SPEC® CFP2006 Result

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Intel Corporation

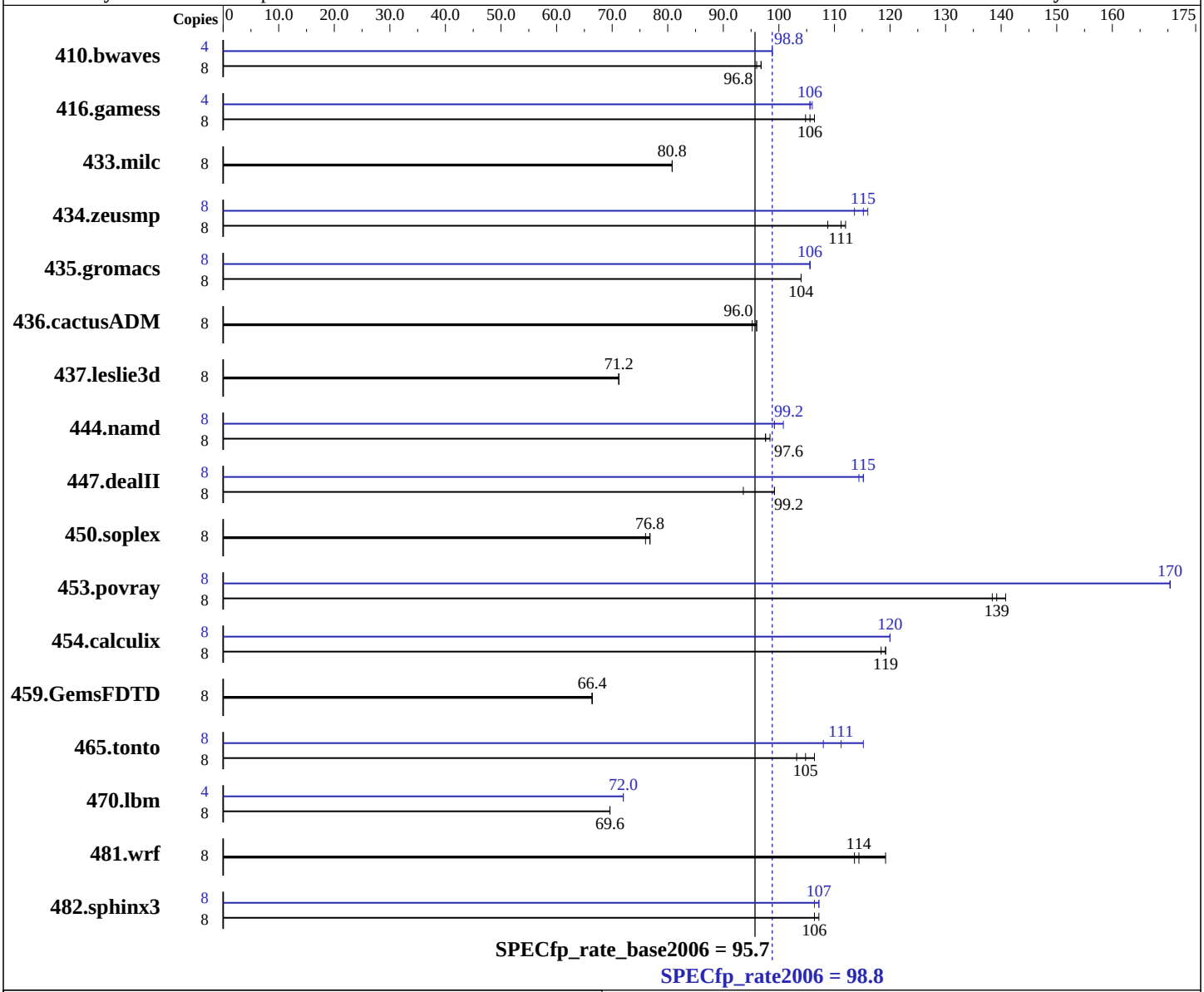
Supermicro X8DAI (Intel Xeon W3570, 3.2 GHz)

SPECfp®_rate2006 = 98.8

SPECfp_rate_base2006 = 95.7

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

Test date: Mar-2009
Hardware Availability: Mar-2009
Software Availability: Nov-2007



Hardware

CPU Name:	Intel Xeon W3570
CPU Characteristics:	Intel Turbo Boost Technology up to 3.46 GHz
CPU MHz:	3200
FPU:	Integrated
CPU(s) enabled:	4 cores, 1 chip, 4 cores/chip, 2 threads/core
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

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Software

Operating System:	Windows* XP* Professional x64 Edition SP2 Build 3790
Compiler:	Intel C++ Compiler Professional 11.0 for Intel 64 Build 20090131 Package ID: w_cproc_p_11.0.072 Intel Visual Fortran Compiler Professional 11.0 for Intel 64 Build 20090131 Package ID: w_cprof_p_11.0.072 Microsoft Visual Studio 2008 Professional SP1 (for libraries)
Auto Parallel:	No

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L3 Cache: 8 MB I+D on chip per chip
Other Cache: None
Memory: 12 GB (3 x 4GB DDR3-1333 CL9, IMHH4GP12A1F1C-13H T2)
Disk Subsystem: Western Digital Raptor WD740, 10k rpm, 74GB SATA
Other Hardware: None

File System: NTFS
System State: Default
Base Pointers: 32/64-bit
Peak Pointers: 32/64-bit
Other Software: SmartHeap Library Version 8.1 from http://www.microquill.com/

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	8	1130	96.0	**1128**	**96.8**	1128	96.8	4	**551**	**98.8**	551	98.8	551	98.8
416.gamess	8	1473	106	**1486**	**106**	1493	105	4	741	106	**740**	**106**	740	106
433.milc	8	**913**	**80.8**	913	80.8	913	80.8	8	**913**	**80.8**	913	80.8	913	80.8
434.zeusmp	8	**654**	**111**	667	109	649	112	8	629	116	**634**	**115**	641	114
435.gromacs	8	550	104	548	104	**548**	**104**	8	**541**	**106**	541	106	540	106
436.cactusADM	8	1000	95.2	997	96.0	**998**	**96.0**	8	1000	95.2	997	96.0	**998**	**96.0**
437.leslie3d	8	1058	71.2	**1057**	**71.2**	1056	71.2	8	1058	71.2	**1057**	**71.2**	1056	71.2
444.namd	8	650	98.4	658	97.6	**655**	**97.6**	8	639	101	648	99.2	**646**	**99.2**
447.dealII	8	920	99.2	**924**	**99.2**	979	93.6	8	799	114	796	115	**796**	**115**
450.soplex	8	875	76.0	**872**	**76.8**	871	76.8	8	875	76.0	**872**	**76.8**	871	76.8
453.povray	8	**306**	**139**	307	138	303	141	8	250	170	250	170	**250**	**170**
454.calculix	8	556	118	**555**	**119**	555	119	8	550	120	551	120	**551**	**120**
459.GemsFDTD	8	1277	66.4	**1278**	**66.4**	1279	66.4	8	1277	66.4	**1278**	**66.4**	1279	66.4
465.tonto	8	**751**	**105**	761	103	738	106	8	684	115	728	108	**710**	**111**
470.lbm	8	1573	69.6	**1572**	**69.6**	1572	69.6	4	764	72.0	**764**	**72.0**	764	72.0
481.wrf	8	752	119	**783**	**114**	787	114	8	752	119	**783**	**114**	787	114
482.sphinx3	8	1469	106	1458	107	**1462**	**106**	8	1468	106	1455	107	**1455**	**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.
the start command with /affinity was used to bind copies to cores
```

General Notes

```
System can be built with an extended ATX case like SuperChassis
743TQ-865B-SQ and an 885W power supply.
```

Base Compiler Invocation

C benchmarks:
```
icl -Qvc9 -Qstd=c99
```

C++ benchmarks:
```
icl -Qvc9
```

Fortran benchmarks:
```
ifort
```

Benchmarks using both Fortran and C:
```
icl -Qvc9 -Qstd=c99 ifort
```

Base Portability Flags

410.bwaves: -DSPEC_CPU_P64 /Qlowercase
416.gamess: -DSPEC_CPU_P64
433.milc: -DSPEC_CPU_P64
434.zeusmp: -DSPEC_CPU_P64
435.gromacs: -DSPEC_CPU_P64
436.cactusADM: -DSPEC_CPU_P64 -Qlowercase /assume:underscore
437.leslie3d: -DSPEC_CPU_P64
444.namd: -DSPEC_CPU_P64 /TP
447.dealII: -DSPEC_CPU_P64 -DDEAL_II_MEMBER_VAR_SPECIALIZATION_BUG
450.soplex: -DSPEC_CPU_P64
453.povray: -DSPEC_CPU_P64 -DSPEC_CPU_WINDOWS_ICL
454.calculix: -DSPEC_CPU_P64 -DSPEC_CPU_NOZMODIFIER -Qlowercase
459.GemsFDTD: -DSPEC_CPU_P64
465.tonto: -DSPEC_CPU_P64
470.lbm: -DSPEC_CPU_P64
481.wrf: -DSPEC_CPU_P64 -DSPEC_CPU_WINDOWS_ICL
482.sphinx3: -DSPEC_CPU_P64

Base Optimization Flags

C benchmarks:
```
-QxSSE4.2 -Qipo -O3 -Qprec-div- -Qopt-prefetch -Qauto-ilp32
/F1000000000
```

C++ benchmarks:
```
-QxSSE4.2 -Qipo -O3 -Qprec-div- -Qopt-prefetch -Qcxx-features
-Qauto-ilp32 /F1000000000 shlW64Mt.lib
            -link /FORCE:MULTIPLE
```

Fortran benchmarks:
```
-QxSSE4.2 -Qipo -O3 -Qprec-div- -Qopt-prefetch /F1000000000
```

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Base Optimization Flags (Continued)

Benchmarks using both Fortran and C:
`-QxSSE4.2 -Qipo -O3 -Qprec-div- -Qopt-prefetch -Qauto-ilp32 /F1000000000`

Peak Compiler Invocation

C benchmarks:
`icl -Qvc9 -Qstd=c99`

C++ benchmarks:
`icl -Qvc9`

Fortran benchmarks:
`ifort`

Benchmarks using both Fortran and C:
`icl -Qvc9 -Qstd=c99 ifort`

Peak Portability Flags

`Same as Base Portability Flags`

Peak Optimization Flags

C benchmarks:

433.milc: `basepeak = yes`

470.lbm: `-QxSSE4.2 -Qipo -O3 -Qprec-div- -Qopt-prefetch -Qauto-ilp32 /F1000000000`

482.sphinx3: `-QxSSE4.2 -Qipo -O3 -Qprec-div- -Qunroll2 -Qauto-ilp32 /F1000000000`

C++ benchmarks:

444.namd: `-QxSSE4.2`(pass 2) `-Qprof_gen`(pass 1) `-Qprof_use`(pass 2) `-Qipo -O3 -Qprec-div- -Oa -Qauto-ilp32 /F1000000000 shlW64Mt.lib -link /FORCE:MULTIPLE`

447.dealII: `-QxSSE4.2`(pass 2) `-Qprof_gen`(pass 1) `-Qprof_use`(pass 2) `-Qipo -O3 -Qprec-div- -Qunroll2 -Qansi-alias -Qscalar-rep- -Qauto-ilp32 /F1000000000 shlW64Mt.lib -link /FORCE:MULTIPLE`

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Peak Optimization Flags (Continued)

450.soplex: basepeak = yes

453.povray: -QxSSE4.2(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2) -Qipo -O3 -Qprec-div- -Qunroll4 -Qansi-alias -Qauto-ilp32 /F1000000000 shlW64Mt.lib -link /FORCE:MULTIPLE

Fortran benchmarks:

410.bwaves: -QxSSE4.2 -Qipo -O3 -Qprec-div- -Qopt-prefetch /F1000000000

416.gamess: -QxSSE4.2(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2) -Qipo -O3 -Qprec-div- -Qunroll2 -Ob0 -Qansi-alias -Qscalar-rep- /F1000000000

434.zeusmp: -QxSSE4.2(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2) -Qipo -O3 -Qprec-div- /F1000000000

437.leslie3d: basepeak = yes

459.GemsFDTD: basepeak = yes

465.tonto: -QxSSE4.2(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2) -Qipo -O3 -Qprec-div- -Qunroll4 -Qauto /F1000000000

Benchmarks using both Fortran and C:

435.gromacs: -QxSSE4.2(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2) -Qipo -O3 -Qprec-div- -Qopt-prefetch -Qauto-ilp32 /F1000000000

436.cactusADM: basepeak = yes

454.calculix: -QxSSE4.2 -Qipo -O3 -Qprec-div- -Qauto-ilp32 /F1000000000

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-winx64-revA.html
http://www.spec.org/cpu2006/flags/Intel-Winx64-Platform.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic11.0-winx64-revA.xml
http://www.spec.org/cpu2006/flags/Intel-Winx64-Platform.xml

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