SPEC® CFP2006 Result
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NEC Corporation

Express5800/i120Ra-e1
(Intel Xeon L5215)

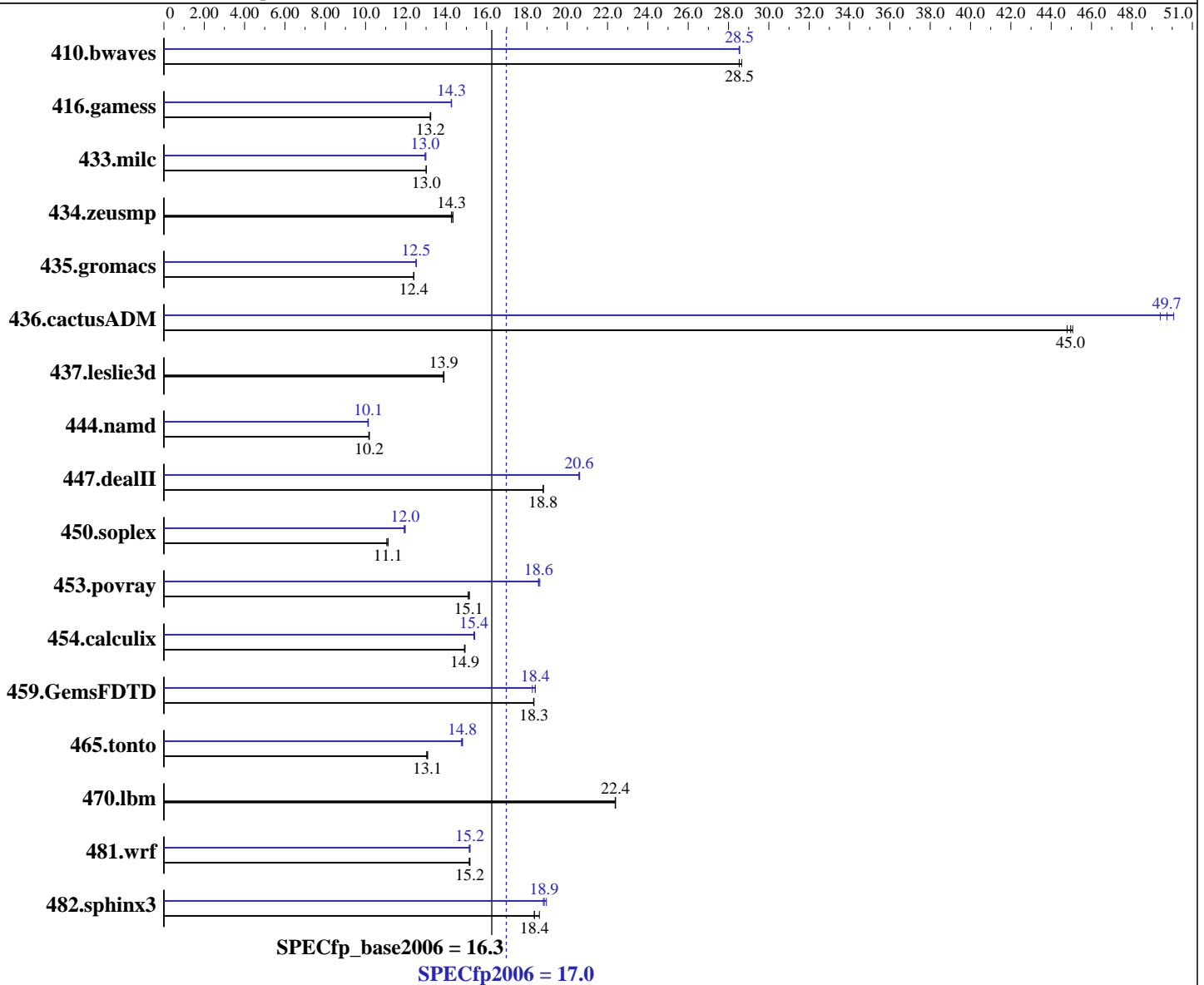$SPECfp^{®}2006 =$ 17.0

$SPECfp\_base2006 =$ 16.3

CPU2006 license: 9006		**Test date:** Jan-2009
Test sponsor: NEC Corporation		**Hardware Availability:** Jan-2009
Tested by: NEC Corporation		**Software Availability:** Nov-2008

0 2.00 4.00 6.00 8.00 10.0 12.0 14.0 16.0 18.0 20.0 22.0 24.0 26.0 28.0 30.0 32.0 34.0 36.0 38.0 40.0 42.0 44.0 46.0 48.0 51.0

410.bwaves 28.5 / 28.5

416.gamess 14.3 / 13.2

433.milc 13.0 / 13.0

434.zeusmp 14.3

435.gromacs 12.5 / 12.4

436.cactusADM 49.7 / 45.0

437.leslie3d 13.9

444.namd 10.1 / 10.2

447.dealII 20.6 / 18.8

450.soplex 12.0 / 11.1

453.povray 18.6 / 15.1

454.calculix 15.4 / 14.9

459.GemsFDTD 18.4 / 18.3

465.tonto 14.8 / 13.1

470.lbm 22.4

481.wrf 15.2 / 15.2

482.sphinx3 18.9 / 18.4

SPECfp_base2006 = 16.3

SPECfp2006 = 17.0

Hardware

CPU Name:	Intel Xeon L5215
CPU Characteristics:	1066 MHz system bus
CPU MHz:	1867
FPU:	Integrated
CPU(s) enabled:	4 cores, 2 chips, 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) SP2, Kernel 2.6.16.60-0.21-smp
Compiler:	Intel C++ and Fortran Compiler 11.0 for Linux Build 20081105 Package ID: l_cproc_p_11.0.074, l_fproc_p_11.0.074
Auto Parallel:	Yes
File System:	ReiserFS
System State:	Run level 3 (multi-user)
Base Pointers:	64-bit

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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 GB SATAII, 7200 RPM
Other Hardware:	None

Peak Pointers:	32/64-bit
Other Software:	Binutils 2.18.50.0.7.20080502

Results Table

Benchmark	Base Seconds	Base Ratio	Base Seconds	Base Ratio	Base Seconds	Base Ratio	Peak Seconds	Peak Ratio	Peak Seconds	Peak Ratio	Peak Seconds	Peak Ratio
410.bwaves	476	28.5	**476**	**28.5**	474	28.7	**476**	**28.5**	476	28.5	476	28.5
416.gamess	1482	13.2	1480	13.2	**1482**	**13.2**	1374	14.2	**1373**	**14.3**	1373	14.3
433.milc	705	13.0	706	13.0	**706**	**13.0**	709	13.0	706	13.0	**708**	**13.0**
434.zeusmp	635	14.3	**638**	**14.3**	638	14.3	635	14.3	**638**	**14.3**	638	14.3
435.gromacs	**576**	**12.4**	576	12.4	577	12.4	**571**	**12.5**	571	12.5	571	12.5
436.cactusADM	267	44.8	**266**	**45.0**	265	45.1	242	49.4	**240**	**49.7**	239	50.1
437.leslie3d	**678**	**13.9**	677	13.9	678	13.9	**678**	**13.9**	677	13.9	678	13.9
444.namd	787	10.2	**788**	**10.2**	789	10.2	791	10.1	**791**	**10.1**	793	10.1
447.dealII	608	18.8	609	18.8	**608**	**18.8**	555	20.6	**556**	**20.6**	556	20.6
450.soplex	**751**	**11.1**	750	11.1	755	11.0	697	12.0	**697**	**12.0**	700	11.9
453.povray	351	15.2	**352**	**15.1**	353	15.1	286	18.6	285	18.6	**286**	**18.6**
454.calculix	**553**	**14.9**	554	14.9	552	14.9	535	15.4	537	15.4	**536**	**15.4**
459.GemsFDTD	**578**	**18.3**	579	18.3	578	18.4	576	18.4	**576**	**18.4**	581	18.3
465.tonto	753	13.1	**753**	**13.1**	755	13.0	**665**	**14.8**	665	14.8	667	14.8
470.lbm	614	22.4	**614**	**22.4**	613	22.4	614	22.4	**614**	**22.4**	613	22.4
481.wrf	736	15.2	**736**	**15.2**	738	15.1	736	15.2	**736**	**15.2**	738	15.1
482.sphinx3	1047	18.6	1061	18.4	**1061**	**18.4**	1036	18.8	1027	19.0	**1033**	**18.9**

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
OMP_NUM_THREADS set to number of cores
KMP_AFFINITY set to "physical,0"
KMP_STACKSIZE set to 200M
```

Platform Notes

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

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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:
    -xSSE4.1 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch

C++ benchmarks:
    -xSSE4.1 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch

Fortran benchmarks:
    -xSSE4.1 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch

Benchmarks using both Fortran and C:
    -xSSE4.1 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch

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Peak Compiler Invocation

C benchmarks (except as noted below):
    icc

    482.sphinx3: /opt/intel/Compiler/11.0/074/bin/ia32/icc
            -L/opt/intel/Compiler/11.0/074/ipp/ia32/lib
            -I/opt/intel/Compiler/11.0/074/ipp/ia32/include

C++ benchmarks (except as noted below):
    icpc

    450.soplex: /opt/intel/Compiler/11.0/074/bin/ia32/icpc
            -L/opt/intel/Compiler/11.0/074/ipp/ia32/lib
            -I/opt/intel/Compiler/11.0/074/ipp/ia32/include

Fortran benchmarks:
    ifort

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
     437.leslie3d: -DSPEC_CPU_LP64
        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
         470.lbm: -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) -xSSE4.1 -ipo -O3
            -no-prec-div -static -fno-alias

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Peak Optimization Flags (Continued)

470.lbm: basepeak = yes

482.sphinx3: -xSSE4.1 -ipo -O3 -no-prec-div -static -unroll2

C++ benchmarks:

444.namd: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
-no-prec-div -static -fno-alias -auto-ilp32

447.dealII: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
-no-prec-div -static -unroll2 -ansi-alias -scalar-rep-
-opt-prefetch

450.soplex: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
-no-prec-div -static -opt-malloc-options=3

453.povray: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
-no-prec-div -static -unroll4 -ansi-alias

Fortran benchmarks:

410.bwaves: -xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch
-parallel

416.gamess: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
-no-prec-div -static -unroll2 -Ob0 -ansi-alias
-scalar-rep-

434.zeusmp: basepeak = yes

437.leslie3d: basepeak = yes

459.GemsFDTD: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
-no-prec-div -static -unroll2 -Ob0 -opt-prefetch
-parallel

465.tonto: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
-no-prec-div -static -unroll4 -auto

Benchmarks using both Fortran and C:

435.gromacs: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
-no-prec-div -static -opt-prefetch -auto-ilp32

436.cactusADM: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
-no-prec-div -static -unroll2 -opt-prefetch -parallel
-auto-ilp32

454.calculix: -xSSE4.1 -ipo -O3 -no-prec-div -static -auto-ilp32

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Peak Optimization Flags (Continued)

481.wrf: -xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch
-parallel -auto-ilp32

The flags files that were used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Intel-ic11.0-fp-linux64-revE.20090710.html
http://www.spec.org/cpu2006/flags/NEC-Intel-Linux-Settings-flags-revB.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic11.0-fp-linux64-revE.20090710.xml
http://www.spec.org/cpu2006/flags/NEC-Intel-Linux-Settings-flags-revB.xml

For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

Tested with SPEC CPU2006 v1.1.
Report generated on Tue Jul 22 23:00:39 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 3 March 2009.