



# SPEC® CFP2006 Result

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## Intel Corporation

SPECfp®2006 = 19.2

Intel DQ45CB motherboard (Intel Core 2 Quad Q8300)

SPECfp\_base2006 = 18.6

CPU2006 license: 13

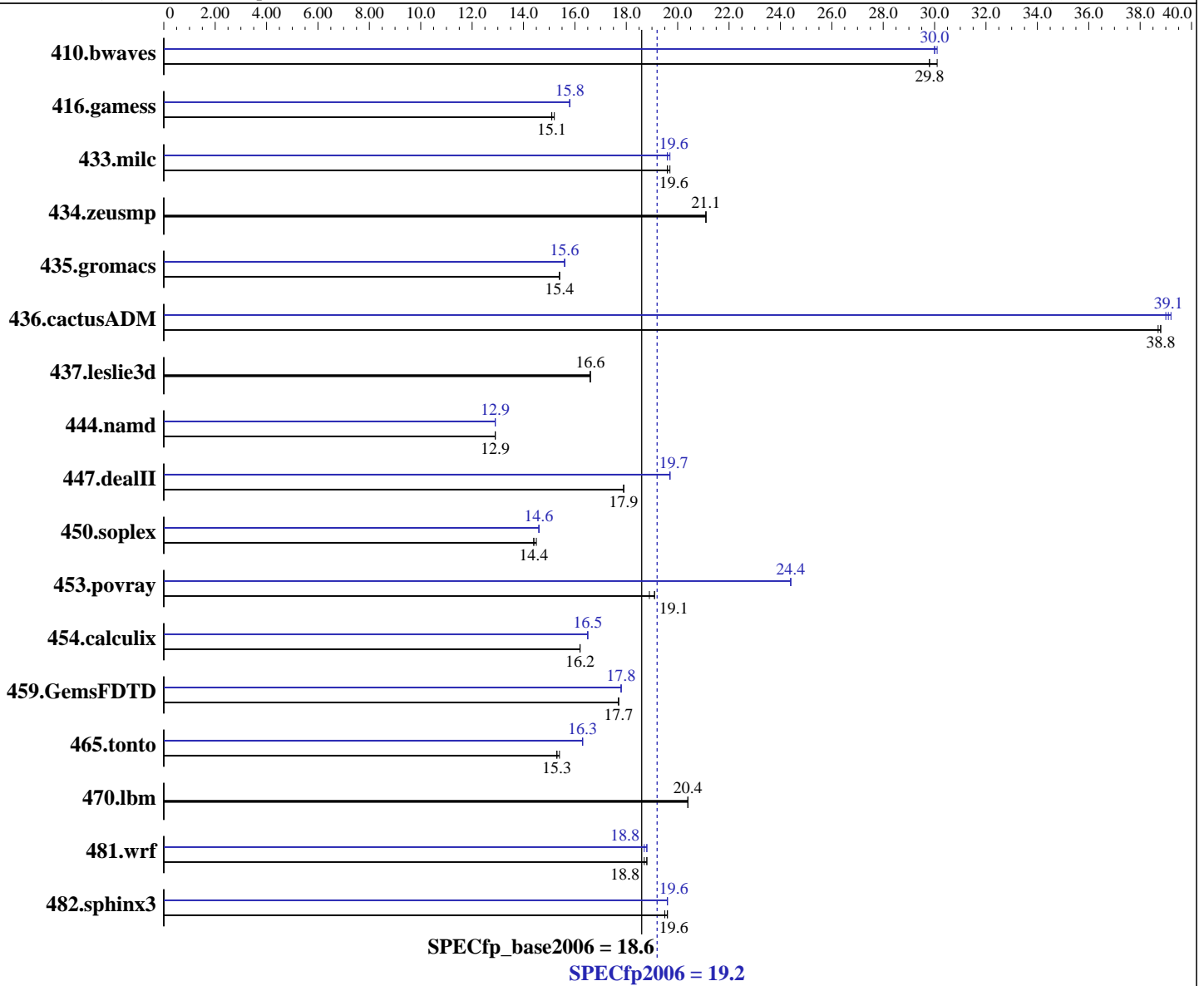
Test date: Apr-2009

Test sponsor: Intel Corporation

Hardware Availability: May-2009

Tested by: Intel Corporation

Software Availability: Nov-2008



### Hardware

CPU Name: Intel Core 2 Quad Q8300  
 CPU Characteristics:  
 CPU MHz: 2500  
 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: 4 MB I+D on chip per chip, 2 MB shared / 2 cores

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### Software

Operating System: Windows Vista Ultimate w/ SP1 (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: Yes  
 File System: NTFS

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L3 Cache: None  
Other Cache: None  
Memory: 4 GB (4x1GB DDR2-800 CL5)  
Disk Subsystem: Seagate 320 GB 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					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	<b>456</b>	<b>29.8</b>	457	29.8	451	30.1	<b>452</b>	<b>30.0</b>	452	30.0	451	30.1
416.gamess	<b>1293</b>	<b>15.1</b>	1293	15.1	1292	15.2	1238	15.8	<b>1238</b>	<b>15.8</b>	1238	15.8
433.milc	468	19.6	<b>468</b>	<b>19.6</b>	467	19.7	<b>467</b>	<b>19.6</b>	467	19.6	467	19.7
434.zeusmp	430	21.1	432	21.1	<b>431</b>	<b>21.1</b>	430	21.1	432	21.1	<b>431</b>	<b>21.1</b>
435.gromacs	<b>462</b>	<b>15.4</b>	462	15.4	462	15.4	456	15.6	456	15.6	<b>456</b>	<b>15.6</b>
436.cactusADM	308	38.8	309	38.7	<b>308</b>	<b>38.8</b>	<b>306</b>	<b>39.1</b>	307	39.0	305	39.2
437.leslie3d	566	16.6	<b>567</b>	<b>16.6</b>	568	16.6	566	16.6	<b>567</b>	<b>16.6</b>	568	16.6
444.namd	<b>623</b>	<b>12.9</b>	622	12.9	623	12.9	623	12.9	623	12.9	<b>623</b>	<b>12.9</b>
447.dealII	<b>640</b>	<b>17.9</b>	640	17.9	640	17.9	<b>580</b>	<b>19.7</b>	580	19.7	579	19.7
450.soplex	577	14.5	<b>578</b>	<b>14.4</b>	578	14.4	572	14.6	<b>572</b>	<b>14.6</b>	571	14.6
453.povray	<b>279</b>	<b>19.1</b>	279	19.1	281	18.9	218	24.4	218	24.4	<b>218</b>	<b>24.4</b>
454.calculix	510	16.2	<b>510</b>	<b>16.2</b>	510	16.2	500	16.5	<b>500</b>	<b>16.5</b>	500	16.5
459.GemsFDTD	601	17.7	<b>599</b>	<b>17.7</b>	599	17.7	598	17.8	594	17.8	<b>594</b>	<b>17.8</b>
465.tonto	642	15.3	641	15.4	<b>641</b>	<b>15.3</b>	602	16.3	602	16.3	<b>602</b>	<b>16.3</b>
470.lbm	674	20.4	<b>674</b>	<b>20.4</b>	675	20.4	674	20.4	<b>674</b>	<b>20.4</b>	675	20.4
481.wrf	595	18.8	<b>595</b>	<b>18.8</b>	596	18.7	596	18.7	595	18.8	<b>595</b>	<b>18.8</b>
482.sphinx3	996	19.6	<b>996</b>	<b>19.6</b>	998	19.5	995	19.6	<b>994</b>	<b>19.6</b>	994	19.6

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

## General Notes

Tested systems can be used with Shin-G ATX case,  
Antec Truepower Trio power supply TP3-650  
Binaries were built on Windows Vista Ultimate (32-bit)  
Binaries were built on Windows Vista Ultimate (32-bit)  
OMP\_NUM\_THREADS set to number of logical processors as seen by the OS  
KMP\_AFFINITY set to physical,0

## Base Compiler Invocation

C benchmarks:  
icl -Qvc9 -Qc99

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## Base Compiler Invocation (Continued)

C++ benchmarks:

icl -Qvc9

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- -Qparallel -Qopt-prefetch  
/F1000000000

C++ benchmarks:

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

Fortran benchmarks:

-QxSSE4.1 -Qipo -O3 -Qprec-div- -Qparallel -Qopt-prefetch  
/F1000000000

Benchmarks using both Fortran and C:

-QxSSE4.1 -Qipo -O3 -Qprec-div- -Qparallel -Qopt-prefetch  
/F1000000000

## Peak Compiler Invocation

C benchmarks:

icl -Qvc9 -Qc99

C++ benchmarks:

icl -Qvc9

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## Peak Compiler Invocation (Continued)

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: basepeak = yes

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 -Qopt-prefetch  
-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

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## Peak Optimization Flags (Continued)

Fortran benchmarks:

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

434.zeusmp: basepeak = yes

437.leslie3d: basepeak = yes

459.GemsFDTD: -QxSSE4.1(pass 2) -Qprof\_gen(pass 1) -Qprof\_use(pass 2) -Qipo -O3 -Qprec-div- -Qunroll2 -Ob0 -Qopt-prefetch -Qparallel /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: -QxSSE4.1(pass 2) -Qprof\_gen(pass 1) -Qprof\_use(pass 2) -Qipo -O3 -Qprec-div- -Qunroll2 -Qopt-prefetch -Qparallel /F1000000000

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

481.wrf: -QxSSE4.1 -Qipo -O3 -Qprec-div- -Qopt-prefetch -Qparallel /F1000000000

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.20090710.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.20090710.xml>



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