



SPEC® CFP2006 Result

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NEC Corporation

Express5800/120Bb-6
(Intel Xeon E5205)

SPECfp®_rate2006 = 20.4

SPECfp_rate_base2006 = 19.1

CPU2006 license: 9006

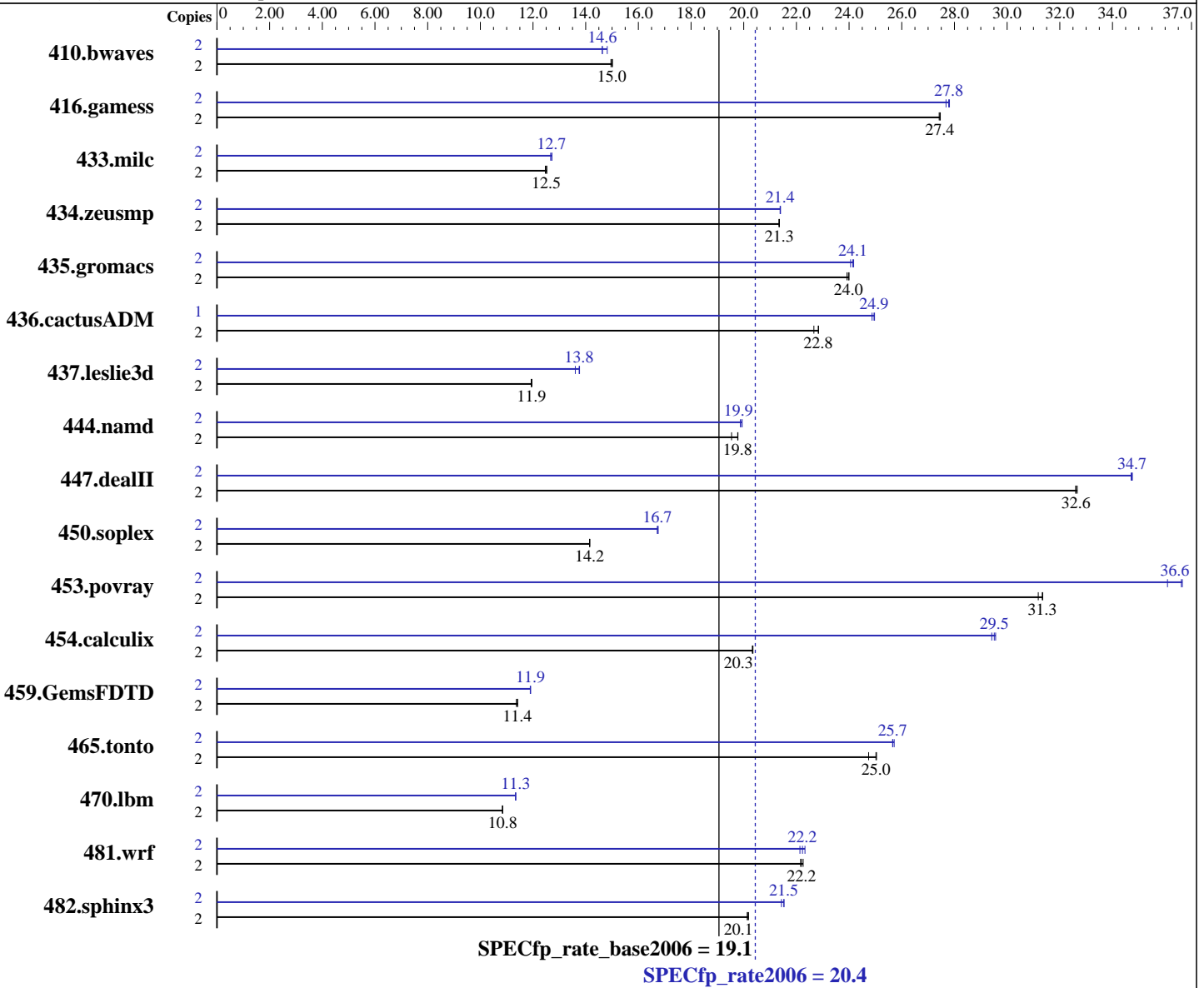
Test sponsor: NEC Corporation

Tested by: NEC Corporation

Test date: May-2008

Hardware Availability: Feb-2008

Software Availability: Nov-2007



Hardware

CPU Name: Intel Xeon E5205
 CPU Characteristics: 1.86 GHz, 6 MB L2, 1066 MHz bus
 CPU MHz: 1867
 FPU: Integrated
 CPU(s) enabled: 2 cores, 1 chip, 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) SP1, Kernel 2.6.16.46-0.12-smp
 Compiler: Intel C++ and Fortran Compiler for Linux32 and Linux64 version 10.1 Build 20070913 Package ID: l_cc_p_10.1.008, l_fc_p_10.1.008
 Auto Parallel: Yes
 File System: ReiserFS

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L3 Cache: None
Other Cache: None
Memory: 8 GB (4x2 GB PC2-5300F, 2 rank, CL5-5-5, ECC)
Disk Subsystem: 1x73.2 GB SAS, 15000RPM
Other Hardware: None

System State: Run level 3 (multi-user)
Base Pointers: 64-bit
Peak Pointers: 32/64-bit
Other Software: binutils-2.17.tar.gz, Version 2.17

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	2	1817	15.0	1810	15.0	<u>1812</u>	<u>15.0</u>	2	1858	14.6	1834	14.8	<u>1858</u>	<u>14.6</u>
416.gamess	2	<u>1427</u>	<u>27.4</u>	1426	27.5	1428	27.4	2	1415	27.7	1408	27.8	<u>1410</u>	<u>27.8</u>
433.milc	2	1466	12.5	<u>1468</u>	<u>12.5</u>	1473	12.5	2	1449	12.7	<u>1445</u>	<u>12.7</u>	1444	12.7
434.zeusmp	2	853	21.3	<u>853</u>	<u>21.3</u>	852	21.4	2	851	21.4	851	21.4	<u>851</u>	<u>21.4</u>
435.gromacs	2	595	24.0	597	23.9	<u>596</u>	<u>24.0</u>	2	594	24.1	591	24.2	<u>591</u>	<u>24.1</u>
436.cactusADM	2	<u>1047</u>	<u>22.8</u>	1055	22.7	1046	22.8	1	480	24.9	<u>479</u>	<u>24.9</u>	479	25.0
437.leslie3d	2	1572	12.0	1575	11.9	<u>1574</u>	<u>11.9</u>	2	<u>1367</u>	<u>13.8</u>	1382	13.6	1366	13.8
444.namd	2	811	19.8	821	19.5	<u>811</u>	<u>19.8</u>	2	<u>805</u>	<u>19.9</u>	804	19.9	807	19.9
447.dealII	2	700	32.7	702	32.6	<u>702</u>	<u>32.6</u>	2	<u>659</u>	<u>34.7</u>	658	34.8	659	34.7
450.soplex	2	1179	14.2	<u>1179</u>	<u>14.2</u>	1179	14.2	2	996	16.8	998	16.7	<u>997</u>	<u>16.7</u>
453.povray	2	341	31.2	<u>340</u>	<u>31.3</u>	339	31.4	2	<u>291</u>	<u>36.6</u>	295	36.1	290	36.7
454.calculix	2	<u>811</u>	<u>20.3</u>	811	20.4	812	20.3	2	<u>559</u>	<u>29.5</u>	561	29.4	558	29.6
459.GemsFDTD	2	1867	11.4	1859	11.4	<u>1860</u>	<u>11.4</u>	2	1782	11.9	1784	11.9	<u>1783</u>	<u>11.9</u>
465.tonto	2	786	25.0	795	24.7	<u>787</u>	<u>25.0</u>	2	765	25.7	767	25.7	<u>767</u>	<u>25.7</u>
470.lbm	2	<u>2534</u>	<u>10.8</u>	2534	10.8	2535	10.8	2	<u>2423</u>	<u>11.3</u>	2423	11.3	2424	11.3
481.wrf	2	<u>1007</u>	<u>22.2</u>	1004	22.3	1008	22.2	2	<u>1005</u>	<u>22.2</u>	1009	22.1	1001	22.3
482.sphinx3	2	1931	20.2	1936	20.1	<u>1935</u>	<u>20.1</u>	2	<u>1811</u>	<u>21.5</u>	1810	21.5	1819	21.4

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
OMP_NUM_THREADS set to number of cores

General Notes

All benchmarks compiled in 64-bit mode except 437.leslie3d, 450.soplex, 470.lbm and 482.sphinx3, for peak, are compiled in 32-bit mode



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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:

-fast

C++ benchmarks:

-fast

Fortran benchmarks:

-fast

Benchmarks using both Fortran and C:

-fast



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Peak Compiler Invocation

C benchmarks (except as noted below):

```
/opt/intel/cc/10.1.008/bin/icc -L/opt/intel/cc/10.1.008/lib
-I/opt/intel/cc/10.1.008/include
```

433.milc: icc

C++ benchmarks (except as noted below):

icpc

```
450.soplex: /opt/intel/cc/10.1.008/bin/icpc -L/opt/intel/cc/10.1.008/lib
-I/opt/intel/cc/10.1.008/include
```

Fortran benchmarks (except as noted below):

ifort

```
437.leslie3d: /opt/intel/fc/10.1.008/bin/ifort -L/opt/intel/fc/10.1.008/lib
-I/opt/intel/fc/10.1.008/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.deall: -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 -fno-alias
-auto-ilp32
```

```
470.lbm: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2
-scalar-rep- -prefetch -opt-malloc-options=3
```

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Peak Optimization Flags (Continued)

482.sphinx3: -fast -unroll2

C++ benchmarks:

444.namd: -prof-gen(pass 1) -prof-use(pass 2) -fast -fno-alias
-auto-ilp32

447.dealIII: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2
-ansi-alias -scalar-rep-

450.soplex: -prof-gen(pass 1) -prof-use(pass 2) -fast
-opt-malloc-options=3

453.povray: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll4
-ansi-alias

Fortran benchmarks:

410.bwaves: -fast -prefetch

416.gamess: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2 -Ob0
-ansi-alias -scalar-rep-

434.zeusmp: -prof-gen(pass 1) -prof-use(pass 2) -fast

437.leslie3d: -prof-gen(pass 1) -prof-use(pass 2) -fast -prefetch
-opt-malloc-options=3

459.GemsFDTD: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2 -Ob0
-prefetch

465.tonto: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll4 -auto

Benchmarks using both Fortran and C:

435.gromacs: -prof-gen(pass 1) -prof-use(pass 2) -fast -prefetch
-auto-ilp32

436.cactusADM: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2
-prefetch -parallel -auto-ilp32

454.calculix: -fast -unroll-aggressive -auto-ilp32

481.wrf: -fast -auto-ilp32

The flags file that was used to format this result can be browsed at

<http://www.spec.org/cpu2006/flags/NEC-Intel-ic10.1-FP-intel64-linux-flags.html>



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You can also download the XML flags source by saving the following link:

<http://www.spec.org/cpu2006/flags/NEC-Intel-ic10.1-FP-intel64-linux-flags.xml>

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