# SPEC® CFP2006 Result

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## ASUSTeK Computer Inc.

(Test Sponsor: Intel Corporation)

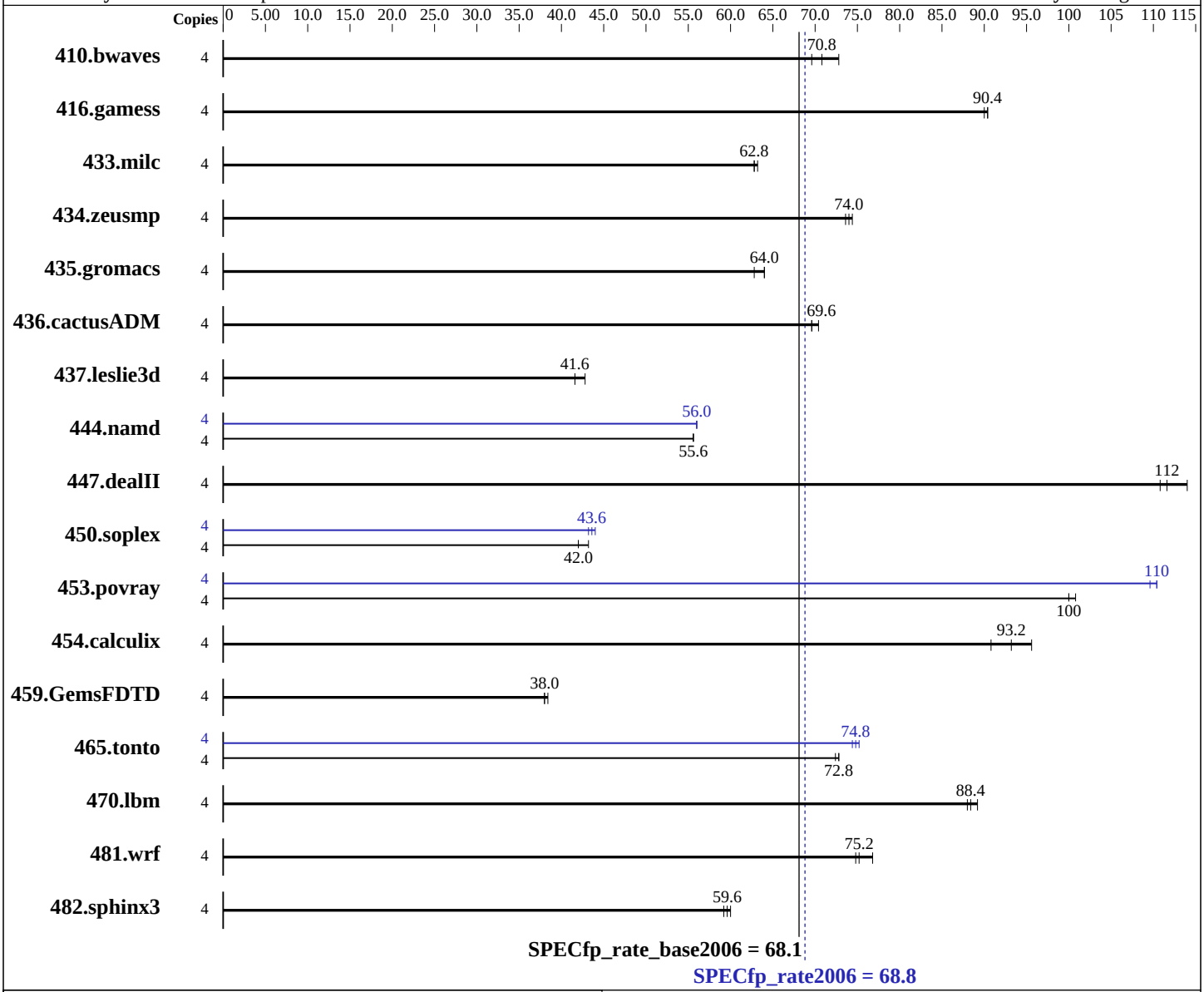
ASUS A88X-PRO Motherboard (AMD A10 PRO-7800B with Radeon R7 Graphics)

SPECfp®_rate2006 = 68.8

SPECfp_rate_base2006 = 68.1

**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 PRO-7800B |
| 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 |

Continued on next page

## 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 | 748 | 72.8 | 782 | 69.6 | **770** | **70.8** | 4 | 748 | 72.8 | 782 | 69.6 | **770** | **70.8** |
| 416.gamess | 4 | 870 | 90.0 | **867** | **90.4** | 866 | 90.4 | 4 | 870 | 90.0 | **867** | **90.4** | 866 | 90.4 |
| 433.milc | 4 | 585 | 62.8 | 580 | 63.2 | **584** | **62.8** | 4 | 585 | 62.8 | 580 | 63.2 | **584** | **62.8** |
| 434.zeusmp | 4 | 489 | 74.4 | 493 | 73.6 | **493** | **74.0** | 4 | 489 | 74.4 | 493 | 73.6 | **493** | **74.0** |
| 435.gromacs | 4 | 456 | 62.8 | **447** | **64.0** | 447 | 64.0 | 4 | 456 | 62.8 | **447** | **64.0** | 447 | 64.0 |
| 436.cactusADM | 4 | **688** | **69.6** | 678 | 70.4 | 689 | 69.6 | 4 | **688** | **69.6** | 678 | 70.4 | 689 | 69.6 |
| 437.leslie3d | 4 | **902** | **41.6** | 878 | 42.8 | 903 | 41.6 | 4 | **902** | **41.6** | 878 | 42.8 | 903 | 41.6 |
| 444.namd | 4 | **576** | **55.6** | 575 | 55.6 | 576 | 55.6 | 4 | 571 | 56.0 | **571** | **56.0** | 573 | 56.0 |
| 447.dealII | 4 | 413 | 111 | 402 | 114 | **410** | **112** | 4 | 413 | 111 | 402 | 114 | **410** | **112** |
| 450.soplex | 4 | 797 | 42.0 | 771 | 43.2 | **791** | **42.0** | 4 | **763** | **43.6** | 758 | 44.0 | 775 | 43.2 |
| 453.povray | 4 | **213** | **100** | 213 | 100 | 211 | 101 | 4 | **193** | **110** | 193 | 110 | 194 | 110 |
| 454.calculix | 4 | **354** | **93.2** | 345 | 95.6 | 364 | 90.8 | 4 | **354** | **93.2** | 345 | 95.6 | 364 | 90.8 |
| 459.GemsFDTD | 4 | 1103 | 38.4 | 1121 | 38.0 | **1118** | **38.0** | 4 | 1103 | 38.4 | 1121 | 38.0 | **1118** | **38.0** |
| 465.tonto | 4 | **541** | **72.8** | 542 | 72.4 | 541 | 72.8 | 4 | 528 | 74.4 | 524 | 75.2 | **525** | **74.8** |
| 470.lbm | 4 | 626 | 88.0 | 617 | 89.2 | **623** | **88.4** | 4 | 626 | 88.0 | 617 | 89.2 | **623** | **88.4** |
| 481.wrf | 4 | 598 | 74.8 | 581 | 76.8 | **593** | **75.2** | 4 | 598 | 74.8 | 581 | 76.8 | **593** | **75.2** |
| 482.sphinx3 | 4 | 1317 | 59.2 | 1302 | 60.0 | **1312** | **59.6** | 4 | 1317 | 59.2 | 1302 | 60.0 | **1312** | **59.6** |

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 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 Sun Jul  3 06:34:09 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 PRO-7800B 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 (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
```

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## 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

Continued on next page

## 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

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- -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 other inquiries, please contact webmaster@spec.org.

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