SPEC® CFP2006 Result

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ASUSTeK Computer Inc.

(Test Sponsor: Intel Corporation)

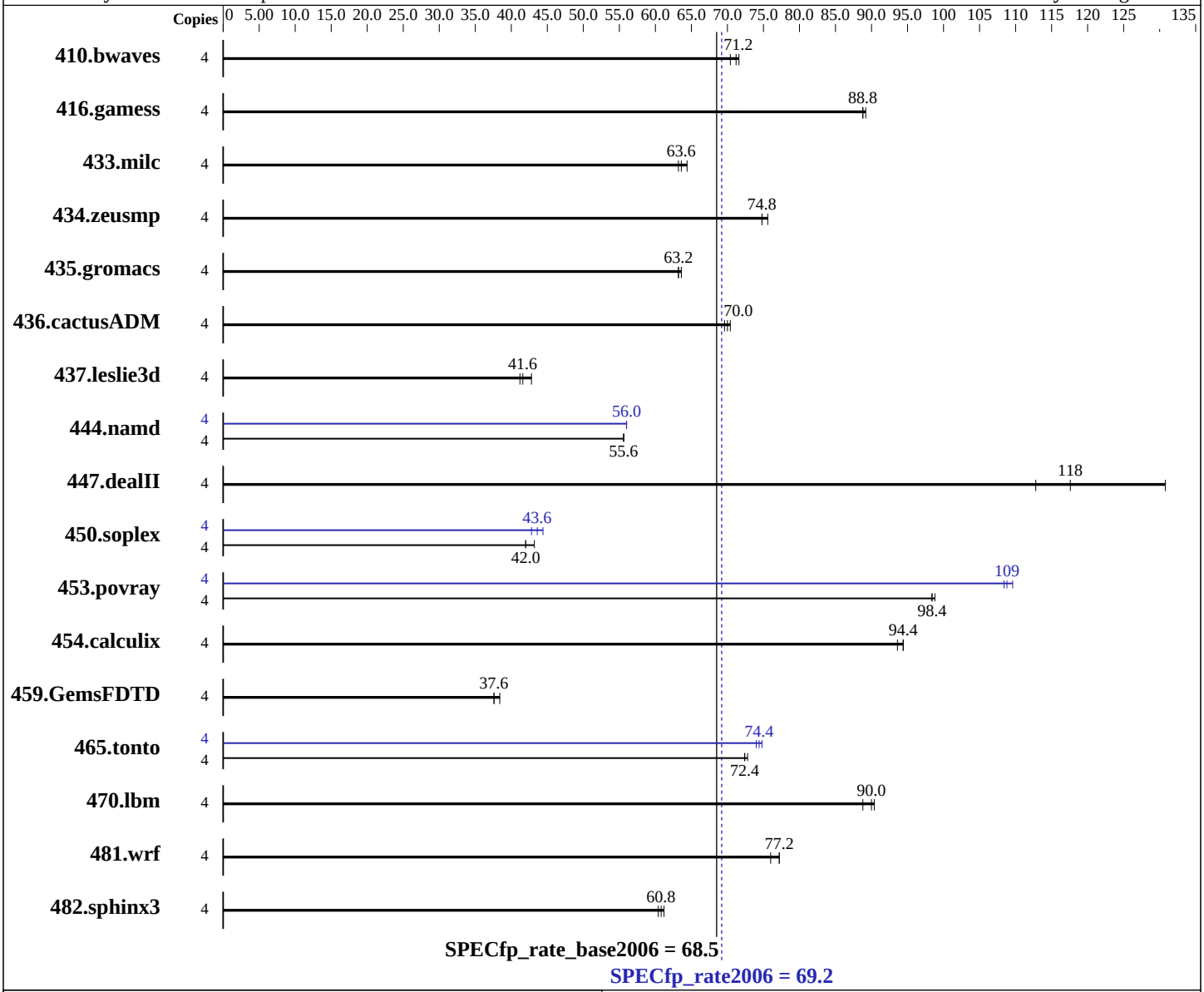
ASUS A88X-PRO Motherboard (AMD A8-8650 with Radeon R7 Graphics)

SPECfp®_rate2006 = 69.2

SPECfp_rate_base2006 = 68.5

CPU2006 license: 13
Test sponsor: Intel Corporation
Tested by: Intel Corporation

Test date: May-2016
Hardware Availability: Dec-2015
Software Availability: Aug-2015



Hardware

CPU Name:	AMD A8-8650
CPU Characteristics:	AMD Turbo CORE technology up to 3.80 GHz
CPU MHz:	3200
FPU:	Integrated
CPU(s) enabled:	4 cores, 1 chip, 4 cores/chip
CPU(s) orderable:	1 chip
Primary Cache:	192 KB I on chip per chip, 96 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

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Software

Operating System:	Microsoft Windows 7 Ultimate 6.1.7601 Service Pack 1 Build 7601
Compiler:	C/C++: Version 16.0.0.110 of Intel C++ Studio XE for Windows; Fortran: Version 16.0.0.110 of Intel Fortran Studio XE for Windows; Libraries: Version 18.00.30723 of Microsoft Visual Studio 2013
Auto Parallel:	No

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L3 Cache: None
Other Cache: None
Memory: 8 GB (2 x 4 GB 2Rx8 PC3-10600U-11)
Disk Subsystem: Seagate Barracuda 250 GB SATA, 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 11.0 from http://www.microquill.com/

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	4	771	70.4	761	71.6	**763**	**71.2**	4	771	70.4	761	71.6	**763**	**71.2**
416.gamess	4	**881**	**88.8**	878	89.2	881	88.8	4	**881**	**88.8**	878	89.2	881	88.8
433.milc	4	580	63.2	**578**	**63.6**	569	64.4	4	580	63.2	**578**	**63.6**	569	64.4
434.zeusmp	4	481	75.6	487	74.8	**486**	**74.8**	4	481	75.6	487	74.8	**486**	**74.8**
435.gromacs	4	**452**	**63.2**	452	63.2	450	63.6	4	**452**	**63.2**	452	63.2	450	63.6
436.cactusADM	4	678	70.4	**684**	**70.0**	686	69.6	4	678	70.4	**684**	**70.0**	686	69.6
437.leslie3d	4	880	42.8	**907**	**41.6**	912	41.2	4	880	42.8	**907**	**41.6**	912	41.2
444.namd	4	**577**	**55.6**	577	55.6	578	55.6	4	574	56.0	572	56.0	**573**	**56.0**
447.dealII	4	406	113	**389**	**118**	350	131	4	406	113	**389**	**118**	350	131
450.soplex	4	775	43.2	**792**	**42.0**	795	42.0	4	778	42.8	753	44.4	**765**	**43.6**
453.povray	4	217	98.4	**217**	**98.4**	215	98.8	4	196	108	**196**	**109**	194	110
454.calculix	4	**350**	**94.4**	350	94.4	352	93.6	4	**350**	**94.4**	350	94.4	352	93.6
459.GemsFDTD	4	1106	38.4	**1130**	**37.6**	1132	37.6	4	1106	38.4	**1130**	**37.6**	1132	37.6
465.tonto	4	543	72.4	541	72.8	**543**	**72.4**	4	**528**	**74.4**	532	74.0	526	74.8
470.lbm	4	**611**	**90.0**	609	90.4	618	88.8	4	**611**	**90.0**	609	90.4	618	88.8
481.wrf	4	578	77.2	**580**	**77.2**	589	76.0	4	578	77.2	**580**	**77.2**	589	76.0
482.sphinx3	4	1275	61.2	**1281**	**60.8**	1293	60.4	4	1275	61.2	**1281**	**60.8**	1293	60.4

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 16.0 was set up to
generate 64-bit binaries with the command:
"psxevars.bat intel64" (shortcut provided in the Intel(r)
Parallel Studio XE 2016 program folder)
```

Platform Notes

```
Sysinfo program C:\SPEC16.0/Docs/sysinfo
$Rev: 6775 $ $Date:: 2011-08-16 #$ \8787f7622badcf24e01c368b1db4377c
running on CltE03F49ACBFDE Fri May 27 08:26:38 2016

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

Continued on next page

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 56 Stepping 1 AuthenticAMD ~3200 Mhz
  BIOS Version   : American Megatrends Inc. 2502, 12/11/2015
  Total Physical Memory: 7,108 MB

  Trying 'wmic cpu get /value'
  DeviceID       : CPU0
  L2CacheSize    : 25359
  L3CacheSize    : 0
  MaxClockSpeed : 3200
  Name           : AMD A8-8650 Radeon R7, 10 Compute Cores 4C+6G
  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

```
 450.soplex (peak): "getline_test" src.alt was used.

 447.dealII (base): "max_prototype" src.alt was used.
 447.dealII (base): "cxx11_make_pair" src.alt was used.

 450.soplex (base): "getline_test" src.alt was used.

 447.dealII (base): "max_prototype" src.alt was used.
 447.dealII (base): "cxx11_make_pair" src.alt was used.

  Binaries compiled on a system with 1x Intel Xeon E5-2699 v3 CPU
  + 64GB memory using Windows 8.1 Enterprise 64-bit
```

Base Compiler Invocation

C benchmarks:

```
    icl -Qvc12 -Qstd=c99
```

Continued on next page

Base Compiler Invocation (Continued)

C++ benchmarks:
icl -Qvc12

Fortran benchmarks:
ifort

Benchmarks using both Fortran and C:
icl -Qvc12 -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 -DSPEC_CPU_BOOST_CONFIG_MSC_VER -DSPEC_NEED_ALGORITHM
450.soplex: -DSPEC_CPU_P64 -DSPEC_GETLINE_TEST
453.povray: -DSPEC_CPU_P64
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

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Base Optimization Flags (Continued)

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

Peak Compiler Invocation

C benchmarks:
icl -Qvc12 -Qstd=c99

C++ benchmarks:
icl -Qvc12

Fortran benchmarks:
ifort

Benchmarks using both Fortran and C:
icl -Qvc12 -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

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Peak Optimization Flags (Continued)

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

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-ic16.0-official-windows.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/Intel-ic16.0-official-windows.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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