



SPEC® CFP2006 Result

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NEC Corporation

SPECfp®2006 = 66.6

Express5800/GT110e (Intel Xeon E3-1220 v2)

SPECfp_base2006 = 64.7

CPU2006 license: 9006

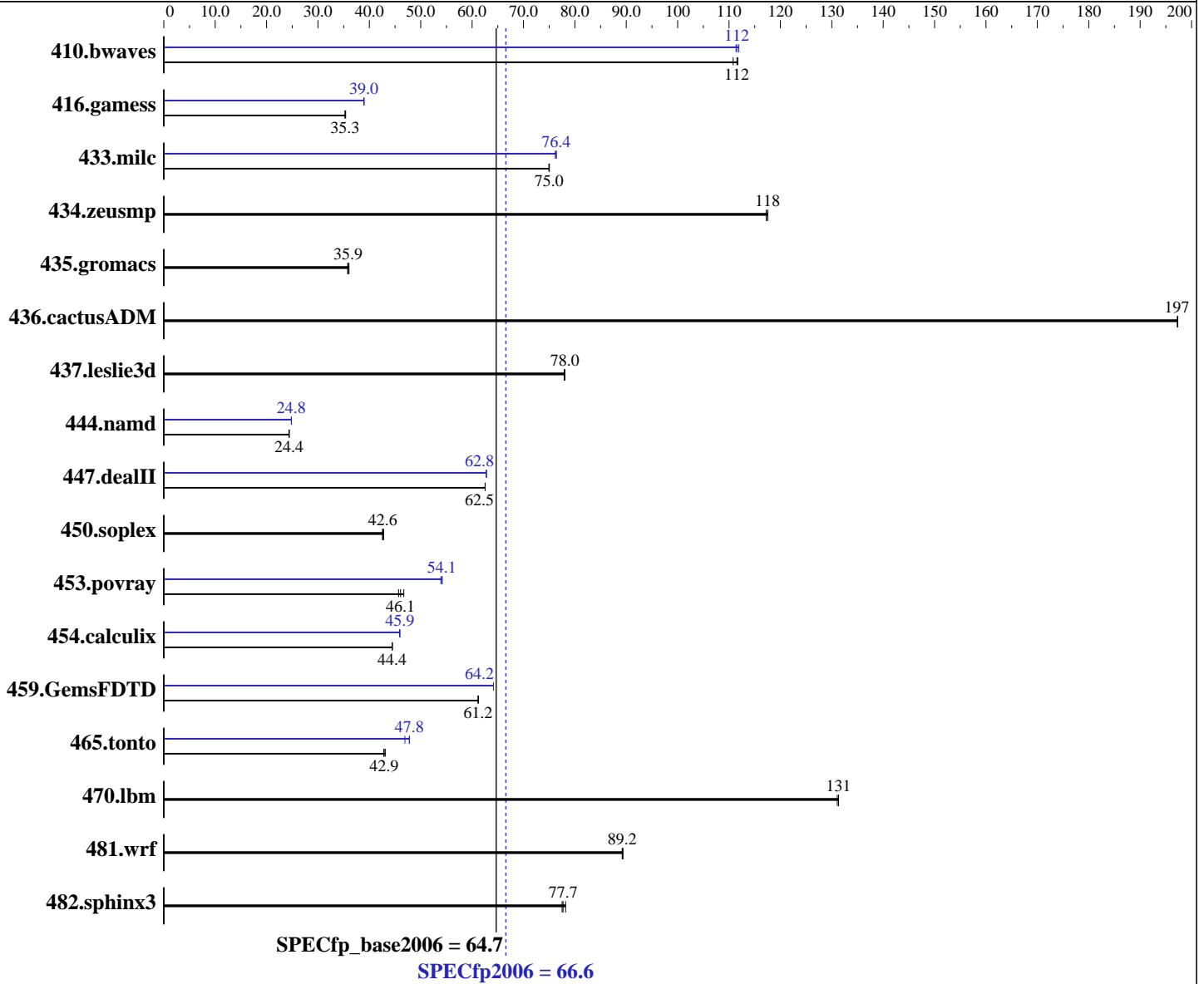
Test sponsor: NEC Corporation

Tested by: NEC Corporation

Test date: Jul-2012

Hardware Availability: Jul-2012

Software Availability: Feb-2012



Hardware

CPU Name: Intel Xeon E3-1220 v2
 CPU Characteristics: Intel Turbo Boost Technology up to 3.50 GHz
 CPU MHz: 3100
 FPU: Integrated
 CPU(s) enabled: 4 cores, 1 chip, 4 cores/chip
 CPU(s) orderable: 1 chip
 Primary Cache: 32 KB I + 32 KB D on chip per core
 Secondary Cache: 256 KB I+D on chip per core

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Software

Operating System: Red Hat Enterprise Linux Server release 6.2 (Santiago)
 Kernel 2.6.32-220.el6.x86_64
 Compiler: C/C++: Version 12.1.3.293 of Intel C++ Studio XE for Linux;
 Fortran: Version 12.1.3.293 of Intel Fortran Studio XE for Linux
 Auto Parallel: Yes
 File System: ext4

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L3 Cache: 8 MB I+D on chip per chip
 Other Cache: None
 Memory: 16 GB (2 x 8 GB 2Rx8 PC3L-12800E-11, ECC)
 Disk Subsystem: 1 x 500 GB SATA, 7200 RPM
 Other Hardware: None

System State: Run level 3 (multi-user)
 Base Pointers: 64-bit
 Peak Pointers: 32/64-bit
 Other Software: None

Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	123	111	<u>122</u>	<u>112</u>	122	112	122	111	121	112	<u>122</u>	<u>112</u>
416.gamess	555	35.3	553	35.4	<u>555</u>	<u>35.3</u>	503	39.0	<u>503</u>	<u>39.0</u>	503	38.9
433.milc	122	75.0	122	75.0	<u>122</u>	<u>75.0</u>	120	76.4	121	76.2	<u>120</u>	<u>76.4</u>
434.zeusmp	<u>77.4</u>	<u>118</u>	77.6	117	77.4	118	<u>77.4</u>	<u>118</u>	77.6	117	77.4	118
435.gromacs	198	36.0	<u>199</u>	<u>35.9</u>	200	35.8	198	36.0	<u>199</u>	<u>35.9</u>	200	35.8
436.cactusADM	60.6	197	60.6	197	<u>60.6</u>	<u>197</u>	60.6	197	60.6	197	<u>60.6</u>	<u>197</u>
437.leslie3d	120	78.0	<u>120</u>	<u>78.0</u>	121	77.9	120	78.0	<u>120</u>	<u>78.0</u>	121	77.9
444.namd	329	24.4	329	24.4	<u>329</u>	<u>24.4</u>	323	24.8	<u>323</u>	<u>24.8</u>	323	24.8
447.dealII	183	62.5	183	62.6	<u>183</u>	<u>62.5</u>	<u>182</u>	<u>62.8</u>	182	62.8	182	62.7
450.soplex	195	42.8	196	42.6	<u>196</u>	<u>42.6</u>	195	42.8	196	42.6	<u>196</u>	<u>42.6</u>
453.povray	<u>115</u>	<u>46.1</u>	116	45.7	114	46.7	<u>98.3</u>	<u>54.1</u>	98.2	54.2	98.7	53.9
454.calculix	<u>186</u>	<u>44.4</u>	185	44.5	186	44.4	180	46.0	<u>180</u>	<u>45.9</u>	180	45.9
459.GemsFDTD	<u>173</u>	<u>61.2</u>	173	61.2	173	61.2	<u>165</u>	<u>64.2</u>	165	64.2	165	64.2
465.tonto	228	43.1	<u>230</u>	<u>42.9</u>	230	42.8	206	47.8	<u>206</u>	<u>47.8</u>	210	46.9
470.lbm	105	131	105	131	<u>105</u>	<u>131</u>	105	131	105	131	<u>105</u>	<u>131</u>
481.wrf	125	89.4	125	89.2	<u>125</u>	<u>89.2</u>	125	89.4	125	89.2	<u>125</u>	<u>89.2</u>
482.sphinx3	249	78.2	<u>251</u>	<u>77.7</u>	251	77.5	249	78.2	<u>251</u>	<u>77.7</u>	251	77.5

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

Operating System Notes

Stack size set to unlimited using "ulimit -s unlimited"

Platform Notes

Default BIOS settings were used.

General Notes

Environment variables set by runspec before the start of the run:
 KMP_AFFINITY = "granularity=fine,scatter"
 LD_LIBRARY_PATH = "/home/cpu2006/libs/32:/home/cpu2006/libs/64"
 OMP_NUM_THREADS = "4"

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General Notes (Continued)

Added glibc-static-2.12-1.47.el6.x86_64.rpm
to enable static linking

Transparent Huge Pages enabled with:
echo always > /sys/kernel/mm/redhat_transparent_hugepage/enabled

Base Compiler Invocation

C benchmarks:

icc -m64

C++ benchmarks:

icpc -m64

Fortran benchmarks:

ifort -m64

Benchmarks using both Fortran and C:

icc -m64 ifort -m64

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.deallI: -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:

-xAVX -ipo -O3 -no-prec-div -static -parallel -opt-prefetch
-ansi-alias

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Base Optimization Flags (Continued)

C++ benchmarks:

-xAVX -ipo -O3 -no-prec-div -static -opt-prefetch -ansi-alias

Fortran benchmarks:

-xAVX -ipo -O3 -no-prec-div -static -parallel -opt-prefetch

Benchmarks using both Fortran and C:

-xAVX -ipo -O3 -no-prec-div -static -parallel -opt-prefetch
-ansi-alias

Peak Compiler Invocation

C benchmarks:

icc -m64

C++ benchmarks:

icpc -m64

Fortran benchmarks:

ifort -m64

Benchmarks using both Fortran and C:

icc -m64 ifort -m64

Peak Portability Flags

Same as Base Portability Flags

Peak Optimization Flags

C benchmarks:

433.milc: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -prof-use(pass 2) -static -auto-ilp32
-ansi-alias

470.lbm: basepeak = yes

482.sphinx3: basepeak = yes

C++ benchmarks:

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

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Peak Optimization Flags (Continued)

447.deallI: -xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch
-ansi-alias

450.soplex: basepeak = yes

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

Fortran benchmarks:

410.bwaves: -xAVX -ipo -O3 -no-prec-div -opt-prefetch -parallel
-static

416.gamess: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -prof-use(pass 2) -unroll2
-inline-level=0 -scalar-rep- -static

434.zeusmp: basepeak = yes

437.leslie3d: basepeak = yes

459.GemsFDTD: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -prof-use(pass 2) -unroll2
-inline-level=0 -opt-prefetch -parallel

465.tonto: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -prof-use(pass 2) -inline-calloc
-opt-malloc-options=3 -auto -unroll4

Benchmarks using both Fortran and C:

435.gromacs: basepeak = yes

436.cactusADM: basepeak = yes

454.calculix: -xAVX -ipo -O3 -no-prec-div -auto-ilp32 -ansi-alias

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-ic12.1-official-linux64.20120425.html>

<http://www.spec.org/cpu2006/flags/NEC-Platform-Settings-V1.2-R120d-RevA.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20120425.xml>

<http://www.spec.org/cpu2006/flags/NEC-Platform-Settings-V1.2-R120d-RevA.xml>



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

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