SPEC® CFP2006 Result

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Intel Corporation

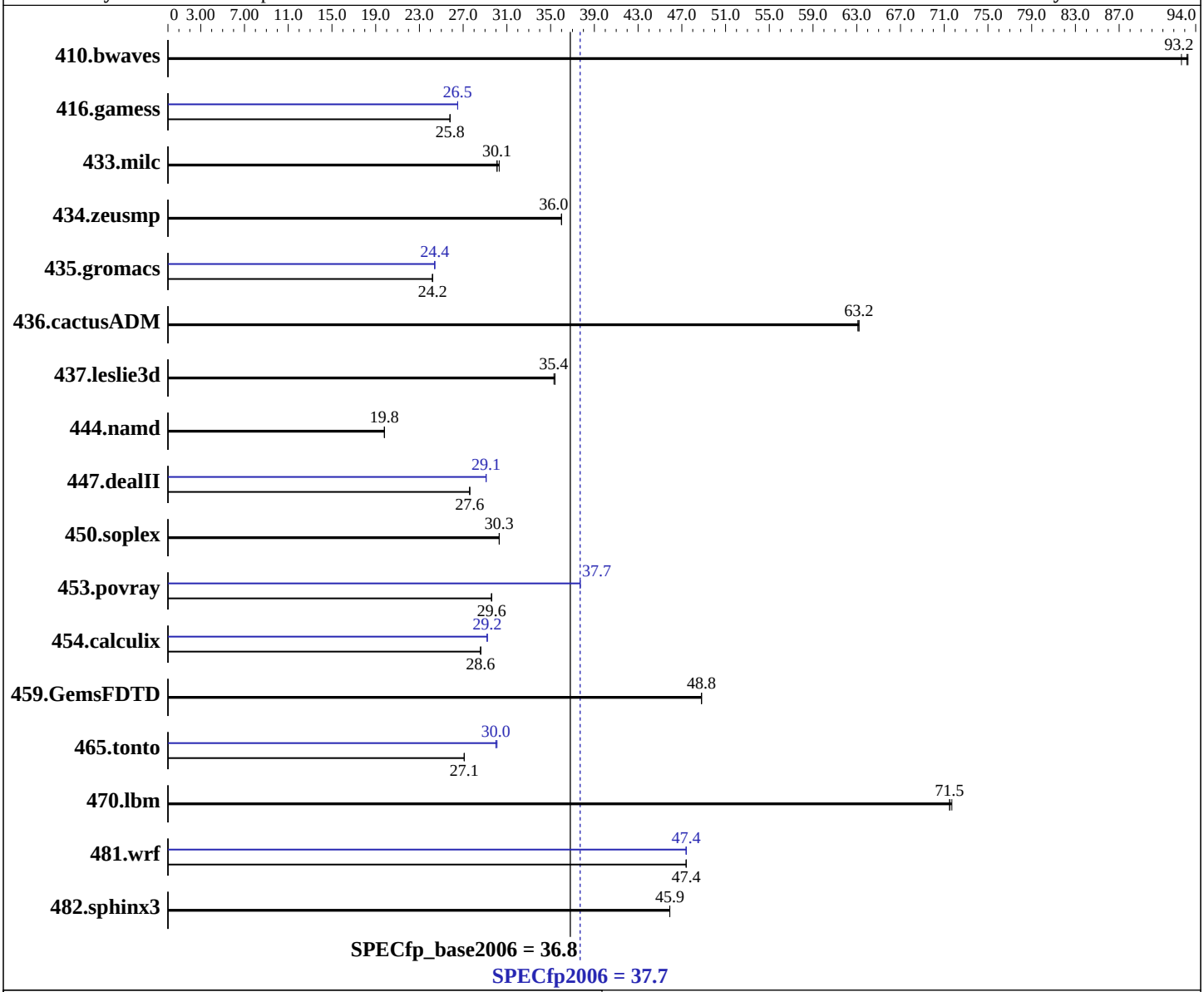
Supermicro X8DAI (Intel Xeon W3570, 3.2 GHz)

SPECfp®2006 = 37.7

SPECfp_base2006 = 36.8

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:	Yes

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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					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	147	92.7	**146**	**93.2**	146	93.3	147	92.7	**146**	**93.2**	146	93.3
416.gamess	758	25.8	**758**	**25.8**	758	25.8	739	26.5	**739**	**26.5**	739	26.5
433.milc	303	30.3	**305**	**30.1**	305	30.1	303	30.3	**305**	**30.1**	305	30.1
434.zeusmp	253	36.0	**253**	**36.0**	253	36.0	253	36.0	**253**	**36.0**	253	36.0
435.gromacs	295	24.2	**295**	**24.2**	295	24.2	292	24.4	**292**	**24.4**	292	24.4
436.cactusADM	189	63.1	189	63.2	**189**	**63.2**	189	63.1	189	63.2	**189**	**63.2**
437.leslie3d	266	35.4	**266**	**35.4**	266	35.3	266	35.4	**266**	**35.4**	266	35.3
444.namd	406	19.8	406	19.8	**406**	**19.8**	406	19.8	406	19.8	**406**	**19.8**
447.dealII	414	27.6	**414**	**27.6**	414	27.6	393	29.1	**393**	**29.1**	393	29.1
450.soplex	275	30.3	275	30.3	**275**	**30.3**	275	30.3	275	30.3	**275**	**30.3**
453.povray	**180**	**29.6**	180	29.6	180	29.6	141	37.7	**141**	**37.7**	141	37.7
454.calculix	288	28.6	288	28.6	**288**	**28.6**	283	29.2	**283**	**29.2**	283	29.2
459.GemsFDTD	217	48.8	217	48.8	**217**	**48.8**	217	48.8	217	48.8	**217**	**48.8**
465.tonto	**363**	**27.1**	364	27.1	363	27.1	328	30.0	327	30.1	**328**	**30.0**
470.lbm	192	71.7	**192**	**71.5**	192	71.5	192	71.7	**192**	**71.5**	192	71.5
481.wrf	236	47.4	**236**	**47.4**	236	47.4	**236**	**47.4**	236	47.4	236	47.4
482.sphinx3	**425**	**45.9**	425	45.9	425	45.9	**425**	**45.9**	425	45.9	425	45.9

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

General Notes

```
OMP_NUM_THREADS set to number of processors cores
KMP_AFFINITY set to granularity=fine,scatter
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
```

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Base Compiler Invocation (Continued)

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- -Qparallel -Qopt-prefetch
-Qauto-ilp32 /F1000000000

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

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

Benchmarks using both Fortran and C:
-QxSSE4.2 -Qipo -O3 -Qprec-div- -Qparallel -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: `basepeak = yes`

482.sphinx3: `basepeak = yes`

C++ benchmarks:

444.namd: `basepeak = yes`

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

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: `basepeak = yes`

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Peak Optimization Flags (Continued)

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: `basepeak = yes`

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

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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