SPEC® CFP2006 Result

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NEC Corporation

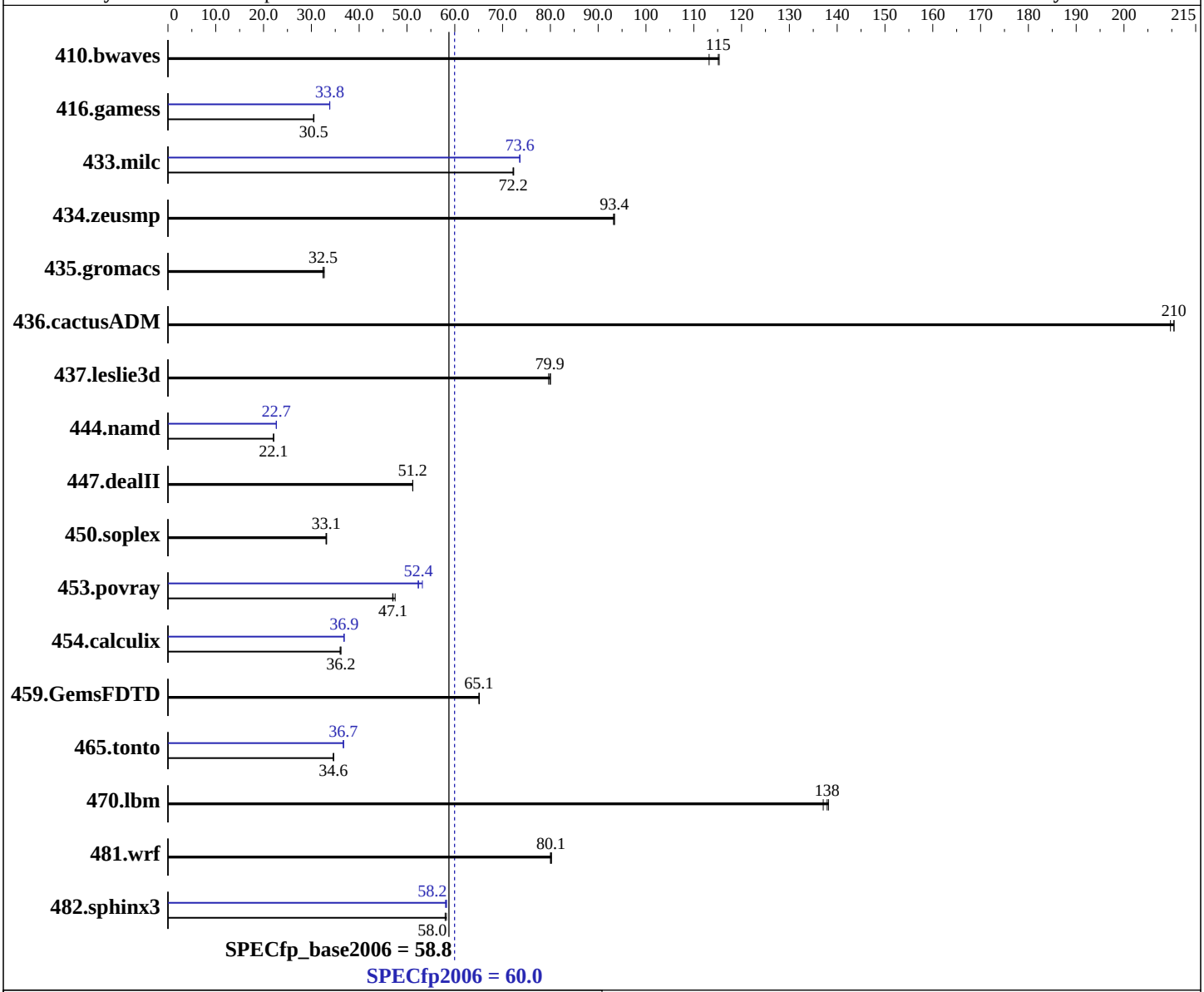
Express5800/R110f-1E (Intel Xeon E3-1230L v3)

SPECfp®2006 = 60.0

SPECfp_base2006 = 58.8

CPU2006 license: 9006
Test sponsor: NEC Corporation
Tested by: NEC Corporation

Test date: Sep-2013
Hardware Availability: Jul-2013
Software Availability: Mar-2013



Hardware

CPU Name:	Intel Xeon E3-1230L v3
CPU Characteristics:	Intel Turbo Boost Technology up to 2.80 GHz
CPU MHz:	1800
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 6.4 (Santiago) Kernel 2.6.32-358.el6.x86_64
Compiler:	C/C++: Version 13.1.1.163 of Intel C++ Studio XE for Linux; Fortran: Version 13.1.1.163 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 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	120	113	118	115	**118**	**115**	120	113	118	115	**118**	**115**
416.gamess	641	30.5	642	30.5	**642**	**30.5**	578	33.9	**578**	**33.8**	579	33.8
433.milc	**127**	**72.2**	127	72.3	127	72.2	125	73.6	**125**	**73.6**	125	73.6
434.zeusmp	97.6	93.2	97.4	93.4	**97.4**	**93.4**	97.6	93.2	97.4	93.4	**97.4**	**93.4**
435.gromacs	218	32.7	220	32.4	**220**	**32.5**	218	32.7	220	32.4	**220**	**32.5**
436.cactusADM	56.8	210	**56.8**	**210**	57.0	210	56.8	210	**56.8**	**210**	57.0	210
437.leslie3d	118	79.6	117	80.0	**118**	**79.9**	118	79.6	117	80.0	**118**	**79.9**
444.namd	363	22.1	**363**	**22.1**	363	22.1	354	22.7	**354**	**22.7**	354	22.7
447.dealII	**223**	**51.2**	223	51.2	223	51.2	**223**	**51.2**	223	51.2	223	51.2
450.soplex	252	33.1	251	33.2	**252**	**33.1**	252	33.1	251	33.2	**252**	**33.1**
453.povray	113	47.0	112	47.5	**113**	**47.1**	**101**	**52.4**	102	52.3	99.9	53.2
454.calculix	228	36.2	229	36.0	**228**	**36.2**	224	36.8	224	36.9	**224**	**36.9**
459.GemsFDTD	**163**	**65.1**	163	65.2	163	65.1	**163**	**65.1**	163	65.2	163	65.1
465.tonto	285	34.6	284	34.7	**284**	**34.6**	268	36.7	**268**	**36.7**	268	36.7
470.lbm	**99.6**	**138**	99.4	138	100	137	**99.6**	**138**	99.4	138	100	137
481.wrf	140	80.0	139	80.2	**139**	**80.1**	140	80.0	139	80.2	**139**	**80.1**
482.sphinx3	**336**	**58.0**	334	58.3	336	58.0	**335**	**58.2**	336	58.1	334	58.3

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
 Hyper-Threading: Disabled
```

General Notes

```
Environment variables set by runspec before the start of the run:
LD_LIBRARY_PATH = "/home/cpu2006/libs/32:/home/cpu2006/libs/64:/home/cpu2006/sh"
OMP_NUM_THREADS = "4"
```

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General Notes (Continued)

```
Added glibc-static-2.12-1.107.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.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:
```
-xCORE-AVX2 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch
-ansi-alias
```

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Base Optimization Flags (Continued)

C++ benchmarks:
`-xCORE-AVX2 -ipo -O3 -no-prec-div -static -opt-prefetch -ansi-alias`

Fortran benchmarks:
`-xCORE-AVX2 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch`

Benchmarks using both Fortran and C:
`-xCORE-AVX2 -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: `-xCORE-AVX2`(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: `-xCORE-AVX2 -ipo -O3 -no-prec-div -unroll2 -ansi-alias -parallel`

C++ benchmarks:

Continued on next page

Peak Optimization Flags (Continued)

444.namd: -xCORE-AVX2(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: -xCORE-AVX2(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: basepeak = yes

416.gamess: -xCORE-AVX2(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: basepeak = yes

465.tonto: -xCORE-AVX2(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: -xCORE-AVX2 -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-ic13-official-linux64.20130702.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-ic13-official-linux64.20130702.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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