:</td>
<td>Oct-2007</td>
</tr>
<tr>
<td>Hardware Availability:</td>
<td>May-2007</td>
</tr>
<tr>
<td>Software Availability:</td>
<td>Apr-2007</td>
</tr>
</tbody>
</table>

### Hardware

<table>
<thead>
<tr>
<th>Component</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU Name:</td>
<td>Intel Xeon 5160</td>
</tr>
<tr>
<td>CPU Characteristics:</td>
<td>3.00 GHz, 4 MB L2, 1333 MHz bus</td>
</tr>
<tr>
<td>CPU MHz:</td>
<td>3000</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>
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<tr>
<td>Secondary Cache:</td>
<td>4 MB I+D on chip per chip</td>
</tr>
</tbody>
</table>

### Software

<table>
<thead>
<tr>
<th>Component</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 for 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>
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<tr>
<td>Auto Parallel:</td>
<td>No</td>
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<tr>
<td>File System:</td>
<td>ext2</td>
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410.bwaves 4 32.8
416.gamess 4 82.1
433.milc 4 21.6
434.zeusmp 4 21.7
435.gromacs 4 43.9
436.cactusADM 4 49.3
437.leslie3d 4 23.5
444.namd 4 62.8
447.dealII 4 85.6
450.soplex 4 29.2
453.povray 4 27.2
454.calculix 4 61.0
459.GemsFDTD 4 22.1
465.tonto 4 52.0
470.lbm 4 18.2
481.wrf 4 42.8
482.sphinx3 4 41.6

### SPECfp\_rate\_2006 = 42.6

### SPECfp\_rate\_base2006 = 44.0

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NEC Corporation
Express5800/120Bb-6
(Intel Xeon processor 5160)

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

L3 Cache: None
Other Cache: None
Memory: 8 GB (4x2 GB PC2-5300F, 2 rank, CL5-5-5, ECC)
Disk Subsystem: 1x146.5 GB SAS, 10000RPM
Other Hardware: None
System State: Multiuser, Runlevel 3
Base Pointers: 64-bit
Peak Pointers: 32/64-bit
Other Software: None

SPECfp_rate2006 = 44.0
SPECfp_rate_base2006 = 42.6

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>
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<th>Ratio</th>
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<td>32.9</td>
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<td>435.gromacs</td>
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<td>436.cactusADM</td>
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<td>447.dealII</td>
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<td>459.GemsFDTD</td>
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<td>22.1</td>
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<td>465.tonto</td>
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<td>477</td>
<td>50.7</td>
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<tr>
<td>470.lbm</td>
<td>4</td>
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<td>17.4</td>
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<tr>
<td>481.wrf</td>
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<td>482.sphinx3</td>
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<td>1877</td>
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</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.
NEC Corporation
Express5800/120Bb-6
(Intel Xeon processor 5160)

SPEC CFP2006 Result

SPECfp_rate2006 = 44.0
SPECfp_rate_base2006 = 42.6

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

Test date: Oct-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
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
SPEC CFP2006 Result

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Express5800/120Bb-6
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CPU2006 license: 9006
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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
433.milc: -DSPEC_CPU_LP64 -prof_gen(pass 1) -prof_use(pass 2) -fast
436.gromacs: -DSPEC_CPU_LP64 -nofor_main
437.leslie3d: -DSPEC_CPU_LP64
444.namd: -DSPEC_CPU_LP64
447.dealII: -DSPEC_CPU_LP64 -nofor_main
453.povray: -DSPEC_CPU_LP64
454.calculix: -DSPEC_CPU_LP64 -nofor_main
459.GemsFDTD: -DSPEC_CPU_LP64 -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX
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:

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SPEC CFP2006 Result

NEC Corporation
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(Intel Xeon processor 5160)

SPECfp_rate2006 = 44.0
SPECfp_rate_base2006 = 42.6

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

Test date: Oct-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-FP-linux-flags.html

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

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

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