## NEC Corporation

**Express5800/B120a**

*Intel Xeon X5570*

### CPU2006 license: 9006

**Test sponsor:** NEC Corporation  
**Tested by:** NEC Corporation

### SPECfp®_rate2006 = 193

**SPECfp_rate_base2006 = 186**

### Test date: Aug-2009

**Hardware Availability:** Jul-2009  
**Software Availability:** Feb-2009

### Hardware

- **CPU Name:** Intel Xeon X5570  
- **CPU Characteristics:** Intel Turbo Boost Technology up to 3.33 GHz  
- **CPU MHz:** 2933  
- **FPU:** Integrated  
- **CPU(s) enabled:** 8 cores, 2 chips, 4 cores/chip, 2 threads/core  
- **CPU(s) orderable:** 1,2 chips  
- **Primary Cache:** 32 KB I + 32 KB D on chip per core  
- **Secondary Cache:** 256 KB I+D on chip per core

### Software

- **Operating System:** SUSE Linux Enterprise Server 10 (x86_64)  
  SP2 with patch Linux kernel 20090119,  
  Kernel 2.6.16.60-0.34-smp

- **Compiler:** Intel C++ and Fortran Compiler Professional 11.0  
  for Linux  
  Build 20090131

- **Auto Parallel:** No

- **File System:** ReiserFS  

### Copy Analysis

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Copies</th>
<th>SPECfp_rate_base2006</th>
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### SPECfp_rate_base2006 = 186

- **SPECfp_rate2006 = 193**
# SPEC CFP2006 Result

## NEC Corporation

### Express5800/B120a

(Intel Xeon X5570)

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<thead>
<tr>
<th>CPU2006 license:</th>
<th>9006</th>
</tr>
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<tbody>
<tr>
<td>Test sponsor:</td>
<td>NEC Corporation</td>
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<tr>
<td>Tested by:</td>
<td>NEC Corporation</td>
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<tr>
<td>L3 Cache:</td>
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<td>Other Cache:</td>
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<td>Disk Subsystem:</td>
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<td>System State:</td>
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<td>Base Pointers:</td>
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<td>Peak Pointers:</td>
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### SPECfp_rate2006 = 193

### SPECfp_rate_base2006 = 186

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</tbody>
</table>

### Results Table

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

### Submit Notes

The config file option 'submit' was used.
numactl was used to bind copies to the cores.

### Operating System Notes

'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run.

### Platform Notes

BIOS setting:
NUMA configuration: Enabled
NEC Corporation
Express5800/B120a
(Intel Xeon X5570)

SPEC CFP2006 Result

SPECfp_rate2006 = 193
SPECfp_rate_base2006 = 186

CPU2006 license: 9006
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Test date: Aug-2009
Hardware Availability: Jul-2009
Software Availability: Feb-2009

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:
  -xsSE4.2 -ipo -O3 -no-prec-div -static
C++ benchmarks:
  -xsSE4.2 -ipo -O3 -no-prec-div -static
Fortran benchmarks:
  -xsSE4.2 -ipo -O3 -no-prec-div -static
Benchmarks using both Fortran and C:
  -xsSE4.2 -ipo -O3 -no-prec-div -static
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Peak Compiler Invocation

C benchmarks (except as noted below):

```bash
icc
482.sphinx3: icc -m32
```

C++ benchmarks (except as noted below):

```bash
icpc
450.soplex: icpc -m32
```

Fortran benchmarks (except as noted below):

```bash
ifort
437.leslie3d: ifort -m32
```

Benchmarks using both Fortran and C:

```bash
icc ifort
```

Peak 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
444.namd: -DSPEC_CPU_LP64
447.dealII: -DSPEC_CPU_LP64
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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

Peak Optimization Flags

C benchmarks:

```bash
433.milc: -xsSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -o3(pass 2)
   -no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
   -fno-alias
470.lbm: -xsSE4.2 -ipo -o3 -no-prec-div -static -opt-prefetch
   -auto-ilp32
```

Continued on next page
Peak Optimization Flags (Continued)

482.sphinx3: -xSSE4.2 -ipo -O3 -no-prec-div -static -unroll2

C++ benchmarks:

444.namd: -xSSE4.2 (pass 2) -prof-gen (pass 1) -ipo (pass 2) -O3 (pass 2)
   -no-prec-div (pass 2) -static (pass 2) -prof-use (pass 2)
   -fno-alias -auto-ilp32

447.dealII: -xSSE4.2 (pass 2) -prof-gen (pass 1) -ipo (pass 2) -O3 (pass 2)
   -no-prec-div (pass 2) -static (pass 2) -prof-use (pass 2)
   -unroll2 -ansi-alias -scalar-rep-

450.soplex: -xSSE4.2 (pass 2) -prof-gen (pass 1) -ipo (pass 2) -O3 (pass 2)
   -no-prec-div (pass 2) -static (pass 2) -prof-use (pass 2)
   -opt-malloc-options=3

453.povray: -xSSE4.2 (pass 2) -prof-gen (pass 1) -ipo (pass 2) -O3 (pass 2)
   -no-prec-div (pass 2) -static (pass 2) -prof-use (pass 2)
   -unroll4 -ansi-alias

Fortran benchmarks:

410.bwaves: -xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch

416.gamess: -xSSE4.2 (pass 2) -prof-gen (pass 1) -ipo (pass 2) -O3 (pass 2)
   -no-prec-div (pass 2) -static (pass 2) -prof-use (pass 2)
   -unroll2 -Obo -ansi-alias -scalar-rep-

434.zeusmp: -xSSE4.2 (pass 2) -prof-gen (pass 1) -ipo (pass 2) -O3 (pass 2)
   -no-prec-div (pass 2) -static (pass 2) -prof-use (pass 2)
   -opt-malloc-options=3 -opt-prefetch

437.leslie3d: -xSSE4.2 (pass 2) -prof-gen (pass 1) -ipo (pass 2) -O3 (pass 2)
   -no-prec-div (pass 2) -static (pass 2) -prof-use (pass 2)
   -opt-malloc-options=3 -opt-prefetch

459.GemsFDTD: -xSSE4.2 (pass 2) -prof-gen (pass 1) -ipo (pass 2) -O3 (pass 2)
   -no-prec-div (pass 2) -static (pass 2) -prof-use (pass 2)
   -unroll2 -Obo -opt-prefetch

465.tonto: -xSSE4.2 (pass 2) -prof-gen (pass 1) -ipo (pass 2) -O3 (pass 2)
   -no-prec-div (pass 2) -static (pass 2) -prof-use (pass 2)
   -unroll4 -auto

Benchmarks using both Fortran and C:

435.gromacs: -xSSE4.2 (pass 2) -prof-gen (pass 1) -ipo (pass 2) -O3 (pass 2)
   -no-prec-div (pass 2) -static (pass 2) -prof-use (pass 2)
   -opt-prefetch -auto-ilp32
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Peak Optimization Flags (Continued)

436.cactusADM: basepeak = yes
454.calculix: -xSSE4.2 -ipo -O3 -no-prec-div -static -auto-ilp32
481.wrf: basepeak = yes

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-fp-linux64-revH.xml

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

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