



SPEC[®] CFP2006 Result

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NEC Corporation

Express5800/iR110a-1
(Intel Xeon L3360)

SPECfp[®]2006 = **24.3**

SPECfp_base2006 = **23.5**

CPU2006 license: 9006

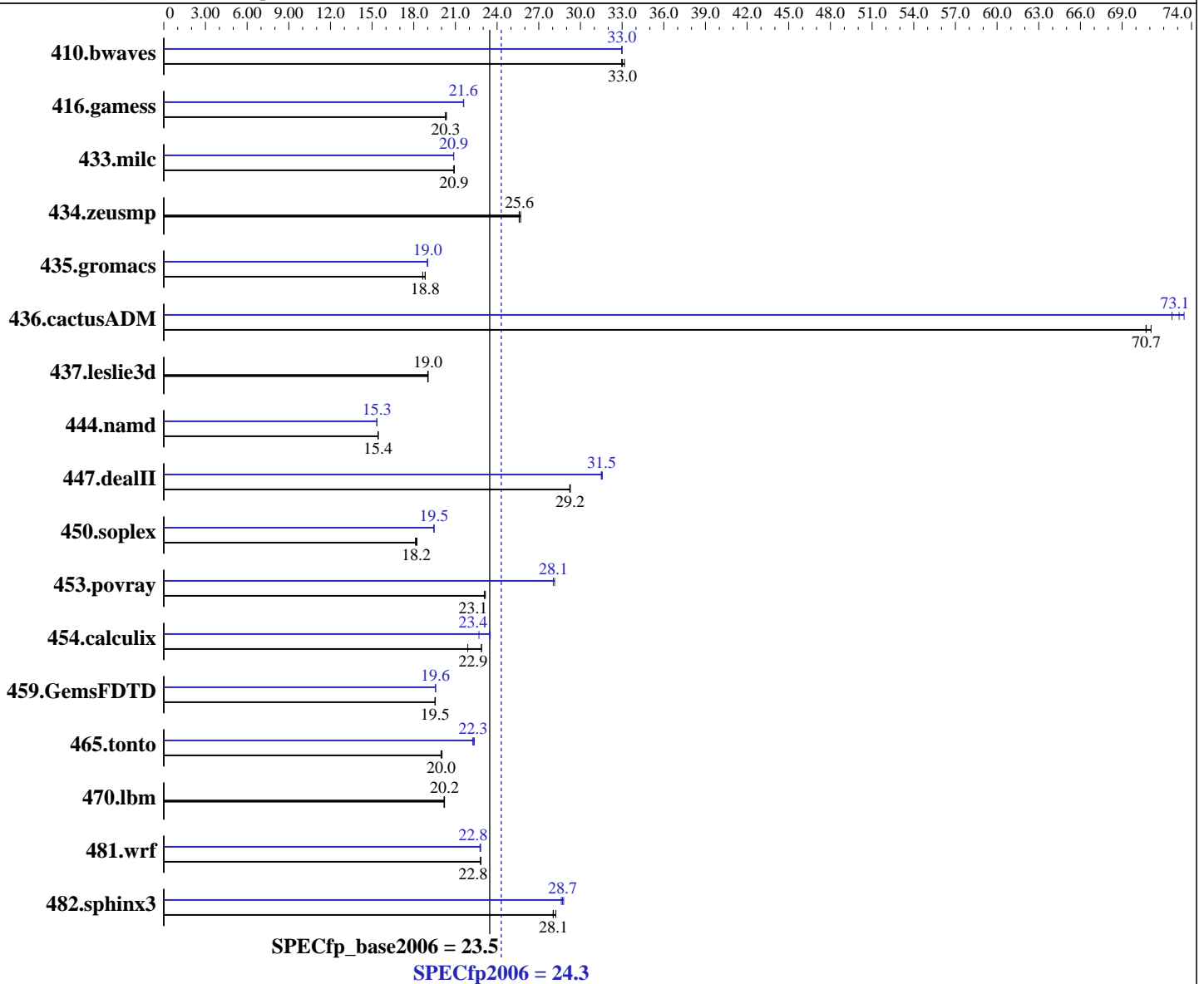
Test sponsor: NEC Corporation

Tested by: NEC Corporation

Test date: Sep-2009

Hardware Availability: May-2009

Software Availability: Nov-2008



Hardware

CPU Name: Intel Xeon L3360
 CPU Characteristics: 1333 MHz system bus
 CPU MHz: 2833
 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: 12 MB I+D on chip per chip, 6 MB shared / 2 cores

Continued on next page

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 Professional 11.0 for Linux
 Build 20080930 Package ID: l_cproc_p_11.0.069, l_fproc_p_11.0.069
 Auto Parallel: Yes
 File System: ReiserFS
 System State: Run level 3 (multi-user)

Continued on next page



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L3 Cache: None
Other Cache: None
Memory: 8 GB (4x2 GB PC2-6400E, 2 rank, CL6-6-6, ECC)
Disk Subsystem: 1x160 GB SATA2, 7200 RPM
Other Hardware: None

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

Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	410	33.2	412	33.0	<u>412</u>	<u>33.0</u>	412	33.0	412	33.0	<u>412</u>	<u>33.0</u>
416.gamess	965	20.3	962	20.4	<u>965</u>	<u>20.3</u>	908	21.6	906	21.6	<u>907</u>	<u>21.6</u>
433.milc	439	20.9	<u>439</u>	<u>20.9</u>	440	20.9	440	20.9	<u>440</u>	<u>20.9</u>	440	20.9
434.zeusmp	<u>356</u>	<u>25.6</u>	354	25.7	356	25.6	<u>356</u>	<u>25.6</u>	354	25.7	356	25.6
435.gromacs	383	18.6	379	18.8	<u>380</u>	<u>18.8</u>	376	19.0	<u>376</u>	<u>19.0</u>	376	19.0
436.cactusADM	169	70.7	<u>169</u>	<u>70.7</u>	168	71.1	163	73.5	<u>163</u>	<u>73.1</u>	165	72.6
437.leslie3d	<u>494</u>	<u>19.0</u>	494	19.0	495	19.0	<u>494</u>	<u>19.0</u>	494	19.0	495	19.0
444.namd	520	15.4	<u>520</u>	<u>15.4</u>	520	15.4	523	15.3	<u>523</u>	<u>15.3</u>	523	15.3
447.dealII	<u>391</u>	<u>29.2</u>	391	29.3	391	29.2	362	31.6	<u>363</u>	<u>31.5</u>	363	31.5
450.soplex	458	18.2	<u>459</u>	<u>18.2</u>	460	18.1	429	19.5	<u>429</u>	<u>19.5</u>	429	19.4
453.povray	230	23.2	<u>230</u>	<u>23.1</u>	231	23.1	190	28.0	189	28.1	<u>190</u>	<u>28.1</u>
454.calculix	377	21.9	<u>361</u>	<u>22.9</u>	361	22.9	364	22.7	351	23.5	<u>352</u>	<u>23.4</u>
459.GemsFDTD	543	19.5	543	19.6	<u>543</u>	<u>19.5</u>	<u>542</u>	<u>19.6</u>	542	19.6	542	19.6
465.tonto	491	20.0	<u>492</u>	<u>20.0</u>	493	20.0	440	22.4	<u>441</u>	<u>22.3</u>	443	22.2
470.lbm	681	20.2	<u>680</u>	<u>20.2</u>	680	20.2	681	20.2	<u>680</u>	<u>20.2</u>	680	20.2
481.wrf	490	22.8	<u>490</u>	<u>22.8</u>	490	22.8	490	22.8	491	22.8	<u>490</u>	<u>22.8</u>
482.sphinx3	<u>695</u>	<u>28.1</u>	691	28.2	695	28.0	677	28.8	681	28.6	<u>679</u>	<u>28.7</u>

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

Base Compiler Invocation

C benchmarks:
icc

C++ benchmarks:
icpc

Continued on next page



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Base Compiler Invocation (Continued)

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

Peak Compiler Invocation

C benchmarks (except as noted below):

icc

Continued on next page



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Peak Compiler Invocation (Continued)

```
482.sphinx3: /opt/intel/Compiler/11.0/069/bin/ia32/icc
             -L/opt/intel/Compiler/11.0/069/ipp/ia32/lib
             -I/opt/intel/Compiler/11.0/069/ipp/ia32/include
```

C++ benchmarks (except as noted below):

icpc

```
450.soplex: /opt/intel/Compiler/11.0/069/bin/ia32/icpc
            -L/opt/intel/Compiler/11.0/069/ipp/ia32/lib
            -I/opt/intel/Compiler/11.0/069/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.deallI: -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
```

```
470.lbm: basepeak = yes
```

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

Continued on next page



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Peak Optimization Flags (Continued)

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.deallI: -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

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



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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-revH.html>

<http://www.spec.org/cpu2006/flags/NEC-Intel-Linux-Settings-flags-revE.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-revH.xml>

<http://www.spec.org/cpu2006/flags/NEC-Intel-Linux-Settings-flags-revE.xml>

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