



SPEC® CFP2006 Result

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NEC Corporation

Express5800/120Bb-m6
(Intel Xeon E5205)

SPECfp®_rate2006 = 39.7

SPECfp_rate_base2006 = 38.1

CPU2006 license: 9006

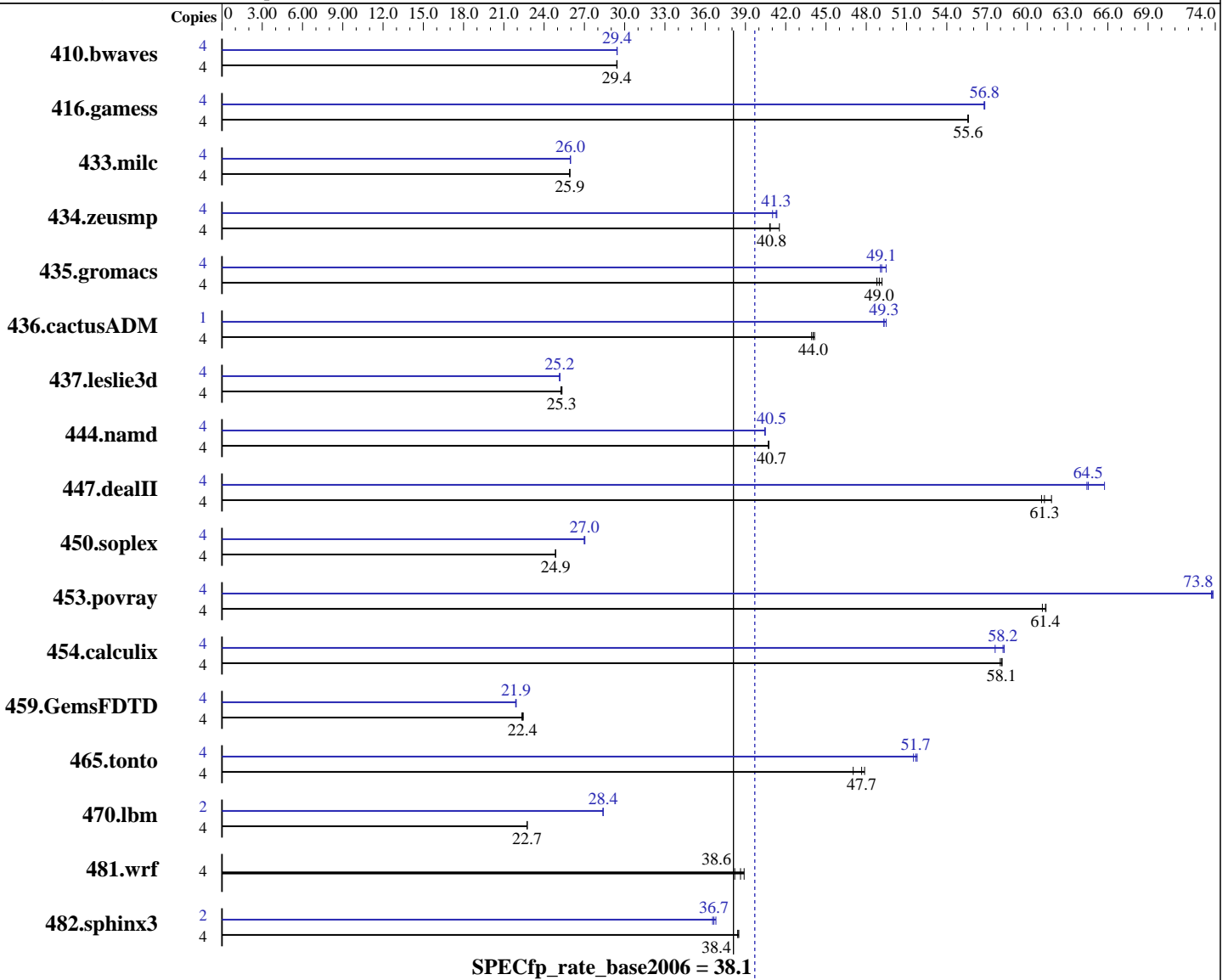
Test sponsor: NEC Corporation

Tested by: NEC Corporation

Test date: Dec-2008

Hardware Availability: Dec-2008

Software Availability: Nov-2008



Hardware

CPU Name: Intel Xeon E5205
 CPU Characteristics: 1066 MHz system bus
 CPU MHz: 1867
 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: 6 MB I+D on chip per chip

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Software

Operating System: SUSE Linux Enterprise Server 10 (x86_64) SP2, Kernel 2.6.16.60-0.21-smp
 Compiler: Intel C++ and Fortran Compiler 11.0 for Linux Build 20081105 Package ID: l_cproc_p_11.0.074, l_cprof_p_11.0.074
 Auto Parallel: Yes
 File System: ReiserFS
 System State: Run level 3 (multi-user)
 Base Pointers: 64-bit

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L3 Cache: None
Other Cache: None
Memory: 16 GB (8x2 GB PC2-5300F, 2 rank, CL5-5-5, ECC)
Disk Subsystem: 1x73.2 GB SAS, 10000 RPM
Other Hardware: None

Peak Pointers: 32/64-bit
Other Software: Binutils 2.18.50.0.7.20080502

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	4	<u>1847</u>	<u>29.4</u>	1848	29.4	1846	29.4	4	<u>1847</u>	<u>29.4</u>	1847	29.4	1847	29.4
416.gamess	4	1408	55.6	1409	55.6	<u>1409</u>	<u>55.6</u>	4	1379	56.8	1378	56.8	<u>1379</u>	<u>56.8</u>
433.milc	4	<u>1417</u>	<u>25.9</u>	1418	25.9	1417	25.9	4	1415	26.0	1414	26.0	<u>1415</u>	<u>26.0</u>
434.zeusmp	4	<u>891</u>	<u>40.8</u>	892	40.8	877	41.5	4	<u>882</u>	<u>41.3</u>	887	41.0	881	41.3
435.gromacs	4	<u>583</u>	<u>49.0</u>	581	49.2	585	48.8	4	582	49.1	<u>581</u>	<u>49.1</u>	577	49.5
436.cactusADM	4	1083	44.1	1088	43.9	<u>1085</u>	<u>44.0</u>	1	<u>242</u>	<u>49.3</u>	241	49.5	242	49.3
437.leslie3d	4	1489	25.3	1484	25.3	<u>1486</u>	<u>25.3</u>	4	1495	25.1	<u>1494</u>	<u>25.2</u>	1493	25.2
444.namd	4	788	40.7	<u>788</u>	<u>40.7</u>	787	40.7	4	793	40.5	<u>793</u>	<u>40.5</u>	793	40.4
447.dealII	4	<u>747</u>	<u>61.3</u>	749	61.1	740	61.8	4	<u>709</u>	<u>64.5</u>	696	65.8	710	64.4
450.soplex	4	1343	24.8	<u>1342</u>	<u>24.9</u>	1342	24.9	4	1236	27.0	<u>1235</u>	<u>27.0</u>	1234	27.0
453.povray	4	347	61.4	<u>347</u>	<u>61.4</u>	348	61.1	4	289	73.7	288	73.8	<u>288</u>	<u>73.8</u>
454.calculix	4	569	58.0	568	58.1	<u>568</u>	<u>58.1</u>	4	573	57.6	<u>567</u>	<u>58.2</u>	566	58.3
459.GemsFDTD	4	1891	22.4	<u>1894</u>	<u>22.4</u>	1899	22.3	4	1940	21.9	1936	21.9	<u>1937</u>	<u>21.9</u>
465.tonto	4	822	47.9	<u>826</u>	<u>47.7</u>	837	47.0	4	760	51.8	764	51.5	<u>761</u>	<u>51.7</u>
470.lbm	4	2418	22.7	<u>2417</u>	<u>22.7</u>	2417	22.7	2	968	28.4	968	28.4	<u>968</u>	<u>28.4</u>
481.wrf	4	1149	38.9	<u>1157</u>	<u>38.6</u>	1170	38.2	4	1149	38.9	<u>1157</u>	<u>38.6</u>	1170	38.2
482.sphinx3	4	2029	38.4	<u>2028</u>	<u>38.4</u>	2025	38.5	2	1059	36.8	<u>1064</u>	<u>36.7</u>	1066	36.6

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.
taskset was used to bind processes to cores except
for 436.cactusADM peak

Operating System Notes

'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run
OMP_NUM_THREADS set to number of cores
KMP_AFFINITY set to "physical,0"
KMP_STACKSIZE set to 64M



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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:

-xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch

C++ benchmarks:

-xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch

Fortran benchmarks:

-xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch

Benchmarks using both Fortran and C:

-xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch



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Peak Compiler Invocation

C benchmarks (except as noted below):

icc

```
482.sphinx3: /opt/intel/Compiler/11.0/074/bin/ia32/icc
             -L/opt/intel/Compiler/11.0/074/ipp/ia32/lib
             -I/opt/intel/Compiler/11.0/074/ipp/ia32/include
```

C++ benchmarks (except as noted below):

icpc

```
450.soplex: /opt/intel/Compiler/11.0/074/bin/ia32/icpc
            -L/opt/intel/Compiler/11.0/074/ipp/ia32/lib
            -I/opt/intel/Compiler/11.0/074/ipp/ia32/include
```

Fortran benchmarks (except as noted below):

ifort

```
437.leslie3d: /opt/intel/Compiler/11.0/074/bin/ia32/ifort
              -L/opt/intel/Compiler/11.0/074/ipp/ia32/lib
              -I/opt/intel/Compiler/11.0/074/ipp/ia32/include
```

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
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.deallI: -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
```

Peak Optimization Flags

C benchmarks:

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Peak Optimization Flags (Continued)

433.milc: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
-no-prec-div -static -fno-alias

470.lbm: -xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch
-auto-ilp32

482.sphinx3: -xSSE4.1 -ipo -O3 -no-prec-div -static -unroll2

C++ benchmarks:

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

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

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

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

Fortran benchmarks:

410.bwaves: -xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch

416.gamess: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
-no-prec-div -static -unroll2 -Ob0 -ansi-alias
-scalar-rep-

434.zeusmp: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
-no-prec-div -static

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

459.GemsFDTD: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
-no-prec-div -static -unroll2 -Ob0 -opt-prefetch

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

Benchmarks using both Fortran and C:

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

436.cactusADM: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
-no-prec-div -static -unroll2 -opt-prefetch -parallel
-auto-ilp32

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Peak Optimization Flags (Continued)

454.calculix: -xSSE4.1 -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

<http://www.spec.org/cpu2006/flags/Intel-ic11.0-fp-linux64-revE.20090710.html>

<http://www.spec.org/cpu2006/flags/NEC-Intel-Linux-Settings-flags-revB.html>

You can also download the XML flags sources by saving the following links:

<http://www.spec.org/cpu2006/flags/Intel-ic11.0-fp-linux64-revE.20090710.xml>

<http://www.spec.org/cpu2006/flags/NEC-Intel-Linux-Settings-flags-revB.xml>

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

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