SPEC® CFP2006 Result

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ASUSTeK Computer Inc.

(Test Sponsor: Intel Corporation)

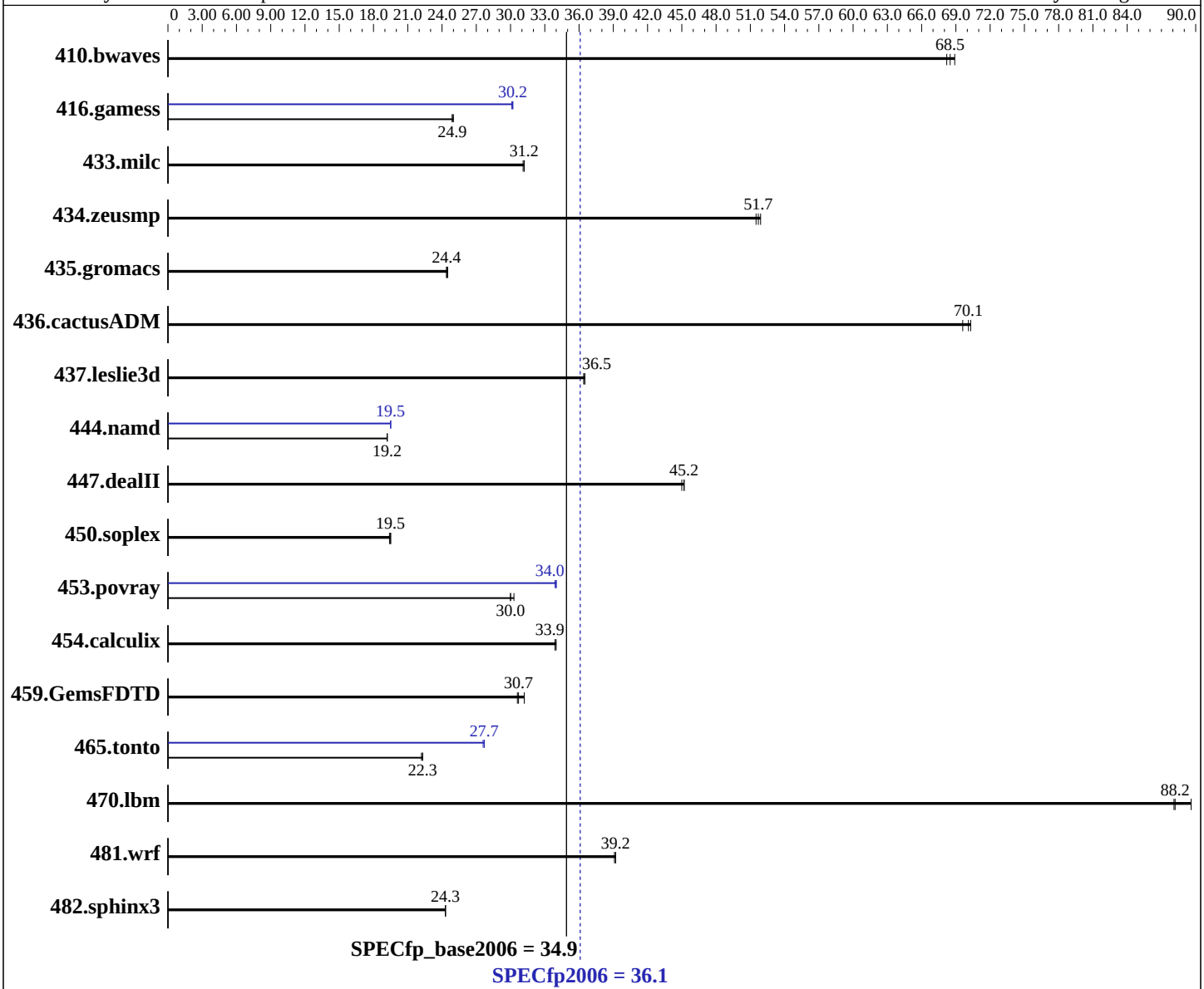
ASUS A88X-PRO Motherboard (AMD A8 PRO-8650B with Radeon R7 Graphics)

SPECfp®2006 = 36.1

SPECfp_base2006 = 34.9

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

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



Hardware

CPU Name:	AMD A8 PRO-8650B
CPU Characteristics:	AMD Turbo CORE technology up to 3.90 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:	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	**198**	**68.5**	199	68.2	197	68.9	**198**	**68.5**	199	68.2	197	68.9
416.gamess	**785**	**24.9**	784	25.0	788	24.9	**648**	**30.2**	650	30.1	648	30.2
433.milc	295	31.1	294	31.2	**294**	**31.2**	295	31.1	294	31.2	**294**	**31.2**
434.zeusmp	**176**	**51.7**	177	51.5	175	51.9	**176**	**51.7**	177	51.5	175	51.9
435.gromacs	292	24.5	**292**	**24.4**	292	24.4	292	24.5	**292**	**24.4**	292	24.4
436.cactusADM	172	69.6	**170**	**70.1**	170	70.3	172	69.6	**170**	**70.1**	170	70.3
437.leslie3d	257	36.5	**258**	**36.5**	258	36.4	257	36.5	**258**	**36.5**	258	36.4
444.namd	**418**	**19.2**	418	19.2	418	19.2	**411**	**19.5**	411	19.5	411	19.5
447.dealII	254	45.0	**253**	**45.2**	253	45.2	254	45.0	**253**	**45.2**	253	45.2
450.soplex	427	19.5	429	19.4	**428**	**19.5**	427	19.5	429	19.4	**428**	**19.5**
453.povray	176	30.3	**178**	**30.0**	178	30.0	**157**	**34.0**	157	34.0	157	33.9
454.calculix	**243**	**33.9**	243	33.9	243	34.0	**243**	**33.9**	243	33.9	243	34.0
459.GemsFDTD	340	31.2	**345**	**30.7**	346	30.6	340	31.2	**345**	**30.7**	346	30.6
465.tonto	443	22.2	**441**	**22.3**	441	22.3	**356**	**27.7**	356	27.6	355	27.7
470.lbm	153	89.6	**156**	**88.2**	156	88.1	153	89.6	**156**	**88.2**	156	88.1
481.wrf	**285**	**39.2**	286	39.1	285	39.2	**285**	**39.2**	286	39.1	285	39.2
482.sphinx3	**802**	**24.3**	801	24.3	802	24.3	**802**	**24.3**	801	24.3	802	24.3

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 Tue Jul 26 07:25:14 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 PRO A8-8650B 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 (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

Continued on next page

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`

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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- -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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