



# SPEC<sup>®</sup> CFP2006 Result

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ASUSTeK Computer Inc.  
(Test Sponsor: Intel Corporation)

SPECfp<sup>®</sup>2006 = 23.3

Asus P5E3 Premium (Intel Core 2 Quad Q9550)

SPECfp\_base2006 = 22.6

CPU2006 license: 13

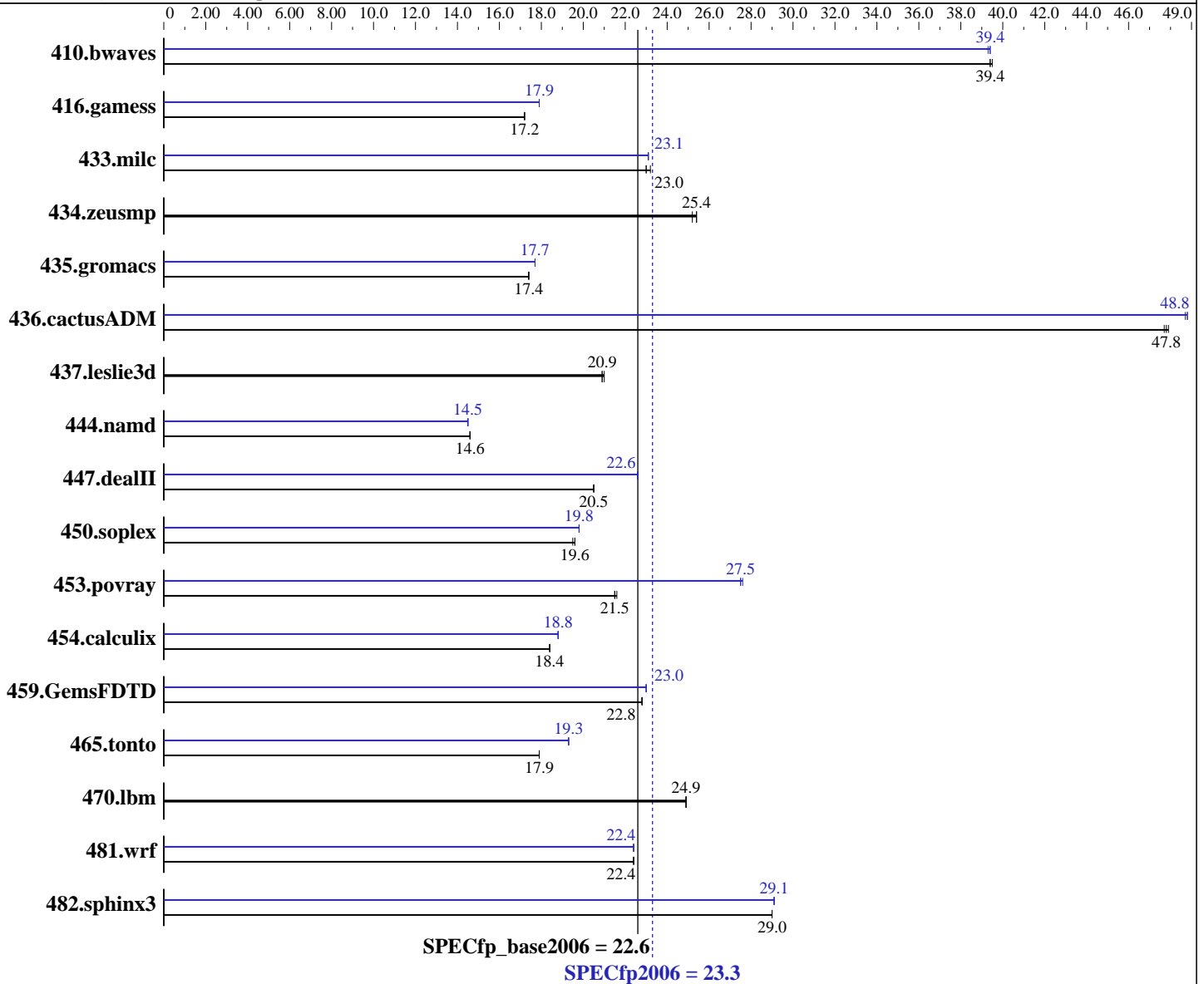
Test date: Oct-2008

Test sponsor: Intel Corporation

Hardware Availability: Apr-2008

Tested by: Intel Corporation

Software Availability: Nov-2008



### Hardware

CPU Name: Intel Core 2 Quad Q9550  
 CPU Characteristics: 2833  
 CPU MHz: 2833  
 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: 12 MB I+D on chip per chip, 6 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 (4 x 1GB Corsair CM3X1024-1333C9DHX DDR3-1333 CL9)  
Disk Subsystem: 80 GB Intel X-25M SATA Solid-State Drive  
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	345	39.4	<b>345</b>	<b>39.4</b>	344	39.5	345	39.3	<b>345</b>	<b>39.4</b>	345	39.4
416.gamess	1140	17.2	<b>1140</b>	<b>17.2</b>	1139	17.2	1093	17.9	1093	17.9	<b>1093</b>	<b>17.9</b>
433.milc	397	23.2	<b>399</b>	<b>23.0</b>	399	23.0	<b>398</b>	<b>23.1</b>	398	23.1	398	23.1
434.zeusmp	361	25.2	358	25.4	<b>359</b>	<b>25.4</b>	361	25.2	358	25.4	<b>359</b>	<b>25.4</b>
435.gromacs	<b>409</b>	<b>17.4</b>	409	17.4	409	17.4	404	17.7	404	17.7	<b>404</b>	<b>17.7</b>
436.cactusADM	250	47.7	<b>250</b>	<b>47.8</b>	249	47.9	245	48.8	<b>245</b>	<b>48.8</b>	245	48.7
437.leslie3d	<b>449</b>	<b>20.9</b>	449	21.0	449	20.9	<b>449</b>	<b>20.9</b>	449	21.0	449	20.9
444.namd	<b>551</b>	<b>14.6</b>	551	14.6	551	14.6	552	14.5	552	14.5	<b>552</b>	<b>14.5</b>
447.dealII	<b>559</b>	<b>20.5</b>	559	20.5	559	20.5	506	22.6	506	22.6	<b>506</b>	<b>22.6</b>
450.soplex	426	19.6	427	19.5	<b>426</b>	<b>19.6</b>	421	19.8	<b>421</b>	<b>19.8</b>	421	19.8
453.povray	247	21.6	<b>247</b>	<b>21.5</b>	247	21.5	193	27.6	<b>194</b>	<b>27.5</b>	194	27.5
454.calculix	<b>448</b>	<b>18.4</b>	448	18.4	448	18.4	440	18.8	<b>440</b>	<b>18.8</b>	440	18.8
459.GemsFDTD	465	22.8	<b>465</b>	<b>22.8</b>	465	22.8	462	23.0	<b>462</b>	<b>23.0</b>	462	23.0
465.tonto	<b>549</b>	<b>17.9</b>	549	17.9	549	17.9	509	19.3	509	19.3	<b>509</b>	<b>19.3</b>
470.lbm	552	24.9	<b>551</b>	<b>24.9</b>	551	24.9	552	24.9	<b>551</b>	<b>24.9</b>	551	24.9
481.wrf	499	22.4	<b>498</b>	<b>22.4</b>	498	22.4	498	22.4	498	22.4	<b>498</b>	<b>22.4</b>
482.sphinx3	672	29.0	<b>672</b>	<b>29.0</b>	673	29.0	671	29.1	671	29.1	<b>671</b>	<b>29.1</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  
The system bus runs at 1333 MHz  
System was configured with nVidia GTX 280 discrete graphics card  
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 files that were used to format this result can be browsed at

<http://www.spec.org/cpu2006/flags/Intel-ic11.0-win32-revA.20090713.html>

<http://www.spec.org/cpu2006/flags/Intel-Win32-Platform.html>

You can also download the XML flags sources by saving the following links:

<http://www.spec.org/cpu2006/flags/Intel-ic11.0-win32-revA.20090713.xml>

<http://www.spec.org/cpu2006/flags/Intel-Win32-Platform.xml>



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