



SPEC[®] CFP2006 Result

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NEC Corporation

Express5800/120Rj-2
(Intel Xeon E5205)

SPECfp[®]_rate2006 = 37.9

SPECfp_rate_base2006 = 34.2

CPU2006 license: 9006

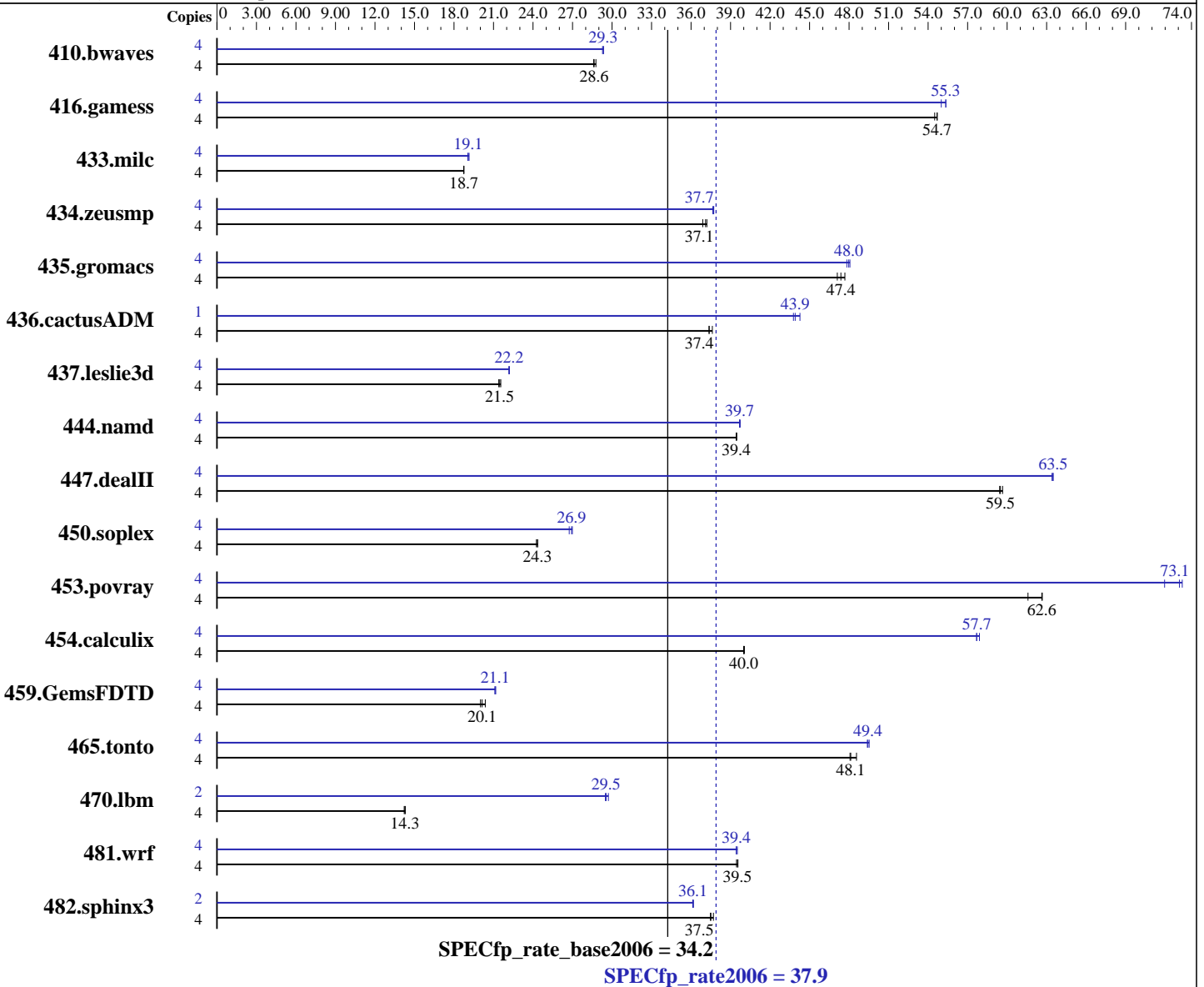
Test sponsor: NEC Corporation

Tested by: NEC Corporation

Test date: Feb-2008

Hardware Availability: Jan-2008

Software Availability: Nov-2007



Hardware

CPU Name: Intel Xeon E5205
 CPU Characteristics: 1.86 GHz, 6 MB L2, 1066 MHz bus
 CPU MHz: 1861
 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) SP1, Kernel 2.6.16.46-0.12-smpp
 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: ext2

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L3 Cache: None
Other Cache: None
Memory: 12 GB (12x1 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	4	1889	28.8	1901	28.6	<u>1898</u>	<u>28.6</u>	4	1857	29.3	<u>1853</u>	<u>29.3</u>	1852	29.4
416.gamess	4	1432	54.7	1437	54.5	<u>1432</u>	<u>54.7</u>	4	1415	55.3	1424	55.0	<u>1415</u>	<u>55.3</u>
433.milc	4	1958	18.8	1959	18.7	<u>1959</u>	<u>18.7</u>	4	1927	19.1	<u>1924</u>	<u>19.1</u>	1918	19.1
434.zeusmp	4	978	37.2	<u>981</u>	<u>37.1</u>	987	36.9	4	965	37.7	967	37.6	<u>965</u>	<u>37.7</u>
435.gromacs	4	606	47.1	<u>603</u>	<u>47.4</u>	599	47.7	4	<u>595</u>	<u>48.0</u>	594	48.1	597	47.8
436.cactusADM	4	1271	37.6	<u>1279</u>	<u>37.4</u>	1279	37.4	1	273	43.8	<u>272</u>	<u>43.9</u>	270	44.3
437.leslie3d	4	1745	21.6	1757	21.4	<u>1751</u>	<u>21.5</u>	4	1693	22.2	1696	22.2	<u>1695</u>	<u>22.2</u>
444.namd	4	814	39.4	813	39.5	<u>813</u>	<u>39.4</u>	4	809	39.7	<u>808</u>	<u>39.7</u>	807	39.7
447.dealII	4	770	59.4	<u>769</u>	<u>59.5</u>	767	59.7	4	<u>721</u>	<u>63.5</u>	722	63.4	721	63.5
450.soplex	4	1375	24.3	<u>1371</u>	<u>24.3</u>	1370	24.4	4	<u>1239</u>	<u>26.9</u>	1247	26.7	1236	27.0
453.povray	4	346	61.6	<u>340</u>	<u>62.6</u>	340	62.7	4	290	73.3	296	72.0	<u>291</u>	<u>73.1</u>
454.calculix	4	824	40.1	825	40.0	<u>825</u>	<u>40.0</u>	4	572	57.7	<u>572</u>	<u>57.7</u>	570	57.9
459.GemsFDTD	4	2121	20.0	<u>2108</u>	<u>20.1</u>	2083	20.4	4	2011	21.1	<u>2009</u>	<u>21.1</u>	2005	21.2
465.tonto	4	819	48.1	810	48.6	<u>818</u>	<u>48.1</u>	4	<u>796</u>	<u>49.4</u>	795	49.5	797	49.4
470.lbm	4	3866	14.2	<u>3851</u>	<u>14.3</u>	3843	14.3	2	<u>930</u>	<u>29.5</u>	932	29.5	925	29.7
481.wrf	4	1133	39.5	<u>1130</u>	<u>39.5</u>	1129	39.6	4	1133	39.4	<u>1133</u>	<u>39.4</u>	1131	39.5
482.sphinx3	4	<u>2079</u>	<u>37.5</u>	2081	37.5	2068	37.7	2	1077	36.2	<u>1079</u>	<u>36.1</u>	1079	36.1

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

Platform Notes

Bios settings:
Intel SpeedStep Technology: Disabled



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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

The NEC Express5800/120Rh-1(Intel Xeon Processor E5205), the NEC Express5800/120Rj-2(Intel Xeon Processor E5205), the Bull NovaScale R440 E1 (Intel Xeon E5205,1.86GHz) and the Bull NovaScale R460 E1 (Intel Xeon E5205,1.86GHz) models are electronically equivalent. The results have been measured on a NEC Express5800/120Rj-2(Intel Xeon Processor E5205) model.

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



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Base Optimization Flags

C benchmarks:

-fast

C++ benchmarks:

-fast

Fortran benchmarks:

-fast

Benchmarks using both Fortran and C:

-fast

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.dealII: -DSPEC_CPU_LP64

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Peak Portability Flags (Continued)

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

482.sphinx3: -fast -unroll2

C++ benchmarks:

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

447.dealII: -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

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Peak Optimization Flags (Continued)

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.20090714.02.html>

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.20090714.02.xml>

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