



SPEC[®] CFP2006 Result

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NEC Corporation

Express5800/120Bb-6
(Intel Xeon X5460)

SPECfp[®]_rate2006 = 41.6

SPECfp_rate_base2006 = 38.2

CPU2006 license: 9006

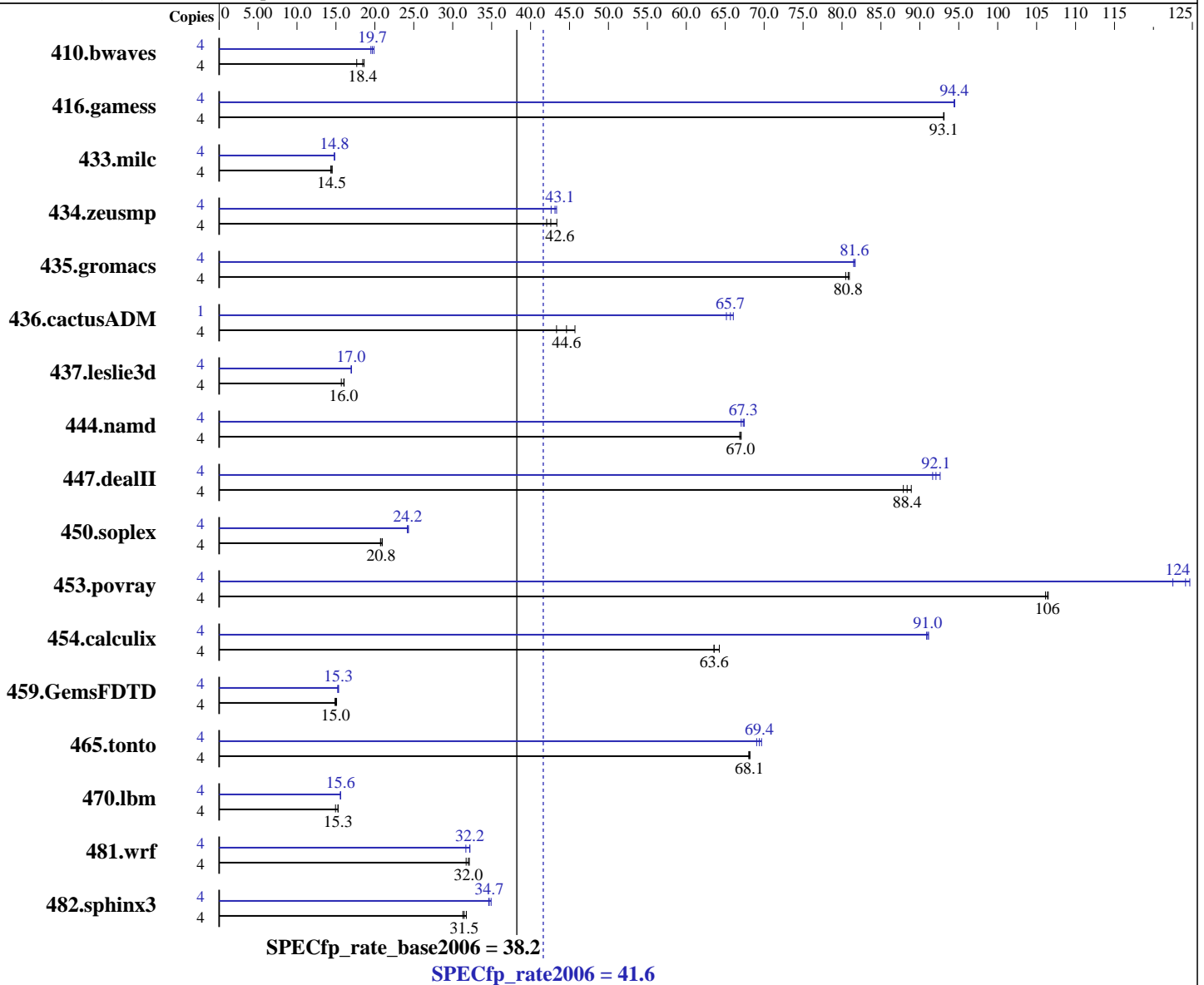
Test sponsor: NEC Corporation

Tested by: NEC Corporation

Test date: May-2008

Hardware Availability: Feb-2008

Software Availability: Nov-2007



Hardware

CPU Name: Intel Xeon X5460
 CPU Characteristics: 3.16 GHz, 2x6 MB L2 shared, 1333 MHz bus
 CPU MHz: 3167
 FPU: Integrated
 CPU(s) enabled: 4 cores, 1 chip, 4 cores/chip
 CPU(s) orderable: 1,2 chips
 Primary Cache: 32 KB I + 32 KB D on chip per core
 Secondary Cache: 12 MB I+D on chip per chip, 6 MB shared / 2 cores

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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: 16 GB (4x4 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	3076	17.7	<u>2948</u>	<u>18.4</u>	2918	18.6	4	2732	19.9	2789	19.5	<u>2762</u>	<u>19.7</u>
416.gamess	4	842	93.1	841	93.1	<u>841</u>	<u>93.1</u>	4	829	94.5	<u>829</u>	<u>94.4</u>	830	94.4
433.milc	4	2563	14.3	<u>2537</u>	<u>14.5</u>	2530	14.5	4	<u>2477</u>	<u>14.8</u>	2483	14.8	2476	14.8
434.zeusmp	4	865	42.1	<u>854</u>	<u>42.6</u>	839	43.4	4	<u>844</u>	<u>43.1</u>	854	42.6	840	43.3
435.gromacs	4	353	81.0	355	80.5	<u>353</u>	<u>80.8</u>	4	350	81.7	<u>350</u>	<u>81.6</u>	350	81.5
436.cactusADM	4	1103	43.3	<u>1071</u>	<u>44.6</u>	1046	45.7	1	183	65.2	181	66.0	<u>182</u>	<u>65.7</u>
437.leslie3d	4	2397	15.7	2341	16.1	<u>2349</u>	<u>16.0</u>	4	2211	17.0	2217	17.0	<u>2216</u>	<u>17.0</u>
444.namd	4	478	67.1	480	66.9	<u>479</u>	<u>67.0</u>	4	<u>477</u>	<u>67.3</u>	478	67.1	476	67.5
447.dealII	4	521	87.9	515	88.9	<u>518</u>	<u>88.4</u>	4	<u>497</u>	<u>92.1</u>	499	91.6	494	92.6
450.soplex	4	1610	20.7	<u>1605</u>	<u>20.8</u>	1591	21.0	4	1371	24.3	<u>1377</u>	<u>24.2</u>	1380	24.2
453.povray	4	200	106	201	106	<u>200</u>	<u>106</u>	4	<u>171</u>	<u>124</u>	174	122	171	125
454.calculix	4	514	64.2	519	63.6	<u>519</u>	<u>63.6</u>	4	363	90.9	<u>363</u>	<u>91.0</u>	362	91.1
459.GemsFDTD	4	2852	14.9	2813	15.1	<u>2835</u>	<u>15.0</u>	4	2767	15.3	<u>2771</u>	<u>15.3</u>	2788	15.2
465.tonto	4	577	68.2	<u>578</u>	<u>68.1</u>	579	68.0	4	565	69.7	<u>567</u>	<u>69.4</u>	570	69.0
470.lbm	4	3677	14.9	<u>3601</u>	<u>15.3</u>	3597	15.3	4	3521	15.6	3528	15.6	<u>3527</u>	<u>15.6</u>
481.wrf	4	1408	31.7	1390	32.1	<u>1396</u>	<u>32.0</u>	4	1410	31.7	<u>1388</u>	<u>32.2</u>	1387	32.2
482.sphinx3	4	2490	31.3	<u>2477</u>	<u>31.5</u>	2455	31.8	4	2232	34.9	<u>2248</u>	<u>34.7</u>	2252	34.6

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

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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Tested with SPEC CPU2006 v1.0.
Report generated on Tue Jul 22 17:46:05 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 25 June 2008.