SPEC® CFP2006 Result
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NEC Corporation

Express5800/B120b-Lw
(Intel Xeon L5520)

$SPECfp^{®}2006 =$ 35.9

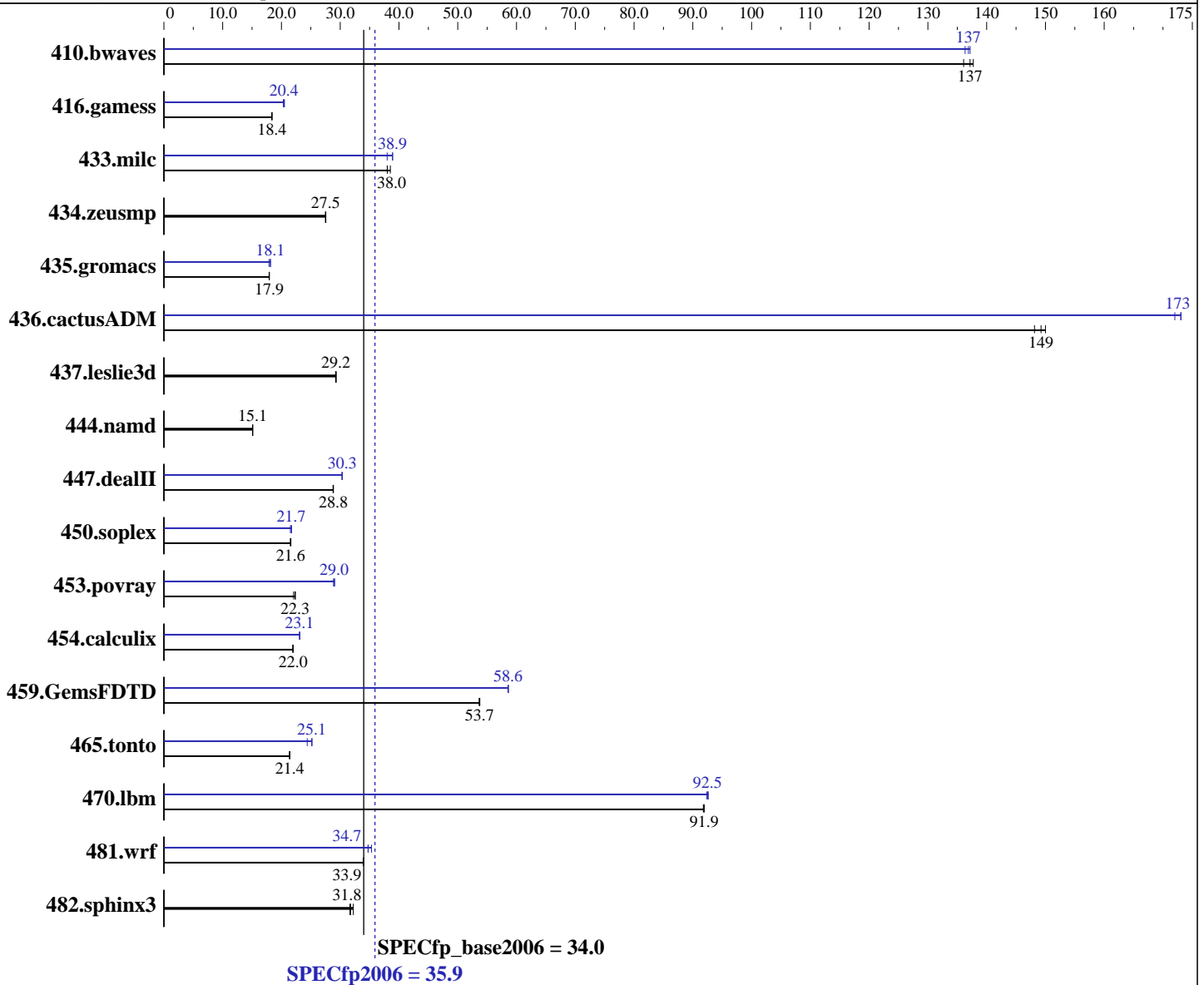$SPECfp\_base2006 =$ 34.0

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

Test date: Apr-2010
Hardware Availability: Jan-2010
Software Availability: Dec-2009

SPECfp_base2006 = 34.0
SPECfp2006 = 35.9

Benchmark	base	peak
410.bwaves	137	137
416.gamess	18.4	20.4
433.milc	38.0	38.9
434.zeusmp	27.5	
435.gromacs	17.9	18.1
436.cactusADM	149	173
437.leslie3d	29.2	
444.namd	15.1	
447.dealII	28.8	30.3
450.soplex	21.6	21.7
453.povray	22.3	29.0
454.calculix	22.0	23.1
459.GemsFDTD	53.7	58.6
465.tonto	21.4	25.1
470.lbm	91.9	92.5
481.wrf	33.9	34.7
482.sphinx3	31.8	

Hardware

CPU Name: Intel Xeon L5520
CPU Characteristics: Intel Turbo Boost Technology up to 2.53 GHz
CPU MHz: 2267
FPU: Integrated
CPU(s) enabled: 8 cores, 2 chips, 4 cores/chip
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

Continued on next page

Software

Operating System: SUSE Linux Enterprise Server 11 (x86_64), Kernel 2.6.27.19-5-default
Compiler: Intel C++ and Fortran Professional Compiler for IA32 and Intel 64, Version 11.1
Build 20091130 Package ID: l_cproc_p_11.1.064, l_cprof_p_11.1.064
Auto Parallel: Yes
File System: ext3
System State: Run level 3 (multi-user)

Continued on next page

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L3 Cache:	8 MB I+D on chip per chip	Base Pointers:	64-bit
Other Cache:	None	Peak Pointers:	32/64-bit
Memory:	48 GB (6 x 8 GB PC3-10600R, 2 rank, CL9, ECC, running at 1066 MHz)	Other Software:	None
Disk Subsystem:	1x160 GB SATA, 7200 RPM		
Other Hardware:	None		

Results Table

	Base						Peak					
Benchmark	**Seconds**	**Ratio**	**Seconds**	**Ratio**	**Seconds**	**Ratio**	**Seconds**	**Ratio**	**Seconds**	**Ratio**	**Seconds**	**Ratio**
410.bwaves	**99.1**	**137**	99.9	136	98.7	138	99.1	137	99.7	136	**99.3**	**137**
416.gamess	1066	18.4	**1065**	**18.4**	1065	18.4	955	20.5	963	20.3	**958**	**20.4**
433.milc	**241**	**38.0**	238	38.5	242	38.0	**236**	**38.9**	236	38.9	242	38.0
434.zeusmp	331	27.5	330	27.6	**331**	**27.5**	331	27.5	330	27.6	**331**	**27.5**
435.gromacs	399	17.9	398	17.9	**398**	**17.9**	**394**	**18.1**	399	17.9	394	18.1
436.cactusADM	**80.1**	**149**	80.7	148	79.7	150	69.0	173	69.5	172	**69.1**	**173**
437.leslie3d	322	29.2	**321**	**29.2**	320	29.3	322	29.2	**321**	**29.2**	320	29.3
444.namd	531	15.1	531	15.1	**531**	**15.1**	531	15.1	531	15.1	**531**	**15.1**
447.dealII	**397**	**28.8**	398	28.8	397	28.8	377	30.3	377	30.3	**377**	**30.3**
450.soplex	**387**	**21.6**	388	21.5	386	21.6	**385**	**21.7**	384	21.7	387	21.5
453.povray	238	22.4	**238**	**22.3**	241	22.1	**183**	**29.0**	183	29.0	184	28.9
454.calculix	376	21.9	375	22.0	**376**	**22.0**	357	23.1	**357**	**23.1**	357	23.1
459.GemsFDTD	198	53.6	197	53.8	**198**	**53.7**	**181**	**58.6**	181	58.6	181	58.6
465.tonto	459	21.4	**460**	**21.4**	461	21.4	403	24.4	390	25.2	**391**	**25.1**
470.lbm	150	91.8	**149**	**91.9**	149	91.9	**149**	**92.5**	149	92.4	148	92.6
481.wrf	329	33.9	**329**	**33.9**	329	34.0	316	35.3	**321**	**34.7**	322	34.7
482.sphinx3	605	32.2	**613**	**31.8**	616	31.6	605	32.2	**613**	**31.8**	616	31.6

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

Platform Notes

    BIOS setting:
    Hyper-Threading Technology : Disabled

General Notes

    OMP_NUM_THREADS set to number of cores
    KMP_AFFINITY set to granularity=fine,scatter
    KMP_STACKSIZE set to 200M

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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:
        -xSSE4.2 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch

C++ benchmarks:
        -xSSE4.2 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch

Fortran benchmarks:
        -xSSE4.2 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch

Benchmarks using both Fortran and C:
        -xSSE4.2 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch

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

    470.lbm: `-xSSE4.2`(pass 2) `-prof-gen`(pass 1) `-ipo`(pass 2) `-O3`(pass 2)
        `-no-prec-div`(pass 2) `-static`(pass 2) `-prof-use`(pass 2)
        `-parallel -ansi-alias -auto-ilp32`

    482.sphinx3: `basepeak = yes`

C++ benchmarks:

    444.namd: `basepeak = yes`

    447.dealII: `-xSSE4.2`(pass 2) `-prof-gen`(pass 1) `-ipo`(pass 2) `-O3`(pass 2)
        `-no-prec-div`(pass 2) `-static`(pass 2) `-prof-use`(pass 2)
        `-unroll2 -ansi-alias -scalar-rep- -auto-ilp32`

    450.soplex: `-xSSE4.2`(pass 2) `-prof-gen`(pass 1) `-ipo`(pass 2) `-O3`(pass 2)
        `-no-prec-div`(pass 2) `-static`(pass 2) `-prof-use`(pass 2)
        `-opt-malloc-options=3 -auto-ilp32`

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

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Peak Optimization Flags (Continued)

Fortran benchmarks:

```
410.bwaves: -xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch
            -parallel

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

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) -static(pass 2) -prof-use(pass 2)
            -unroll2 -Ob0 -opt-prefetch -parallel

465.tonto: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
            -no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
            -inline-calloc -opt-malloc-options=3 -auto -unroll4
```

Benchmarks using both Fortran and C:

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

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

454.calculix: -xSSE4.2 -ipo -O3 -no-prec-div -static -auto-ilp32

481.wrf: Same as 454.calculix
```

The flags file that was used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Intel-ic11.1-linux64-revE.20100609.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/Intel-ic11.1-linux64-revE.20100609.xml

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

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