SPEC® CFP2006 Result
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ASUSTeK Computer Inc.
(Test Sponsor: Intel Corporation)

ASUS F2A85-M PRO Motherboard (AMD A10-6800K APU with Radeon HD Graphics)

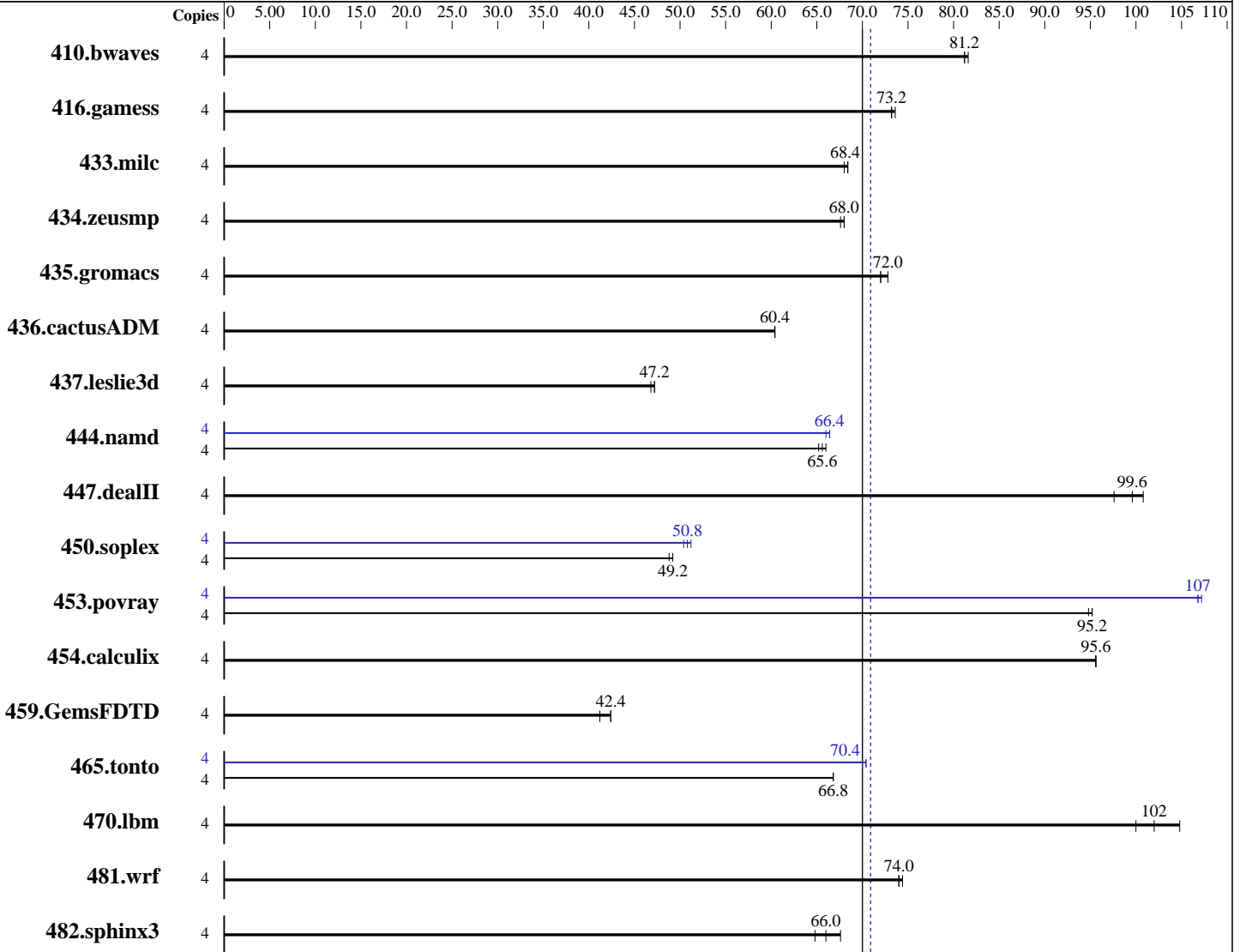$SPECfp^®\_rate2006 =$ 70.9

$SPECfp\_rate\_base2006 =$ 70.0

CPU2006 license: 13	**Test date:** Jul-2014
Test sponsor: Intel Corporation	**Hardware Availability:** Aug-2013
Tested by: Intel Corporation	**Software Availability:** Oct-2013

Copies   0   5.00   10.0   15.0   20.0   25.0   30.0   35.0   40.0   45.0   50.0   55.0   60.0   65.0   70.0   75.0   80.0   85.0   90.0   95.0   100   105   110

Benchmark	Copies	Result
410.bwaves	4	81.2
416.gamess	4	73.2
433.milc	4	68.4
434.zeusmp	4	68.0
435.gromacs	4	72.0
436.cactusADM	4	60.4
437.leslie3d	4	47.2
444.namd	4 / 4	66.4 / 65.6
447.dealII	4	99.6
450.soplex	4 / 4	50.8 / 49.2
453.povray	4 / 4	107 / 95.2
454.calculix	4	95.6
459.GemsFDTD	4	42.4
465.tonto	4 / 4	70.4 / 66.8
470.lbm	4	102
481.wrf	4	74.0
482.sphinx3	4	66.0

SPECfp_rate_base2006 = 70.0

SPECfp_rate2006 = 70.9

Hardware
CPU Name:	AMD A10-6800K
CPU Characteristics:	AMD Turbo CORE technology up to 4.40 GHz
CPU MHz:	4100
FPU:	Integrated
CPU(s) enabled:	4 cores, 1 chip, 4 cores/chip
CPU(s) orderable:	1 chip
Primary Cache:	128 KB I on chip per chip, 64 KB I shared / 2 cores; 16 KB D on chip per core
Secondary Cache:	4 MB I+D on chip per chip, 2 MB shared / 2 cores

Continued on next page

Software
Operating System:	Microsoft Windows 8.1 Pro 6.3.9600 N/A Build 9600
Compiler:	C/C++: Version 14.0.1.139 of Intel C++ Studio XE for Windows; Fortran: Version 14.0.1.139 of Intel Fortran Studio XE for Windows; Libraries: Version 16.00.30319.01 of Microsoft Visual Studio 2010 Professional SP1
Auto Parallel:	No

Continued on next page

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L3 Cache:	None	File System:	NTFS
Other Cache:	None	System State:	Default
Memory:	8 GB (2 x 4 GB 2Rx4 PC3-12800U-11)	Base Pointers:	32/64-bit
Disk Subsystem:	1 TB Seagate SATA HDD, 7200 RPM	Peak Pointers:	32/64-bit
Other Hardware:	None	Other Software:	SmartHeap Library Version 10.0 from http://www.microquill.com/

Results Table

Benchmark	Copies	Base Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Peak Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	4	**671**	**81.2**	671	81.2	667	81.6	4	**671**	**81.2**	671	81.2	667	81.6
416.gamess	4	**1068**	**73.2**	1068	73.2	1064	73.6	4	**1068**	**73.2**	1068	73.2	1064	73.6
433.milc	4	538	68.4	541	68.0	**538**	**68.4**	4	538	68.4	541	68.0	**538**	**68.4**
434.zeusmp	4	**535**	**68.0**	534	68.0	539	67.6	4	**535**	**68.0**	534	68.0	539	67.6
435.gromacs	4	393	72.8	396	72.0	**396**	**72.0**	4	393	72.8	396	72.0	**396**	**72.0**
436.cactusADM	4	792	60.4	793	60.4	**793**	**60.4**	4	792	60.4	793	60.4	**793**	**60.4**
437.leslie3d	4	794	47.2	800	46.8	**797**	**47.2**	4	794	47.2	800	46.8	**797**	**47.2**
444.namd	4	487	66.0	**488**	**65.6**	491	65.2	4	**483**	**66.4**	483	66.4	487	66.0
447.dealII	4	455	101	**459**	**99.6**	468	97.6	4	455	101	**459**	**99.6**	468	97.6
450.soplex	4	**681**	**49.2**	679	49.2	682	48.8	4	663	50.4	654	51.2	**659**	**50.8**
453.povray	4	225	94.8	**224**	**95.2**	223	95.2	4	198	107	**199**	**107**	199	107
454.calculix	4	346	95.6	**345**	**95.6**	345	95.6	4	346	95.6	**345**	**95.6**	345	95.6
459.GemsFDTD	4	**1003**	**42.4**	999	42.4	1030	41.2	4	**1003**	**42.4**	999	42.4	1030	41.2
465.tonto	4	588	66.8	**588**	**66.8**	589	66.8	4	563	70.0	**560**	**70.4**	558	70.4
470.lbm	4	524	105	551	100	**538**	**102**	4	524	105	551	100	**538**	**102**
481.wrf	4	602	74.4	**603**	**74.0**	605	74.0	4	602	74.4	**603**	**74.0**	605	74.0
482.sphinx3	4	1204	64.8	**1181**	**66.0**	1153	67.6	4	1204	64.8	**1181**	**66.0**	1153	67.6

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 14.0 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)
```

Submit Notes

```
Processes were bound to specific processors using the start command with the /affinity switch.
The config file option 'submit' was used to generate the affinity mask for each process.
```

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Platform Notes

```
Sysinfo program C:\SPEC14.0/Docs/sysinfo
$Rev: 6775 $ $Date:: 2011-08-16 #$ \8787f7622badcf24e01c368b1db4377c
running on Clt08606E747CCD Tue Jul  1 21:27:05 2014

This section contains SUT (System Under Test) info as seen by
some common utilities.  To remove or add to this section, see:
  http://www.spec.org/cpu2006/Docs/config.html#sysinfo

Trying 'systeminfo'
OS Name      : Microsoft Windows 8.1 Pro
OS Version   : 6.3.9600 N/A Build 9600
System Manufacturer: System manufacturer
System Model  : System Product Name
Processor(s)  : 1 Processor(s) Installed.
    [01]: AMD64 Family 21 Model 19 Stepping 1 AuthenticAMD ~4100 Mhz
BIOS Version  : American Megatrends Inc. 6303, 8/13/2013
Total Physical Memory: 7,366 MB

Trying 'wmic cpu get /value'
DeviceID      : CPU0
L2CacheSize   : 4096
L3CacheSize   : 0
MaxClockSpeed : 4100
Name          : AMD A10-6800K APU with Radeon(tm) HD Graphics
NumberOfCores : 2
NumberOfLogicalProcessors: 4

(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
```

General Notes

```
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
```

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Base Compiler Invocation (Continued)

Fortran benchmarks:
```
ifort
```

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- -Qansi-alias -Qopt-prefetch
-Qauto-ilp32 /F1000000000          -link /FORCE:MULTIPLE
```

C++ benchmarks:
```
/arch:AVX -Qipo -O3 -Qprec-div- -Qansi-alias -Qopt-prefetch
-Qcxx-features -Qauto-ilp32 /F1000000000 shlW64M.lib
              -link /FORCE:MULTIPLE
```

Fortran benchmarks:
```
/arch:AVX -Qipo -O3 -Qprec-div- -Qansi-alias -Qopt-prefetch
/F1000000000          -link /FORCE:MULTIPLE
```

Benchmarks using both Fortran and C:
```
/arch:AVX -Qipo -O3 -Qprec-div- -Qansi-alias -Qopt-prefetch
-Qauto-ilp32 /F1000000000          -link /FORCE:MULTIPLE
```

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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
            shlW64M.lib           -link /FORCE:MULTIPLE
```

    447.dealII: `basepeak = yes`

    450.soplex: `/arch:AVX(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2)`
```
            -Qipo -O3 -Qauto-ilp32 /F1000000000 shlW64M.lib
                    -link /FORCE:MULTIPLE
```

    453.povray: `/arch:AVX(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2)`
```
            -Qipo -O3 -Qprec-div- -Qopt-prefetch -Qauto-ilp32
            /F1000000000 shlW64M.lib           -link /FORCE:MULTIPLE
```

Fortran benchmarks:

    410.bwaves: `basepeak = yes`

Continued on next page

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Peak Optimization Flags (Continued)

416.gamess: basepeak = yes

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 /F1000000000
-link /FORCE:MULTIPLE

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-ic14.0-official-windows.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/Intel-ic14.0-official-windows.xml

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

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