



# SPEC<sup>®</sup> CFP2006 Result

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## Intel Corporation

**SPECfp<sup>®</sup>2006 = 25.4**

Asus P5E3 Pro motherboard (Intel Core 2 Duo E8600)

**SPECfp\_base2006 = 24.5**

CPU2006 license: 13

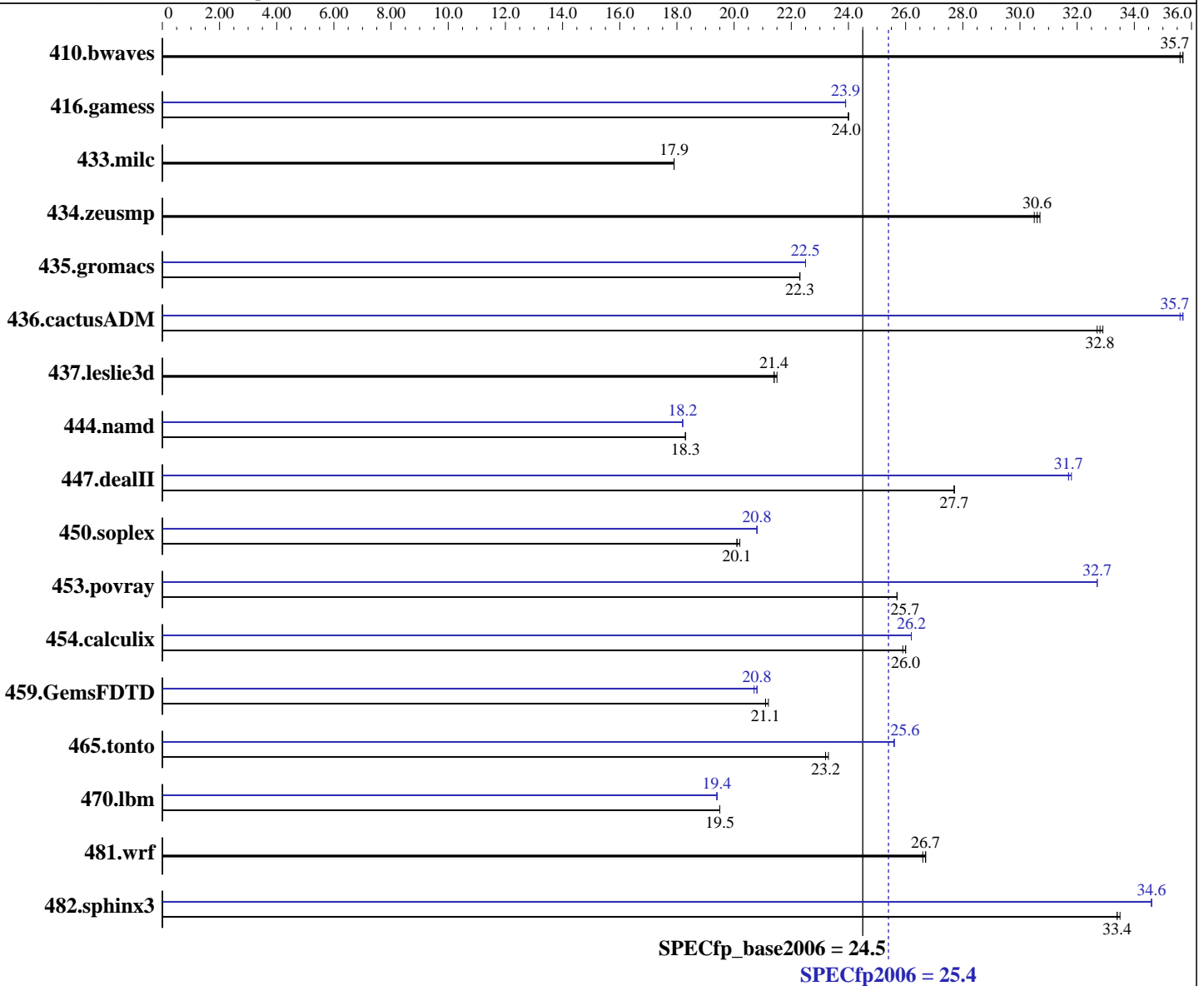
Test sponsor: Intel Corporation

Tested by: Intel Corporation

Test date: Feb-2010

Hardware Availability: Jun-2009

Software Availability: Oct-2009



**Hardware**

CPU Name: Intel Core 2 Duo E8600  
 CPU Characteristics:  
 CPU MHz: 3333  
 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 Vista Ultimate w/ SP1 (64-bit)  
 Compiler: Intel C++ Compiler Professional 11.1 for Intel 64 Build 20090903 Package ID: w\_cproc\_p\_11.1.045  
 Intel Visual Fortran Compiler Professional 11.1 for Intel 64 Build 20090903 Package ID: w\_cproc\_p\_11.1.045, w\_cprof\_p\_11.1.045  
 Microsoft Visual Studio 2008 Professional SP1 (for libraries)  
 Auto Parallel: Yes

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L3 Cache: None  
 Other Cache: None  
 Memory: 4 GB (2x2GB Micron MT16JTF25664AZ-1G4 DDR3-1333 CL9)  
 Disk Subsystem: Intel X25-M 80GB SSD  
 Other Hardware: None

File System: NTFS  
 System State: Default  
 Base Pointers: 64-bit  
 Peak Pointers: 64-bit  
 Other Software: None  
 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>381</b>	<b>35.7</b>	381	35.7	381	35.6	<b>381</b>	<b>35.7</b>	381	35.7	381	35.6
416.gamess	<b>816</b>	<b>24.0</b>	816	24.0	817	24.0	<b>820</b>	<b>23.9</b>	<b>820</b>	<b>23.9</b>	820	23.9
433.milc	<b>512</b>	<b>17.9</b>	512	17.9	512	17.9	<b>512</b>	<b>17.9</b>	512	17.9	512	17.9
434.zeusmp	298	30.5	297	30.7	<b>298</b>	<b>30.6</b>	298	30.5	297	30.7	<b>298</b>	<b>30.6</b>
435.gromacs	320	22.3	<b>320</b>	<b>22.3</b>	320	22.3	<b>318</b>	<b>22.5</b>	<b>318</b>	<b>22.5</b>	318	22.5
436.cactusADM	365	32.7	364	32.9	<b>364</b>	<b>32.8</b>	<b>335</b>	<b>35.7</b>	336	35.6	335	35.7
437.leslie3d	438	21.5	<b>439</b>	<b>21.4</b>	439	21.4	<b>438</b>	<b>21.5</b>	<b>439</b>	<b>21.4</b>	439	21.4
444.namd	439	18.3	<b>439</b>	<b>18.3</b>	439	18.3	<b>440</b>	<b>18.2</b>	<b>440</b>	<b>18.2</b>	440	18.2
447.dealII	<b>413</b>	<b>27.7</b>	413	27.7	413	27.7	<b>361</b>	<b>31.7</b>	<b>360</b>	<b>31.8</b>	<b>360</b>	<b>31.7</b>
450.soplex	<b>414</b>	<b>20.1</b>	414	20.2	414	20.1	<b>402</b>	<b>20.8</b>	<b>401</b>	<b>20.8</b>	<b>401</b>	<b>20.8</b>
453.povray	207	25.7	207	25.7	<b>207</b>	<b>25.7</b>	<b>163</b>	<b>32.7</b>	<b>163</b>	<b>32.7</b>	163	32.7
454.calculix	318	26.0	<b>318</b>	<b>26.0</b>	318	25.9	<b>315</b>	<b>26.2</b>	315	26.2	314	26.2
459.GemsFDTD	501	21.2	<b>503</b>	<b>21.1</b>	503	21.1	<b>511</b>	<b>20.7</b>	<b>509</b>	<b>20.8</b>	<b>510</b>	<b>20.8</b>
465.tonto	<b>424</b>	<b>23.2</b>	424	23.2	423	23.3	<b>385</b>	<b>25.6</b>	<b>385</b>	<b>25.6</b>	385	25.6
470.lbm	<b>704</b>	<b>19.5</b>	703	19.5	704	19.5	<b>708</b>	<b>19.4</b>	<b>708</b>	<b>19.4</b>	709	19.4
481.wrf	<b>419</b>	<b>26.7</b>	419	26.6	418	26.7	<b>419</b>	<b>26.7</b>	419	26.6	418	26.7
482.sphinx3	583	33.5	<b>583</b>	<b>33.4</b>	584	33.4	<b>564</b>	<b>34.6</b>	<b>563</b>	<b>34.6</b>	<b>563</b>	<b>34.6</b>

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,  
 PC Power and Cooling 1200W power supply  
 OMP\_NUM\_THREADS set to number of processors cores  
 KMP\_AFFINITY set to granularity=fine,scatter  
 System was configured with an ATI 5970 discrete graphics card

## 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:

-QxSSE4.1 -Qipo -O3 -Qprec-div- -Qparallel -Qopt-prefetch  
-Qauto-ilp32 /F1000000000

C++ benchmarks:

-QxSSE4.1 -Qipo -O3 -Qprec-div- -Qparallel -Qopt-prefetch  
-Qcxx-features -Qauto-ilp32 /F1000000000 shlW64M.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  
-Qauto-ilp32 /F1000000000



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## 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: -QxSSE4.1(pass 2) -Qprof\_gen(pass 1) -Qprof\_use(pass 2)  
-Qipo -O3 -Qprec-div- -Qansi-alias -Qparallel  
-Qauto-ilp32 /F1000000000

482.sphinx3: -QxSSE4.1(pass 2) -Qprof\_gen(pass 1) -Qprof\_use(pass 2)  
-Qipo -O3 -Qprec-div- -Qunroll2 -Qauto-ilp32 /F1000000000

C++ benchmarks:

444.namd: -QxSSE4.1(pass 2) -Qprof\_gen(pass 1) -Qprof\_use(pass 2)  
-Qipo -O3 -Qprec-div- -Oa -Qauto-ilp32 /F1000000000  
shlW64M.lib -link /FORCE:MULTIPLE

447.dealIII: -QxSSE4.1(pass 2) -Qprof\_gen(pass 1) -Qprof\_use(pass 2)  
-Qipo -O3 -Qprec-div- -Qunroll2 -Qopt-prefetch  
-Qansi-alias -Qscalar-rep- -Qauto-ilp32 /F1000000000  
shlW64M.lib -link /FORCE:MULTIPLE

450.soplex: -QxSSE4.1(pass 2) -Qprof\_gen(pass 1) -Qprof\_use(pass 2)  
-Qipo -O3 -Qauto-ilp32 /F1000000000 shlW64M.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 -Qauto-ilp32  
/F1000000000 shlW64M.lib -link /FORCE:MULTIPLE

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## Peak Optimization Flags (Continued)

Fortran benchmarks:

410.bwaves: basepeak = yes

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 -Qopt-prefetch -Qparallel  
/F1000000000

465.tonto: -QxSSE4.1(pass 2) -Qprof\_gen(pass 1) -Qprof\_use(pass 2)  
-Qipo -O3 -Qprec-div- -Qunroll4 -Qauto -Qinline-alloc  
/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 -Qauto-ilp32  
/F1000000000

436.cactusADM: -QxSSE4.1(pass 2) -Qprof\_gen(pass 1) -Qprof\_use(pass 2)  
-Qipo -O3 -Qprec-div- -Qopt-prefetch -Qparallel -Qunroll2  
-Qauto-ilp32 /F1000000000

454.calculix: -QxSSE4.1 -Qipo -O3 -Qprec-div- -Qauto-ilp32 /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-winx64-revA.20100302.01.html>

You can also download the XML flags source by saving the following link:

<http://www.spec.org/cpu2006/flags/Intel-ic11.0-winx64-revA.20100302.01.xml>



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For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

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