



# SPEC® CFP2006 Result

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ASUSTeK Computer Inc.  
(Test Sponsor: Intel Corporation)

SPECfp®2006 = 27.2

ASUSTek M4A89GTD PRO/USB3 (Athlon II X4 645)

SPECfp\_base2006 = 26.5

CPU2006 license: 13

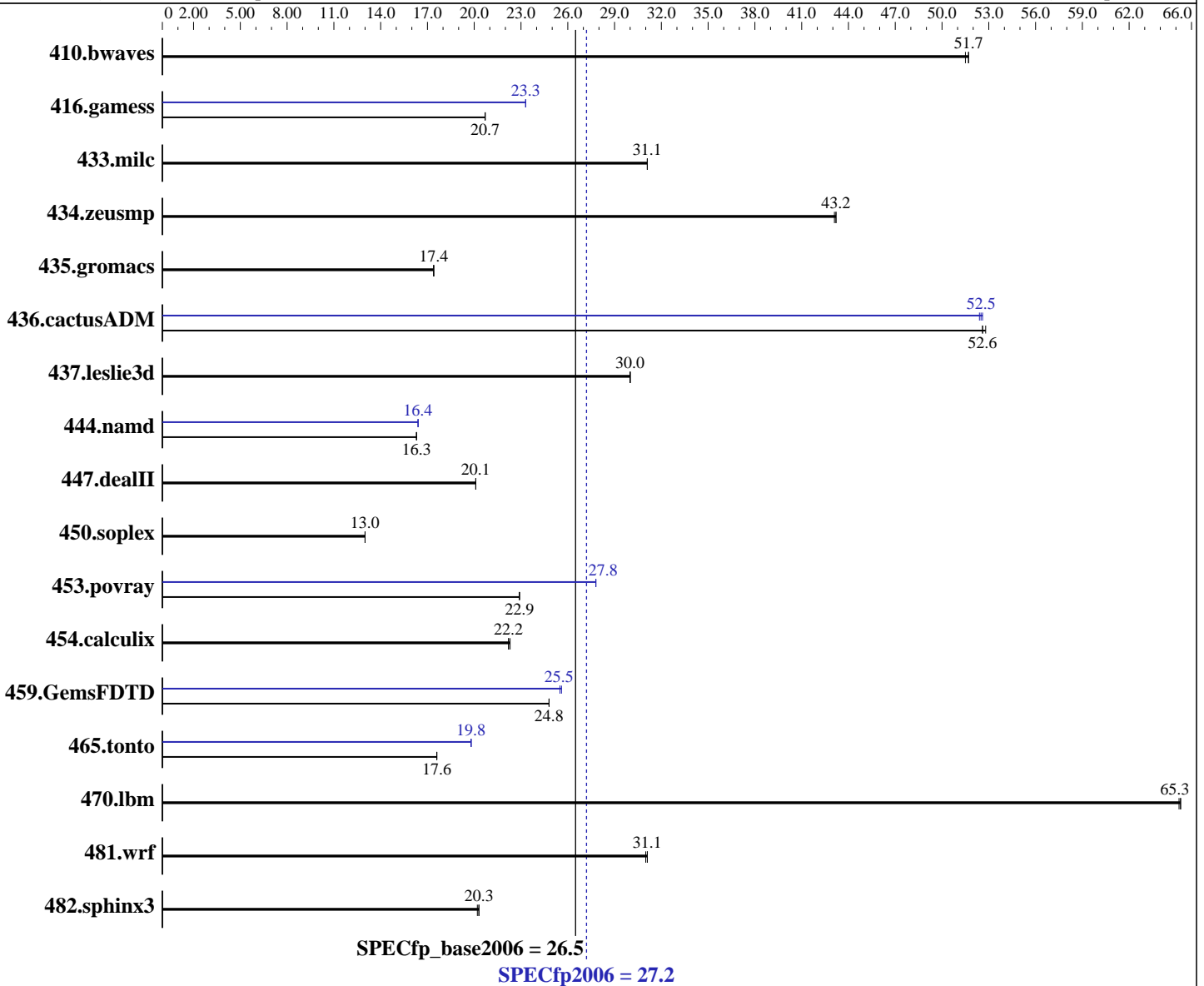
Test date: Jun-2011

Test sponsor: Intel Corporation

Hardware Availability: Feb-2011

Tested by: Intel Corporation

Software Availability: Apr-2011



### Hardware

CPU Name: AMD Athlon II X4 645  
 CPU Characteristics:  
 CPU MHz: 3100  
 FPU: Integrated  
 CPU(s) enabled: 4 cores, 1 chip, 4 cores/chip  
 CPU(s) orderable: 1 chip  
 Primary Cache: 64 KB I + 64 KB D on chip per core  
 Secondary Cache: 512 KB I+D on chip per core

Continued on next page

### Software

Operating System: Windows 7 Ultimate (64-bit)  
 Compiler: Intel C++ Compiler XE for Intel 64  
 Version 12.0.3.176 Build 20110309  
 Intel Visual Fortran Compiler XE for Intel 64  
 Version 12.0.3.176 Build 20110309  
 Microsoft Visual Studio 2008 Professional SP1  
 (for libraries)  
 Auto Parallel: Yes  
 File System: NTFS

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L3 Cache: None  
Other Cache: None  
Memory: 4 GB (2 x 2 GB 2Rx4 PC3-10600U-9)  
Disk Subsystem: 1 TB Seagate SATA, 7200 RPM  
Other Hardware: None

System State: Default  
Base Pointers: 32/64-bit  
Peak Pointers: 32/64-bit  
Other Software: SmartHeap Library Version 9.01 from <http://www.microquill.com/>

## Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	264	51.5	263	51.7	<b>263</b>	<b>51.7</b>	264	51.5	263	51.7	<b>263</b>	<b>51.7</b>
416.gamess	948	20.7	<b>948</b>	<b>20.7</b>	947	20.7	839	23.3	<b>839</b>	<b>23.3</b>	840	23.3
433.milc	295	31.1	<b>296</b>	<b>31.1</b>	296	31.1	295	31.1	<b>296</b>	<b>31.1</b>	296	31.1
434.zeusmp	211	43.1	211	43.2	<b>211</b>	<b>43.2</b>	211	43.1	211	43.2	<b>211</b>	<b>43.2</b>
435.gromacs	<b>410</b>	<b>17.4</b>	410	17.4	410	17.4	<b>410</b>	<b>17.4</b>	410	17.4	410	17.4
436.cactusADM	<b>227</b>	<b>52.6</b>	227	52.6	227	52.8	228	52.4	<b>228</b>	<b>52.5</b>	227	52.6
437.leslie3d	313	30.0	<b>313</b>	<b>30.0</b>	313	30.0	313	30.0	<b>313</b>	<b>30.0</b>	313	30.0
444.namd	493	16.3	<b>493</b>	<b>16.3</b>	493	16.3	488	16.4	<b>488</b>	<b>16.4</b>	488	16.4
447.dealII	<b>568</b>	<b>20.1</b>	568	20.1	568	20.1	<b>568</b>	<b>20.1</b>	568	20.1	568	20.1
450.soplex	643	13.0	644	13.0	<b>643</b>	<b>13.0</b>	643	13.0	644	13.0	<b>643</b>	<b>13.0</b>
453.povray	232	22.9	232	22.9	<b>232</b>	<b>22.9</b>	<b>191</b>	<b>27.8</b>	191	27.8	192	27.8
454.calculix	<b>371</b>	<b>22.2</b>	371	22.2	371	22.3	<b>371</b>	<b>22.2</b>	371	22.2	371	22.3
459.GemsFDTD	<b>428</b>	<b>24.8</b>	428	24.8	427	24.8	416	25.5	<b>415</b>	<b>25.5</b>	415	25.6
465.tonto	<b>560</b>	<b>17.6</b>	561	17.6	559	17.6	497	19.8	497	19.8	<b>497</b>	<b>19.8</b>
470.lbm	211	65.3	<b>211</b>	<b>65.3</b>	211	65.2	211	65.3	<b>211</b>	<b>65.3</b>	211	65.2
481.wrf	<b>360</b>	<b>31.1</b>	360	31.0	359	31.1	<b>360</b>	<b>31.1</b>	360	31.0	359	31.1
482.sphinx3	963	20.2	<b>962</b>	<b>20.3</b>	961	20.3	963	20.2	<b>962</b>	<b>20.3</b>	961	20.3

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

## Base Compiler Invocation

C benchmarks:  
icl -Qvc9 -Qstd=c99

C++ benchmarks:  
icl -Qvc9

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## Base Compiler Invocation (Continued)

Fortran benchmarks:  
ifort

Benchmarks using both Fortran and C:  
icl -Qvc9 -Qstd=c99 ifort

## Base Portability Flags

410.bwaves: -DSPEC\_CPU\_P64 -names:lowercase  
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 -names:lowercase /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 -names:lowercase  
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:  
/arch:SSE3 -Qipo -O3 -Qparallel -Qansi-alias -Qopt-prefetch  
-Qauto-ilp32 /F1000000000

C++ benchmarks:  
/arch:SSE3 -Qipo -O3 -Qparallel -Qansi-alias -Qopt-prefetch  
-Qcxx-features -Qauto-ilp32 -Qprec-div- /F1000000000 shlw64M.lib  
-link /FORCE:MULTIPLE

Fortran benchmarks:  
/arch:SSE3 -Qipo -O3 -Qparallel -Qansi-alias -Qopt-prefetch  
/F1000000000

Benchmarks using both Fortran and C:  
/arch:SSE3 -Qipo -O3 -Qparallel -Qansi-alias -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: basepeak = yes  
482.sphinx3: basepeak = yes  
C++ benchmarks:  
444.namd: /arch:SSE3(pass 2) -Qprof\_gen(pass 1) -Qprof\_use(pass 2)  
-Qipo -O3 -Qprec-div- -Oa -Qauto-ilp32 /F1000000000  
sh1W64M.lib -link /FORCE:MULTIPLE  
447.dealII: basepeak = yes  
450.soplex: basepeak = yes  
453.povray: /arch:SSE3(pass 2) -Qprof\_gen(pass 1) -Qprof\_use(pass 2)  
-Qipo -O3 -Qprec-div- -Qunroll4 -Qansi-alias -Qauto-ilp32  
/F1000000000 sh1W64M.lib -link /FORCE:MULTIPLE  
Fortran benchmarks:  
410.bwaves: basepeak = yes  
416.gamess: /arch:SSE3(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: basepeak = yes

437.leslie3d: basepeak = yes

459.GemsFDTD: /arch:SSE3(pass 2) -Qprof\_gen(pass 1) -Qprof\_use(pass 2)  
-Qipo -O3 -Qprec-div- -Qunroll2 -Qopt-prefetch -Qparallel  
/F1000000000

465.tonto: /arch:SSE3(pass 2) -Qprof\_gen(pass 1) -Qprof\_use(pass 2)  
-Qipo -O3 -Qprec-div- -Qunroll4 -Qauto -Qinline-calloc  
/F1000000000

Benchmarks using both Fortran and C:

435.gromacs: basepeak = yes

436.cactusADM: /arch:SSE3(pass 2) -Qprof\_gen(pass 1) -Qprof\_use(pass 2)  
-Qipo -O3 -Qprec-div- -Qopt-prefetch -Qparallel -Qunroll2  
-Qauto-ilp32 /F1000000000

454.calculix: basepeak = yes

481.wrf: basepeak = yes

The flags files that were used to format this result can be browsed at

<http://www.spec.org/cpu2006/flags/Intel-ic12-winx64-revC.html>

<http://www.spec.org/cpu2006/flags/Intel-Windows-Platform-Settings.20110719.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic12-winx64-revC.xml>

<http://www.spec.org/cpu2006/flags/Intel-Windows-Platform-Settings.20110719.xml>

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For questions about this result, please contact the tester.  
For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

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