SPEC® CFP2006 Result

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NEC Corporation

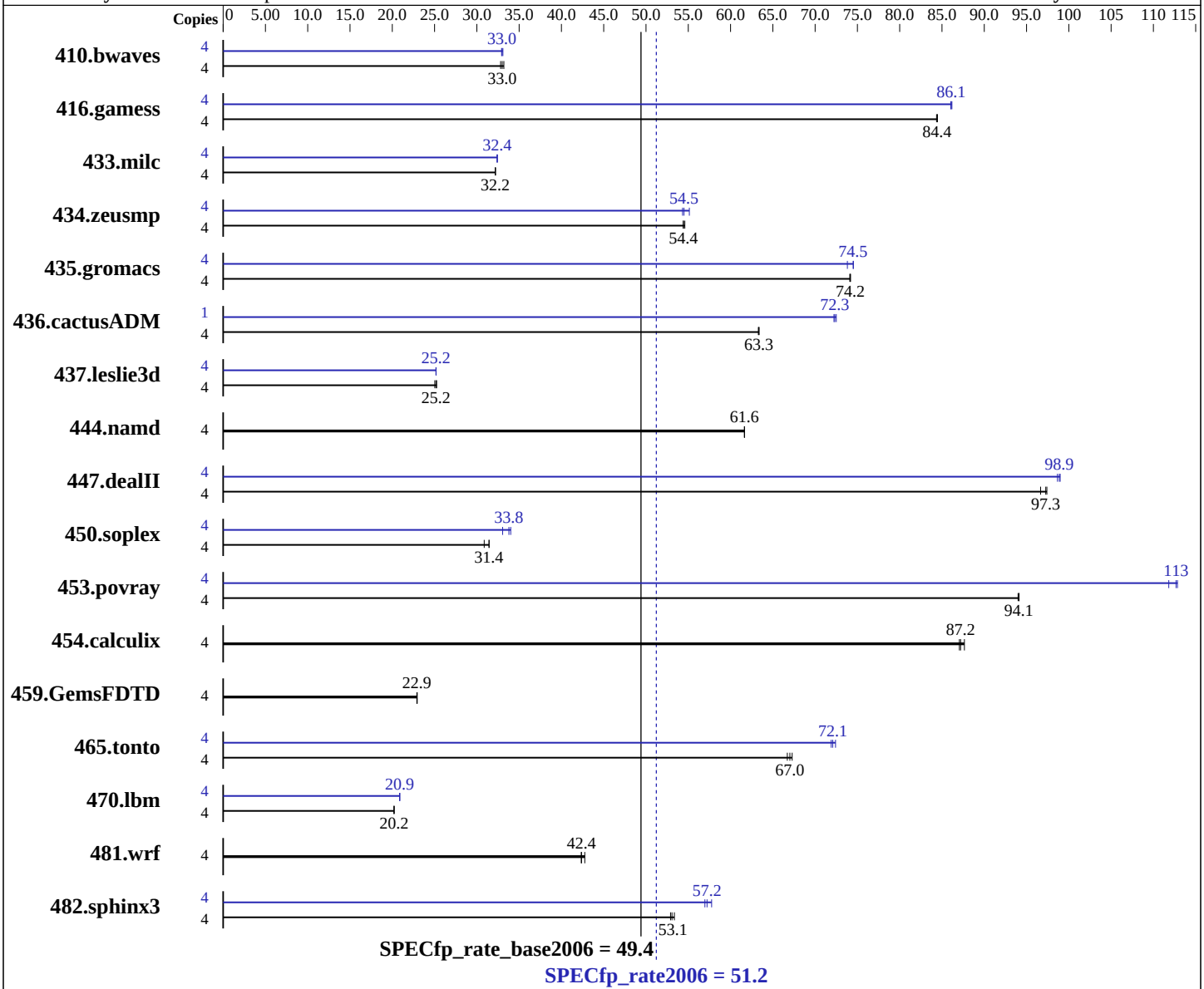
Express5800/R110a-1
(Intel Xeon X3360)

SPECfp®_rate2006 = 51.2

SPECfp_rate_base2006 = 49.4

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

Test date: Jul-2009
Hardware Availability: May-2009
Software Availability: Nov-2008



Hardware

CPU Name:	Intel Xeon X3360
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

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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 Professional 11.0 for Linux Build 20080930 Package ID: l_cproc_p_11.0.069, l_cprof_p_11.0.069
Auto Parallel:	Yes
File System:	ReiserFS
System State:	Run level 3 (multi-user)

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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						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	4	1657	32.8	1638	33.2	**1647**	**33.0**	4	**1648**	**33.0**	1643	33.1	1651	32.9
416.gamess	4	927	84.5	**928**	**84.4**	928	84.4	4	**910**	**86.1**	910	86.0	909	86.2
433.milc	4	1141	32.2	1141	32.2	**1141**	**32.2**	4	1133	32.4	**1133**	**32.4**	1133	32.4
434.zeusmp	4	**669**	**54.4**	667	54.6	669	54.4	4	670	54.3	660	55.1	**668**	**54.5**
435.gromacs	4	**385**	**74.2**	385	74.2	385	74.1	4	383	74.5	**383**	**74.5**	387	73.8
436.cactusADM	4	754	63.4	**755**	**63.3**	755	63.3	1	165	72.5	165	72.2	**165**	**72.3**
437.leslie3d	4	**1494**	**25.2**	1489	25.2	1502	25.0	4	1494	25.2	**1493**	**25.2**	1493	25.2
444.namd	4	520	61.6	520	61.6	**520**	**61.6**	4	520	61.6	520	61.6	**520**	**61.6**
447.dealII	4	**470**	**97.3**	470	97.4	473	96.7	4	462	99.0	**463**	**98.9**	464	98.7
450.soplex	4	1081	30.9	**1061**	**31.4**	1061	31.4	4	1009	33.1	**987**	**33.8**	981	34.0
453.povray	4	226	94.0	**226**	**94.1**	226	94.1	4	190	112	189	113	**189**	**113**
454.calculix	4	376	87.7	**378**	**87.2**	379	87.1	4	376	87.7	**378**	**87.2**	379	87.1
459.GemsFDTD	4	1849	22.9	**1852**	**22.9**	1852	22.9	4	1849	22.9	**1852**	**22.9**	1852	22.9
465.tonto	4	590	66.7	585	67.3	**587**	**67.0**	4	544	72.4	547	71.9	**546**	**72.1**
470.lbm	4	2720	20.2	**2720**	**20.2**	2719	20.2	4	**2632**	**20.9**	2633	20.9	2632	20.9
481.wrf	4	1045	42.8	1055	42.3	**1054**	**42.4**	4	1045	42.8	1055	42.3	**1054**	**42.4**
482.sphinx3	4	1461	53.4	1474	52.9	**1469**	**53.1**	4	1350	57.8	1369	57.0	**1362**	**57.2**

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

Submit Notes

```
The config file option 'submit' was used.
 taskset was used to bind processes to cores except
 for 436.cactusADM peak
```

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 64M
```

Platform Notes

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

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 -opt-prefetch

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

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Base Optimization Flags (Continued)

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

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

Peak Compiler Invocation

C benchmarks (except as noted below):
icc

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 (except as noted below):
ifort

437.leslie3d: /opt/intel/Compiler/11.0/069/bin/ia32/ifort
-L/opt/intel/Compiler/11.0/069/ipp/ia32/lib
-I/opt/intel/Compiler/11.0/069/ipp/ia32/include

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
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

Continued on next page

Peak Portability Flags (Continued)

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

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

C++ benchmarks:

444.namd: basepeak = yes

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

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

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

437.leslie3d: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
-no-prec-div -static -opt-malloc-options=3 -opt-prefetch

459.GemsFDTD: basepeak = yes

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

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Peak Optimization Flags (Continued)

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: `basepeak = yes`

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-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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For other inquiries, please contact webmaster@spec.org.

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