



SPEC® CFP2006 Result

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ASUSTeK Computer Inc.

(Test Sponsor: Intel Corporation)

ASUS F2A85-M PRO motherboard (AMD A6-6400K APU with Radeon HD Graphics)

SPECfp®2006 = 27.2

SPECfp_base2006 = 26.3

CPU2006 license: 13

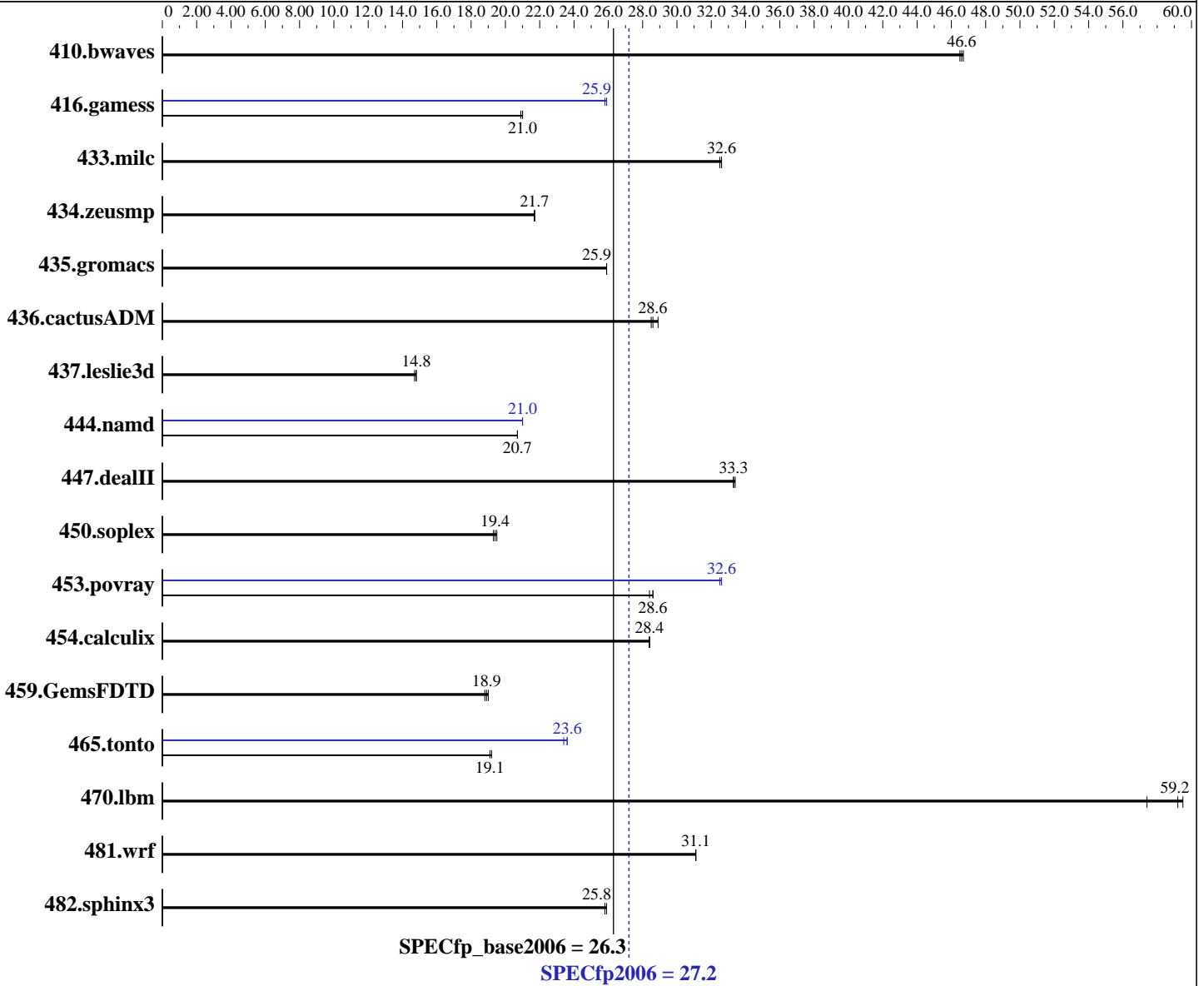
Test sponsor: Intel Corporation

Tested by: Intel Corporation

Test date: Oct-2013

Hardware Availability: Jun-2013

Software Availability: Apr-2013



Hardware

CPU Name: AMD A6-6400K
 CPU Characteristics: AMD Turbo CORE technology up to 4.10 GHz
 CPU MHz: 3900
 FPU: Integrated
 CPU(s) enabled: 2 cores, 1 chip, 2 cores/chip
 CPU(s) orderable: 1 chip
 Primary Cache: 64 KB I on chip per chip; 16 KB D on chip per core
 Secondary Cache: 1 MB I+D on chip per chip

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Software

Operating System: Microsoft Windows 7 Ultimate 6.1.7601 Service Pack 1 Build 7601
 Compiler: C/C++: Version 13.1.1.171 of Intel C++ Studio XE for Windows;
 Fortran: Version 13.1.1.171 of Intel Fortran Studio XE for Windows;
 Libraries: Version 16.00.30319.01 of Microsoft Visual Studio 2010 Professional SP1
 Auto Parallel: Yes

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L3 Cache: None
Other Cache: None
Memory: 4 GB (2 x 2 GB 1Rx8 PC3-12800U-11)
Disk Subsystem: 250 GB Seagate SATA HDD, 7200 RPM
Other Hardware: None

File System: NTFS
System State: Default
Base Pointers: 32/64-bit
Peak Pointers: 32/64-bit
Other Software: SmartHeap Library Version 10.0 from <http://www.microquill.com/>

Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	<u>292</u>	<u>46.6</u>	293	46.5	291	46.7	<u>292</u>	<u>46.6</u>	293	46.5	291	46.7
416.gamess	<u>931</u>	<u>21.0</u>	930	21.0	935	20.9	<u>757</u>	<u>25.9</u>	758	25.8	<u>757</u>	<u>25.9</u>
433.milc	282	32.5	281	32.6	<u>282</u>	<u>32.6</u>	282	32.5	281	32.6	<u>282</u>	<u>32.6</u>
434.zeusmp	420	21.7	<u>420</u>	<u>21.7</u>	420	21.7	<u>420</u>	<u>21.7</u>	<u>420</u>	<u>21.7</u>	420	21.7
435.gromacs	276	25.9	275	25.9	<u>276</u>	<u>25.9</u>	276	25.9	275	25.9	<u>276</u>	<u>25.9</u>
436.cactusADM	413	28.9	419	28.5	<u>418</u>	<u>28.6</u>	413	28.9	419	28.5	<u>418</u>	<u>28.6</u>
437.leslie3d	<u>636</u>	<u>14.8</u>	637	14.7	636	14.8	<u>636</u>	<u>14.8</u>	637	14.7	636	14.8
444.namd	<u>388</u>	<u>20.7</u>	388	20.7	388	20.7	<u>381</u>	<u>21.0</u>	<u>381</u>	<u>21.0</u>	381	21.0
447.dealII	343	33.4	343	33.3	<u>343</u>	<u>33.3</u>	343	33.4	343	33.3	<u>343</u>	<u>33.3</u>
450.soplex	428	19.5	<u>430</u>	<u>19.4</u>	432	19.3	<u>428</u>	<u>19.5</u>	<u>430</u>	<u>19.4</u>	432	19.3
453.povray	186	28.6	<u>186</u>	<u>28.6</u>	187	28.4	163	32.6	164	32.5	<u>163</u>	<u>32.6</u>
454.calculix	291	28.4	<u>291</u>	<u>28.4</u>	291	28.4	<u>291</u>	<u>28.4</u>	<u>291</u>	<u>28.4</u>	291	28.4
459.GemsFDTD	564	18.8	559	19.0	<u>563</u>	<u>18.9</u>	564	18.8	559	19.0	<u>563</u>	<u>18.9</u>
465.tonto	514	19.1	514	19.2	<u>514</u>	<u>19.1</u>	420	23.4	416	23.6	<u>417</u>	<u>23.6</u>
470.lbm	239	57.4	231	59.5	<u>232</u>	<u>59.2</u>	239	57.4	231	59.5	<u>232</u>	<u>59.2</u>
481.wrf	359	31.1	359	31.1	<u>359</u>	<u>31.1</u>	359	31.1	359	31.1	<u>359</u>	<u>31.1</u>
482.sphinx3	<u>755</u>	<u>25.8</u>	755	25.8	754	25.9	<u>755</u>	<u>25.8</u>	755	25.8	754	25.9

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

Compiler Invocation Notes

To compile these binaries, the Intel Compiler 13.1 was set up to generate 64-bit binaries with the command:
"ipsxe-comp-vars.bat intel64 vs2010" (shortcut provided in the Intel(r) Parallel Studio XE 2013 program folder)

Platform Notes

Sysinfo program C:\SPEC13.1\Docs\sysinfo
\$Rev: 6775 \$ \$Date:: 2011-08-16 #\$ \8787f7622badcf24e01c368b1db4377c
running on Clt3085A9AEE4F6 Mon Oct 7 22:05:29 2013

This section contains SUT (System Under Test) info as seen by some common utilities. To remove or add to this section, see:

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Platform Notes (Continued)

<http://www.spec.org/cpu2006/Docs/config.html#sysinfo>

Trying 'systeminfo'

OS Name : Microsoft Windows 7 Ultimate

OS Version : 6.1.7601 Service Pack 1 Build 7601

System Manufacturer: System manufacturer

System Model : System Product Name

Processor(s) : 1 Processor(s) Installed.

[01]: AMD64 Family 21 Model 19 Stepping 1 AuthenticAMD ~3900 Mhz

BIOS Version : American Megatrends Inc. 6105, 5/8/2013

Total Physical Memory: 3,111 MB

Trying 'wmic cpu get /value'

DeviceID : CPU0

L2CacheSize : 1024

L3CacheSize : 0

MaxClockSpeed : 3900

Name : AMD A6-6400K APU with Radeon(tm) HD Graphics

NumberOfCores : 1

NumberOfLogicalProcessors: 2

(End of data from sysinfo program)

Component Notes

Tested systems can be used with Shin-G ATX case,

PC Power and Cooling 1200W power supply

Micron MT8JTF25664AZ-1G6 Series Memory DIMMs

General Notes

OMP_NUM_THREADS set to number of processors cores

KMP_AFFINITY set to granularity=fine,scatter

Binaries compiled on a system with 1x Intel Core i7-860 CPU

+ 8GB memory using Windows 7 Enterprise 64-bit

Base Compiler Invocation

C benchmarks:

icl -Qvc10 -Qstd=c99

C++ benchmarks:

icl -Qvc10

Fortran benchmarks:

ifort

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Base Compiler Invocation (Continued)

Benchmarks using both Fortran and C:

```
icl -Qvc10 -Qstd=c99 ifort
```

Base Portability Flags

```

410.bwaves: -DSPEC_CPU_P64
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
-Qoption,cpp,--ms_incompat_treatment_of_commas_in_macros
450.soplex: -DSPEC_CPU_P64
453.povray: -DSPEC_CPU_P64 -DSPEC_CPU_NEED_INVHYP -DNEED_INVHYP
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:AVX -Qipo -O3 -Qprec-div- -Qparallel -Qansi-alias
-Qopt-prefetch -Qauto-ilp32 /F1000000000
```

C++ benchmarks:

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

Fortran benchmarks:

```
/arch:AVX -Qipo -O3 -Qprec-div- -Qparallel -Qansi-alias
-Qopt-prefetch /F1000000000
```

Benchmarks using both Fortran and C:

```
/arch:AVX -Qipo -O3 -Qprec-div- -Qparallel -Qansi-alias
-Qopt-prefetch -Qauto-ilp32 /F1000000000
```



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Peak Compiler Invocation

C benchmarks:

icl -Qvc10 -Qstd=c99

C++ benchmarks:

icl -Qvc10

Fortran benchmarks:

ifort

Benchmarks using both Fortran and C:

icl -Qvc10 -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:AVX(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:AVX(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:AVX(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: basepeak = yes

465.tonto: /arch:AVX(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: basepeak = yes

454.calculix: basepeak = yes

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-ic13.1-official-windows.20130924.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic13.1-official-windows.20130924.xml>

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For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

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