



SPEC® CFP2006 Result

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NEC Corporation

SPECfp®2006 = 65.5

Express5800/R120d-2M (Intel Xeon E5-2650L)

SPECfp_base2006 = 62.2

CPU2006 license: 9006

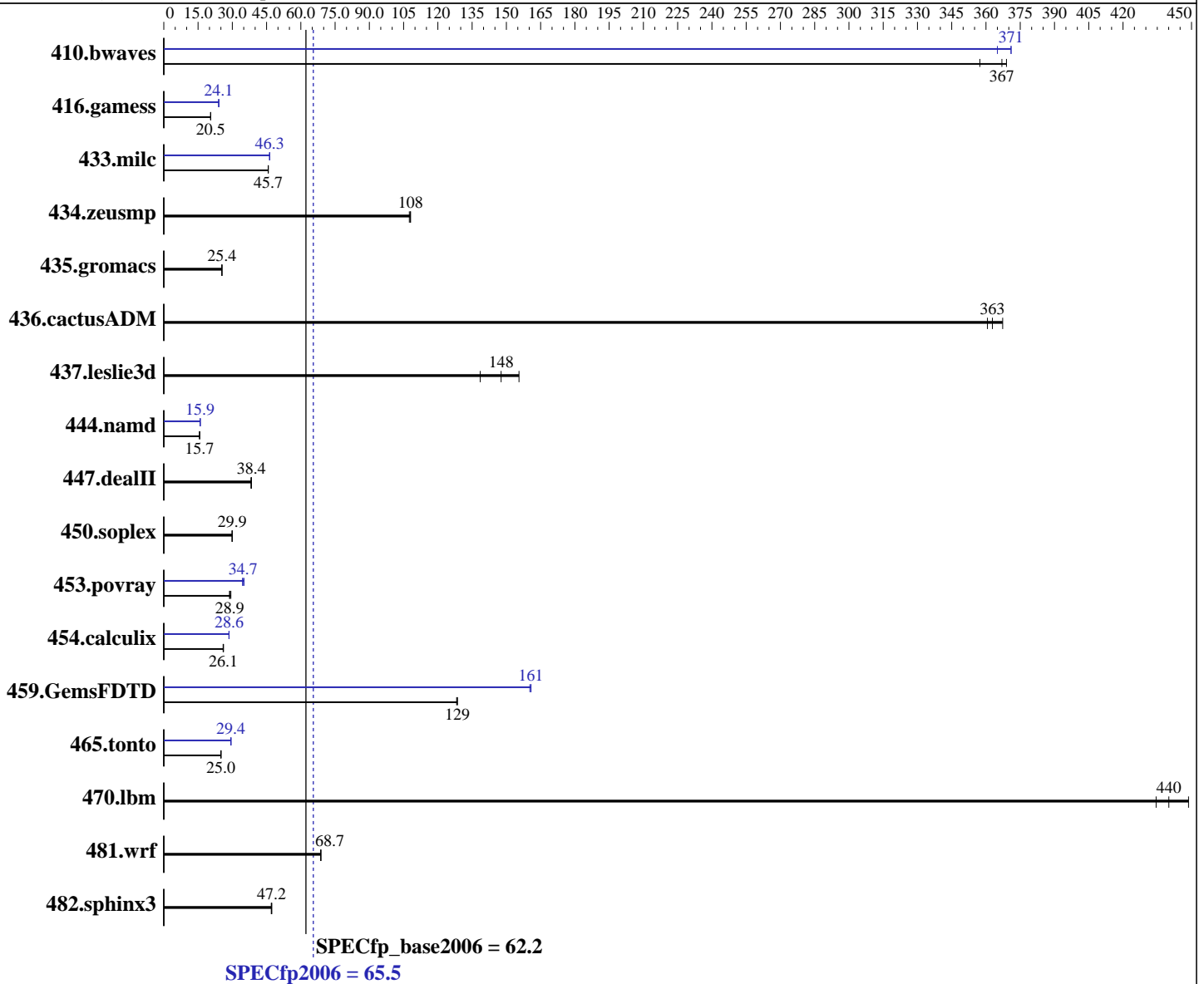
Test date: Jun-2012

Test sponsor: NEC Corporation

Hardware Availability: Apr-2012

Tested by: NEC Corporation

Software Availability: Dec-2011



Hardware

CPU Name: Intel Xeon E5-2650L
 CPU Characteristics: Intel Turbo Boost Technology up to 2.30 GHz
 CPU MHz: 1800
 FPU: Integrated
 CPU(s) enabled: 16 cores, 2 chips, 8 cores/chip, 2 threads/core
 CPU(s) orderable: 1,2 chips
 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 12.1.2.273 of Intel C++ Studio XE for Linux;
 Fortran: Version 12.1.2.273 of Intel Fortran Studio XE for Linux
 Auto Parallel: Yes
 File System: ext4

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L3 Cache: 20 MB I+D on chip per chip
 Other Cache: None
 Memory: 128 GB (16 x 8 GB 2Rx4 PC3L-12800R-11, ECC)
 Disk Subsystem: 1 x 250 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	38.0	357	36.8	369	<u>37.0</u>	<u>367</u>	36.6	371	37.2	365	<u>36.6</u>	<u>371</u>
416.gamess	955	20.5	953	20.5	<u>954</u>	<u>20.5</u>	813	24.1	815	24.0	<u>814</u>	<u>24.1</u>
433.milc	201	45.7	<u>201</u>	<u>45.7</u>	201	45.8	198	46.4	198	46.3	<u>198</u>	<u>46.3</u>
434.zeusmp	84.6	108	<u>84.3</u>	<u>108</u>	84.2	108	84.6	108	<u>84.3</u>	<u>108</u>	84.2	108
435.gromacs	281	25.4	<u>281</u>	<u>25.4</u>	281	25.4	281	25.4	<u>281</u>	<u>25.4</u>	281	25.4
436.cactusADM	<u>32.9</u>	<u>363</u>	32.5	367	33.1	361	<u>32.9</u>	<u>363</u>	32.5	367	33.1	361
437.leslie3d	<u>63.6</u>	<u>148</u>	60.4	156	67.8	139	<u>63.6</u>	<u>148</u>	60.4	156	67.8	139
444.namd	511	15.7	512	15.7	<u>512</u>	<u>15.7</u>	<u>503</u>	<u>15.9</u>	503	15.9	503	15.9
447.dealII	<u>298</u>	<u>38.4</u>	300	38.1	298	38.4	<u>298</u>	<u>38.4</u>	300	38.1	298	38.4
450.soplex	278	30.0	279	29.9	<u>279</u>	<u>29.9</u>	278	30.0	279	29.9	<u>279</u>	<u>29.9</u>
453.povray	<u>184</u>	<u>28.9</u>	181	29.4	185	28.8	<u>154</u>	<u>34.7</u>	154	34.5	151	35.1
454.calculix	<u>316</u>	<u>26.1</u>	318	26.0	316	26.1	289	28.6	<u>289</u>	<u>28.6</u>	289	28.5
459.GemsFDTD	<u>82.5</u>	<u>129</u>	82.7	128	82.5	129	66.2	160	<u>66.0</u>	<u>161</u>	66.0	161
465.tonto	392	25.1	394	24.9	<u>394</u>	<u>25.0</u>	<u>335</u>	<u>29.4</u>	335	29.3	334	29.4
470.lbm	<u>31.2</u>	<u>440</u>	31.6	434	30.6	449	<u>31.2</u>	<u>440</u>	31.6	434	30.6	449
481.wrf	163	68.7	<u>163</u>	<u>68.7</u>	162	68.8	163	68.7	<u>163</u>	<u>68.7</u>	162	68.8
482.sphinx3	414	47.1	<u>413</u>	<u>47.2</u>	412	47.3	414	47.1	<u>413</u>	<u>47.2</u>	412	47.3

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

BIOS Settings:
 Energy Performance: Performance
 Memory Voltage: 1.5 V

General Notes

Environment variables set by runspec before the start of the run:
 KMP_AFFINITY = "granularity=fine,compact,1,0"
 LD_LIBRARY_PATH = "/home/cpu2006/libs/32:/home/cpu2006/libs/64"

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General Notes (Continued)

OMP_NUM_THREADS = "16"

The Express5800/R120d-1M and the Express5800/R120d-2M models are electronically equivalent. The results have been measured on the Express5800/R120d-2M model.

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



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Base Optimization Flags

C benchmarks:

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

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

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Peak Optimization Flags (Continued)

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

447.dealII: basepeak = yes

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: -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 -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-linux64.20111122.html>

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



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

<http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20111122.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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