SPEC® CFP2006 Result

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Intel Corporation

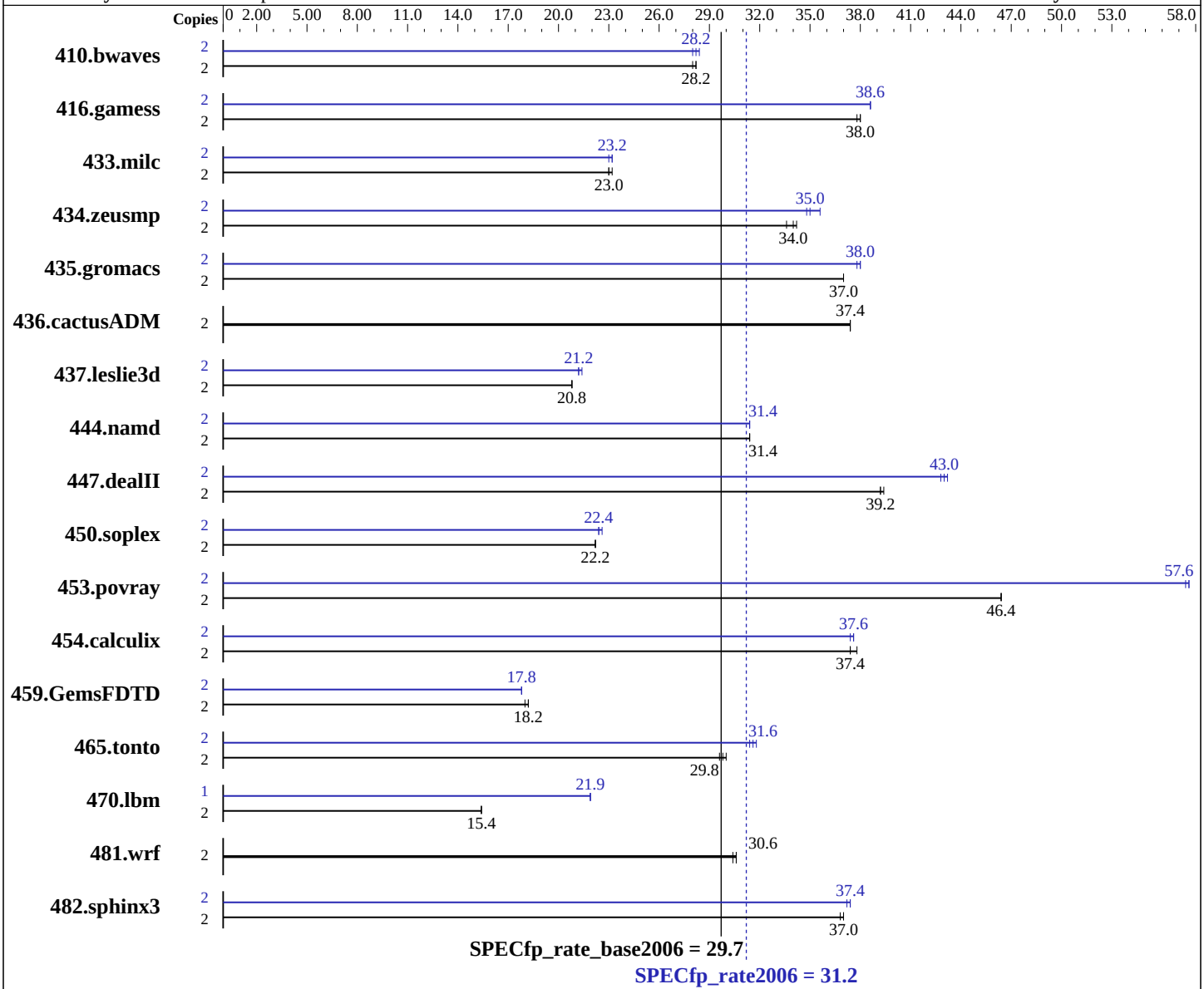
Lenovo T400 (Intel Core 2 Duo T9900)

SPECfp®_rate2006 = 31.2

SPECfp_rate_base2006 = 29.7

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

Test date: Mar-2009
Hardware Availability: Mar-2009
Software Availability: Nov-2008



Hardware

CPU Name:	Intel Core 2 Duo T9900
CPU Characteristics:	
CPU MHz:	3066
FPU:	Integrated
CPU(s) enabled:	2 cores, 1 chip, 2 cores/chip
CPU(s) orderable:	1 chip
Primary Cache:	32 KB I + 32 KB D on chip per core
Secondary Cache:	6 MB I+D on chip per chip

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Software

Operating System:	Windows XP Professional w/ SP2 (64-bit)
Compiler:	Intel C++ Compiler Professional 11.0 for IA32 Build 20080930 Package ID: w_cproc_p_11.0.054 Intel Visual Fortran Compiler Professional 11.0 for IA32 Build 20080930 Package ID: w_cprof_p_11.0.054 Microsoft Visual Studio 2008 (for libraries)
Auto Parallel:	No
File System:	NTFS

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L3 Cache: None
Other Cache: None
Memory: 2 GB (2x1GB Micron DDR3-1066 CL7)
Disk Subsystem: Hitachi HTS722020K9SA00 200GB SATA, 7200RPM
Other Hardware: None

System State: Default
Base Pointers: 32-bit
Peak Pointers: 32-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	2	968	28.0	963	28.2	**964**	**28.2**	2	969	28.0	960	28.4	**961**	**28.2**
416.gamess	2	1033	37.8	1033	38.0	**1033**	**38.0**	2	1017	38.6	1016	38.6	**1016**	**38.6**
433.milc	2	792	23.2	796	23.0	**795**	**23.0**	2	**793**	**23.2**	792	23.2	798	23.0
434.zeusmp	2	**535**	**34.0**	533	34.2	543	33.6	2	**520**	**35.0**	511	35.6	523	34.8
435.gromacs	2	386	37.0	386	37.0	**386**	**37.0**	2	**377**	**38.0**	377	37.8	376	38.0
436.cactusADM	2	638	37.4	639	37.4	**639**	**37.4**	2	638	37.4	639	37.4	**639**	**37.4**
437.leslie3d	2	902	20.8	**903**	**20.8**	903	20.8	2	887	21.2	877	21.4	**887**	**21.2**
444.namd	2	512	31.4	**512**	**31.4**	512	31.4	2	**512**	**31.4**	512	31.4	512	31.4
447.dealII	2	584	39.2	**583**	**39.2**	582	39.4	2	534	42.8	**533**	**43.0**	529	43.2
450.soplex	2	750	22.2	**750**	**22.2**	751	22.2	2	**744**	**22.4**	741	22.6	746	22.4
453.povray	2	229	46.4	**229**	**46.4**	230	46.4	2	185	57.6	**185**	**57.6**	185	57.4
454.calculix	2	437	37.8	442	37.4	**441**	**37.4**	2	438	37.6	**440**	**37.6**	442	37.4
459.GemsFDTD	2	1167	18.2	1179	18.0	**1170**	**18.2**	2	**1192**	**17.8**	1186	17.8	1192	17.8
465.tonto	2	665	29.6	**660**	**29.8**	655	30.0	2	**622**	**31.6**	627	31.4	618	31.8
470.lbm	2	1792	15.4	**1792**	**15.4**	1793	15.4	1	628	21.9	628	21.9	**628**	**21.9**
481.wrf	2	**731**	**30.6**	730	30.6	734	30.4	2	**731**	**30.6**	730	30.6	734	30.4
482.sphinx3	2	1051	37.0	**1056**	**37.0**	1060	36.8	2	1046	37.2	**1043**	**37.4**	1042	37.4

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

General Notes

```
The system bus runs at 1066 MHz
Binaries were built on Windows Vista Ultimate (32-bit)
```

Base Compiler Invocation

C benchmarks:

```
icl -Qvc9 -Qc99
```

C++ benchmarks:

```
icl -Qvc9
```

Continued on next page

Base Compiler Invocation (Continued)

Fortran benchmarks:
ifort

Benchmarks using both Fortran and C:
icl -Qvc9 -Qc99 ifort

Base Portability Flags

436.cactusADM: -Qlowercase /assume:underscore
444.namd: -TP
447.dealII: -DDEAL_II_MEMBER_VAR_SPECIALIZATION_BUG
453.povray: -DSPEC_CPU_WINDOWS_ICL
454.calculix: -DSPEC_CPU_NOZMODIFIER -Qlowercase
481.wrf: -DSPEC_CPU_WINDOWS_ICL

Base Optimization Flags

C benchmarks:
-QxSSE4.1 -Qipo -O3 -Qprec-div- -Qopt-prefetch /F1000000000

C++ benchmarks:
-QxSSE4.1 -Qipo -O3 -Qprec-div- -Qopt-prefetch -Qcxx-features
/F1000000000 shlw32m.lib -link /FORCE:MULTIPLE

Fortran benchmarks:
-QxSSE4.1 -Qipo -O3 -Qprec-div- -Qopt-prefetch /F1000000000

Benchmarks using both Fortran and C:
-QxSSE4.1 -Qipo -O3 -Qprec-div- -Qopt-prefetch /F1000000000

Peak Compiler Invocation

C benchmarks:
icl -Qvc9 -Qc99

C++ benchmarks:
icl -Qvc9

Fortran benchmarks:
ifort

Benchmarks using both Fortran and C:
icl -Qvc9 -Qc99 ifort

Peak Portability Flags

436.cactusADM: -Qlowercase /assume:underscore
444.namd: -TP
447.dealII: -DDEAL_II_MEMBER_VAR_SPECIALIZATION_BUG
453.povray: -DSPEC_CPU_WINDOWS_ICL
454.calculix: -DSPEC_CPU_NOZMODIFIER -Qlowercase
481.wrf: -DSPEC_CPU_WINDOWS_ICL

Peak Optimization Flags

C benchmarks:

433.milc: -QxSSE4.1(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2) -Qipo -O3 -Qprec-div- -Oa /F1000000000

470.lbm: -QxSSE4.1 -Qipo -O3 -Qprec-div- -Qopt-prefetch /F1000000000

482.sphinx3: -QxSSE4.1 -Qipo -O3 -Qprec-div- -Qunroll2 /F1000000000

C++ benchmarks:

444.namd: -QxSSE4.1(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2) -Qipo -O3 -Qprec-div- -Oa /F1000000000 shlw32m.lib -link /FORCE:MULTIPLE

447.dealII: -QxSSE4.1(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2) -Qipo -O3 -Qprec-div- -Qunroll2 -Qansi-alias -Qscalar-rep- /F1000000000 shlw32m.lib -link /FORCE:MULTIPLE

450.soplex: -QxSSE4.1(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2) -Qipo -O3 -Qprec-div- /F1000000000 shlw32m.lib -link /FORCE:MULTIPLE

453.povray: -QxSSE4.1(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2) -Qipo -O3 -Qprec-div- -Qunroll4 -Qansi-alias /F1000000000 shlw32m.lib -link /FORCE:MULTIPLE

Fortran benchmarks:

410.bwaves: -QxSSE4.1 -Qipo -O3 -Qprec-div- -Qopt-prefetch /F1000000000

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

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Peak Optimization Flags (Continued)

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

437.leslie3d: `-QxSSE4.1`(pass 2) `-Qprof_gen`(pass 1) `-Qprof_use`(pass 2) `-Qipo -O3 -Qprec-div- -Qopt-prefetch /F1000000000`

459.GemsFDTD: `-QxSSE4.1`(pass 2) `-Qprof_gen`(pass 1) `-Qprof_use`(pass 2) `-Qipo -O3 -Qprec-div- -Qunroll2 -Ob0 -Qopt-prefetch /F1000000000`

465.tonto: `-QxSSE4.1`(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: `-QxSSE4.1`(pass 2) `-Qprof_gen`(pass 1) `-Qprof_use`(pass 2) `-Qipo -O3 -Qprec-div- -Qopt-prefetch /F1000000000`

436.cactusADM: `basepeak = yes`

454.calculix: `-QxSSE4.1 -Qipo -O3 -Qprec-div- /F1000000000`

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-win32-revA.html`

You can also download the XML flags source by saving the following link:
`http://www.spec.org/cpu2006/flags/Intel-ic11.0-win32-revA.xml`

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