SPEC® CFP2006 Result

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ASUSTeK Computer Inc.

(Test Sponsor: Intel Corporation)

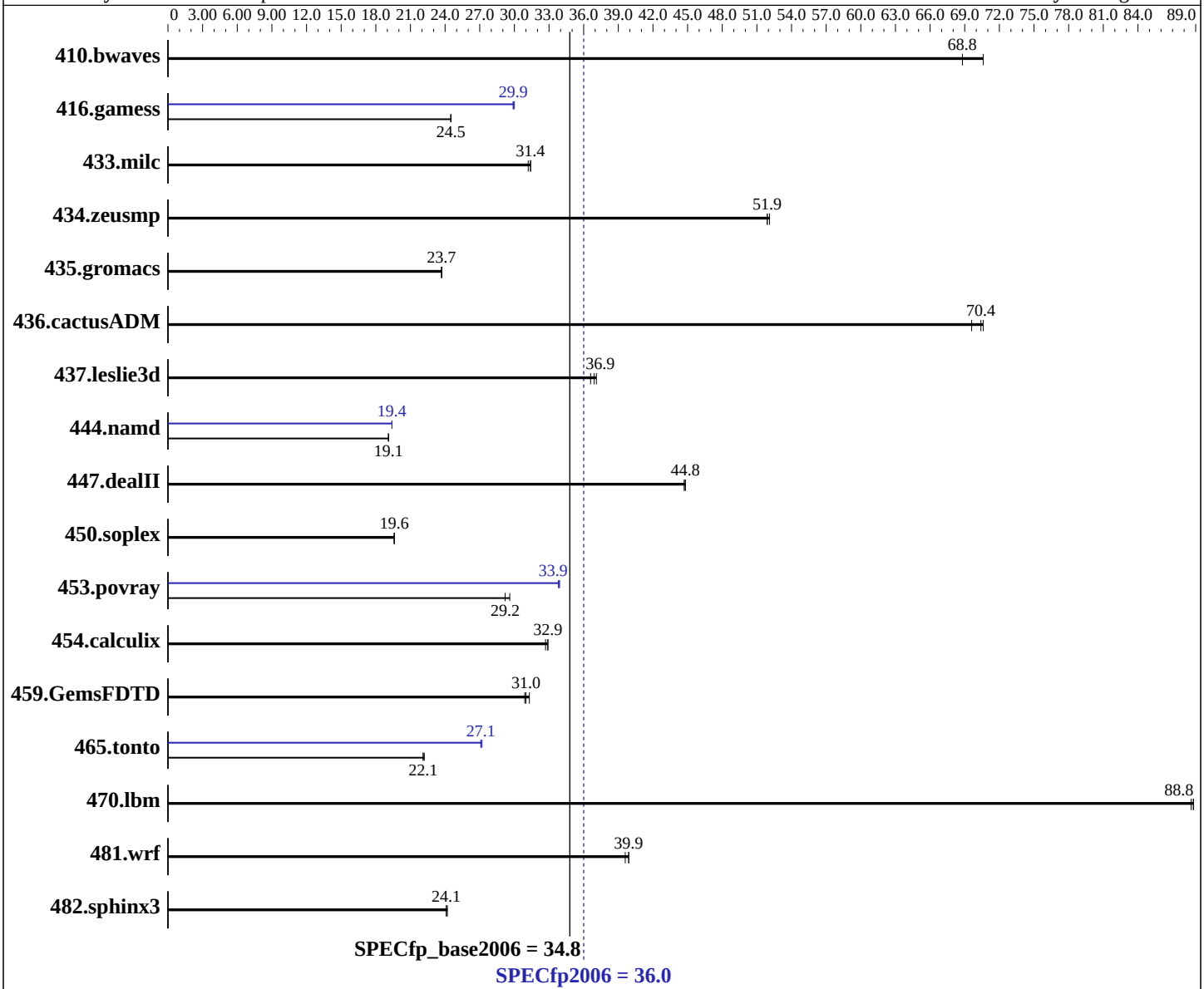
ASUS A88X-PRO Motherboard (AMD A10-7800 with Radeon R7 Graphics)

SPECfp®2006 = 36.0

SPECfp_base2006 = 34.8

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

Test date: Jul-2016
Hardware Availability: Jul-2014
Software Availability: Aug-2015



Hardware

CPU Name:	AMD A10-7800
CPU Characteristics:	AMD Turbo CORE technology up to 3.90 GHz
CPU MHz:	3500
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:	Yes

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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					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	**197**	**68.8**	192	70.6	198	68.8	**197**	**68.8**	192	70.6	198	68.8
416.gamess	800	24.5	**799**	**24.5**	798	24.5	**655**	**29.9**	656	29.9	654	30.0
433.milc	**293**	**31.4**	292	31.4	294	31.2	**293**	**31.4**	292	31.4	294	31.2
434.zeusmp	175	52.1	**175**	**51.9**	175	51.9	175	52.1	**175**	**51.9**	175	51.9
435.gromacs	**301**	**23.7**	301	23.7	301	23.7	**301**	**23.7**	301	23.7	301	23.7
436.cactusADM	169	70.6	**170**	**70.4**	172	69.6	169	70.6	**170**	**70.4**	172	69.6
437.leslie3d	257	36.6	**255**	**36.9**	253	37.1	257	36.6	**255**	**36.9**	253	37.1
444.namd	**420**	**19.1**	421	19.1	420	19.1	413	19.4	413	19.4	**413**	**19.4**
447.dealII	255	44.8	256	44.7	**256**	**44.8**	255	44.8	256	44.7	**256**	**44.8**
450.soplex	425	19.6	425	19.6	**425**	**19.6**	425	19.6	425	19.6	**425**	**19.6**
453.povray	182	29.2	180	29.6	**182**	**29.2**	**157**	**33.9**	157	33.9	157	33.8
454.calculix	**251**	**32.9**	251	32.9	252	32.7	**251**	**32.9**	251	32.9	252	32.7
459.GemsFDTD	343	30.9	339	31.3	**342**	**31.0**	343	30.9	339	31.3	**342**	**31.0**
465.tonto	446	22.1	443	22.2	**445**	**22.1**	362	27.2	364	27.1	**363**	**27.1**
470.lbm	155	88.8	155	88.6	**155**	**88.8**	155	88.8	155	88.6	**155**	**88.8**
481.wrf	**280**	**39.9**	280	39.9	282	39.6	**280**	**39.9**	280	39.9	282	39.6
482.sphinx3	809	24.1	**808**	**24.1**	806	24.2	809	24.1	**808**	**24.1**	806	24.2

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 Clt1C872C5DF572 Sat Jul  2 10:40:37 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 48 Stepping 1 AuthenticAMD ~3500 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 : 3500
    Name           : AMD A10-7800 Radeon R7, 12 Compute Cores 4C+8G
    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 (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.

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.

 OMP_NUM_THREADS set to number of processors cores
 KMP_AFFINITY set to granularity=fine,scatter
 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
```

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- -Qparallel -Qansi-alias
-Qopt-prefetch /F1000000000
```

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

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

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Base Optimization Flags (Continued)

Benchmarks using both Fortran and C:
`/arch:AVX -Qipo -O3 -Qprec-div- -Qparallel -Qansi-alias -Qopt-prefetch /F1000000000`

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 /F1000000000 shlW64M.lib -link /FORCE:MULTIPLE`

447.dealII: `basepeak = yes`

450.soplex: `basepeak = yes`

Continued on next page

Peak Optimization Flags (Continued)

453.povray: /arch:AVX(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2) -Qipo -O3 -Qprec-div- -Qunroll4 -Qansi-alias /F1000000000 shlW64M.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

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-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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