



SPEC® CFP2006 Result

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NEC Corporation

Express5800/i120Ra-e1
(Intel Xeon L5240)

SPECfp®_rate2006 = 31.1

SPECfp_rate_base2006 = 27.9

CPU2006 license: 9006

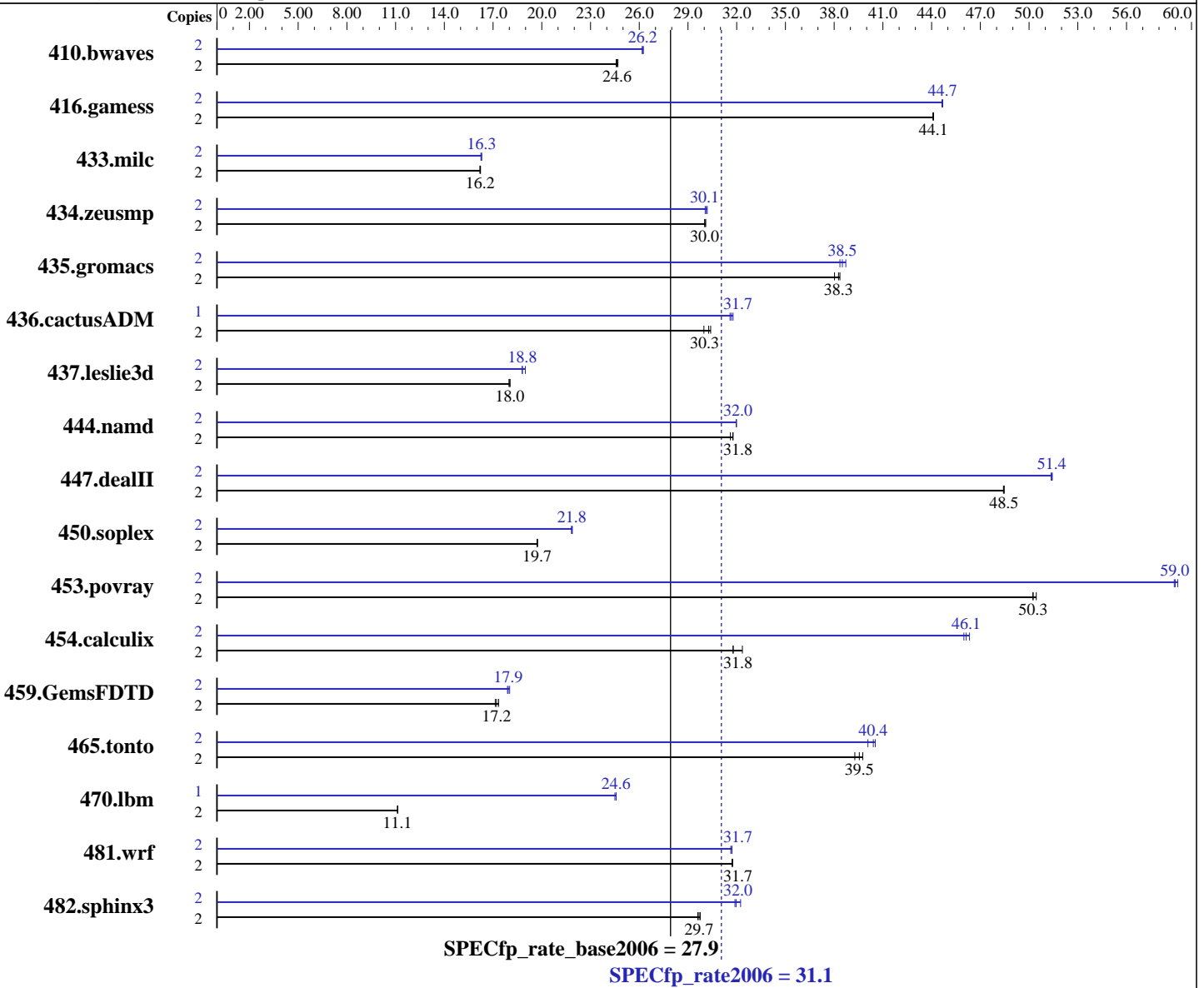
Test sponsor: NEC Corporation

Tested by: NEC Corporation

Test date: Jul-2008

Hardware Availability: May-2008

Software Availability: Nov-2007



Hardware

CPU Name: Intel Xeon L5240
 CPU Characteristics: 3.00 GHz, 6 MB L2, 1333 MHz bus
 CPU MHz: 3000
 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-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: ReiserFS

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L3 Cache: None
Other Cache: None
Memory: 16 GB (4x4 GB PC2-5300P, 2 rank, CL5-5-5, ECC)
Disk Subsystem: 1x80.0 GB SATAII, 7200RPM
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	1106	24.6	<u>1103</u>	<u>24.6</u>	1101	24.7	2	<u>1037</u>	<u>26.2</u>	1038	26.2	1035	26.3
416.gamess	2	888	44.1	<u>888</u>	<u>44.1</u>	888	44.1	2	<u>876</u>	<u>44.7</u>	877	44.6	876	44.7
433.milc	2	1131	16.2	1134	16.2	<u>1132</u>	<u>16.2</u>	2	<u>1127</u>	<u>16.3</u>	1126	16.3	1130	16.3
434.zeusmp	2	606	30.0	<u>606</u>	<u>30.0</u>	605	30.1	2	603	30.2	605	30.1	<u>604</u>	<u>30.1</u>
435.gromacs	2	372	38.4	<u>373</u>	<u>38.3</u>	376	38.0	2	372	38.4	369	38.7	<u>371</u>	<u>38.5</u>
436.cactusADM	2	<u>789</u>	<u>30.3</u>	786	30.4	797	30.0	1	378	31.6	376	31.8	<u>377</u>	<u>31.7</u>
437.leslie3d	2	1046	18.0	<u>1043</u>	<u>18.0</u>	1042	18.0	2	<u>1000</u>	<u>18.8</u>	990	19.0	1000	18.8
444.namd	2	507	31.6	<u>505</u>	<u>31.8</u>	505	31.8	2	502	32.0	502	32.0	<u>502</u>	<u>32.0</u>
447.dealII	2	473	48.4	472	48.5	<u>472</u>	<u>48.5</u>	2	445	51.4	<u>445</u>	<u>51.4</u>	446	51.4
450.soplex	2	845	19.7	<u>846</u>	<u>19.7</u>	846	19.7	2	764	21.8	762	21.9	<u>763</u>	<u>21.8</u>
453.povray	2	211	50.4	<u>212</u>	<u>50.3</u>	212	50.2	2	<u>180</u>	<u>59.0</u>	181	58.9	180	59.2
454.calculix	2	519	31.8	<u>519</u>	<u>31.8</u>	510	32.3	2	356	46.3	359	46.0	<u>358</u>	<u>46.1</u>
459.GemsFDTD	2	1238	17.1	1224	17.3	<u>1232</u>	<u>17.2</u>	2	1186	17.9	<u>1183</u>	<u>17.9</u>	1177	18.0
465.tonto	2	495	39.8	501	39.3	<u>498</u>	<u>39.5</u>	2	<u>487</u>	<u>40.4</u>	491	40.1	486	40.5
470.lbm	2	2469	11.1	2471	11.1	<u>2471</u>	<u>11.1</u>	1	561	24.5	<u>559</u>	<u>24.6</u>	559	24.6
481.wrf	2	<u>704</u>	<u>31.7</u>	705	31.7	704	31.7	2	706	31.6	704	31.7	<u>705</u>	<u>31.7</u>
482.sphinx3	2	<u>1313</u>	<u>29.7</u>	1310	29.8	1317	29.6	2	<u>1219</u>	<u>32.0</u>	1209	32.2	1222	31.9

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
except for 436.cactusADM at peak.
OMP_NUM_THREADS set to number of cores

Platform Notes

Bios settings:
Hardware Prefetcher: Enabled
Adjacent Cache Line Prefetch: Enabled
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

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

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Base Optimization Flags (Continued)

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
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



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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

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

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Peak Optimization Flags (Continued)

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>

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

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