SPEC® CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Intel Corporation

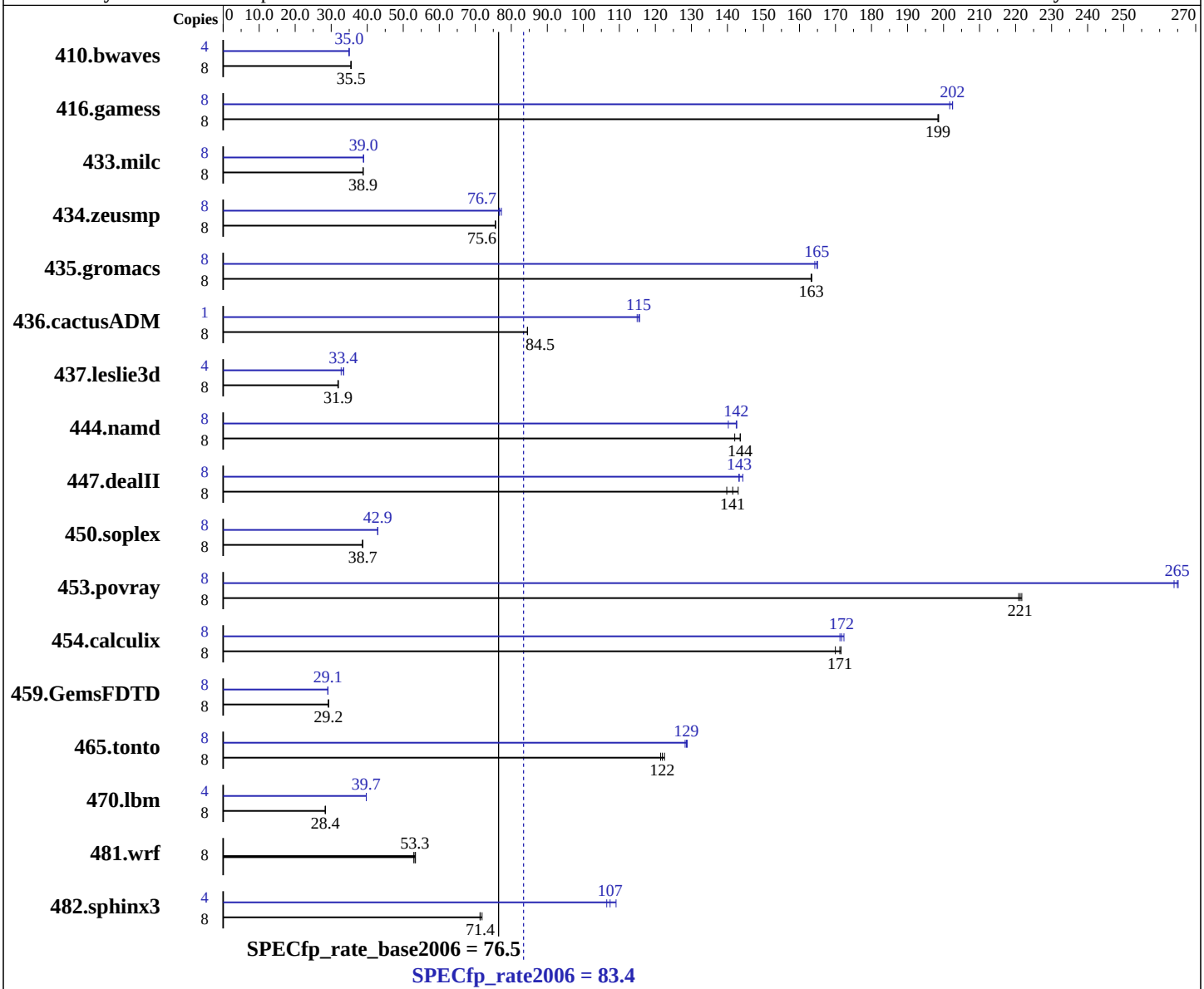
Supermicro X7DB8+ (Intel Xeon X5470)

SPECfp®_rate2006 = 83.4

SPECfp_rate_base2006 = 76.5

CPU2006 license: 13
Test sponsor: Intel Corporation
Tested by: Intel Corporation

Test date: Sep-2008
Hardware Availability: Sep-2008
Software Availability: Nov-2008



Hardware

CPU Name:	Intel Xeon X5470
CPU Characteristics:	
CPU MHz:	3333
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:	12 MB I+D on chip per chip, 6 MB shared / 2 cores

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Software

Operating System:	SuSe Linux SLES10 SP2
Compiler:	Intel C++ and Fortran Compiler 11.0 for Linux Build 20080730 Package ID: l_cproc_b_11.0.042, l_fproc_b_11.0.042
Auto Parallel:	Yes
File System:	ReiserFS
System State:	Run level 3 (multi-user)
Base Pointers:	64-bit
Peak Pointers:	32/64-bit

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L3 Cache: None
Other Cache: None
Memory: 16 GB (8x 2GB Samsung 5300F, CL5-5-5, 2 rank, ECC)
Disk Subsystem: 36.4 GB HP SCSI, 15K RPM
Other Hardware: None

Other Software: Microquill SmartHeap V8.1
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	8	**3061**	**35.5**	3058	35.6	3068	35.4	4	**1553**	**35.0**	1553	35.0	1557	34.9
416.gamess	8	789	198	**789**	**199**	789	199	8	**774**	**202**	777	202	773	203
433.milc	8	1890	38.9	1890	38.9	**1890**	**38.9**	8	1884	39.0	1884	39.0	**1884**	**39.0**
434.zeusmp	8	963	75.6	**963**	**75.6**	963	75.6	8	942	77.3	**949**	**76.7**	950	76.6
435.gromacs	8	350	163	350	163	**350**	**163**	8	**346**	**165**	346	165	348	164
436.cactusADM	8	1132	84.5	1131	84.5	**1131**	**84.5**	1	104	115	**104**	**115**	103	116
437.leslie3d	8	2351	32.0	**2354**	**31.9**	2361	31.8	4	**1125**	**33.4**	1124	33.5	1148	32.8
444.namd	8	**447**	**144**	447	144	452	142	8	450	143	457	140	**450**	**142**
447.dealII	8	**647**	**141**	655	140	640	143	8	639	143	**639**	**143**	634	144
450.soplex	8	1721	38.8	**1722**	**38.7**	1725	38.7	8	1555	42.9	1554	42.9	**1554**	**42.9**
453.povray	8	193	221	**192**	**221**	192	222	8	161	265	**161**	**265**	161	264
454.calculix	8	**386**	**171**	388	170	385	172	8	383	172	**384**	**172**	385	171
459.GemsFDTD	8	2902	29.2	**2902**	**29.2**	2904	29.2	8	**2917**	**29.1**	2915	29.1	2923	29.0
465.tonto	8	**646**	**122**	648	121	642	123	8	614	128	611	129	**612**	**129**
470.lbm	8	3874	28.4	3875	28.4	**3875**	**28.4**	4	1383	39.7	**1383**	**39.7**	1383	39.7
481.wrf	8	**1678**	**53.3**	1688	52.9	1673	53.4	8	**1678**	**53.3**	1688	52.9	1673	53.4
482.sphinx3	8	2169	71.9	**2185**	**71.4**	2187	71.3	4	732	106	715	109	**726**	**107**

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.
```

General Notes

```
All benchmarks compiled in 64-bit mode except 437.leslie3d, 450.soplex
and 482.sphinx3, at peak, are compiled in 32-bit mode
taskset was used to bind processes to cores except
for 436.cactusADM peak
OMP_NUM_THREADS set to number of processors
KMP_AFFINITY set to "physical,0"
KMP_STACKSIZE set to 64M
Hardware Prefetcher: 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

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/11.0/042/bin/ia32/icc -L/opt/intel/Compiler/11.0/042/ipp/ia32/lib -I/opt/intel/Compiler/11.0/042/ipp/ia32/include`

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

450.soplex: `/opt/intel/Compiler/11.0/042/bin/ia32/icpc -L/opt/intel/Compiler/11.0/042/ipp/ia32/lib -I/opt/intel/Compiler/11.0/042/ipp/ia32/include`

Fortran benchmarks (except as noted below):
```
ifort
```

437.leslie3d: `/opt/intel/Compiler/11.0/042/bin/ia32/ifort -L/opt/intel/Compiler/11.0/042/ipp/ia32/lib -I/opt/intel/Compiler/11.0/042/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`
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:

Continued on next page

Peak Optimization Flags (Continued)

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: -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-

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

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

Continued on next page

Peak Optimization Flags (Continued)

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

481.wrf: `basepeak = yes`

The flags file that was used to format this result can be browsed at
`http://www.spec.org/cpu2006/flags/Intel-ic11.0-fp-linux64-revA.20090713.09.html`

You can also download the XML flags source by saving the following link:
`http://www.spec.org/cpu2006/flags/Intel-ic11.0-fp-linux64-revA.20090713.09.xml`

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