SPEC® CFP2006 Result

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Intel Corporation

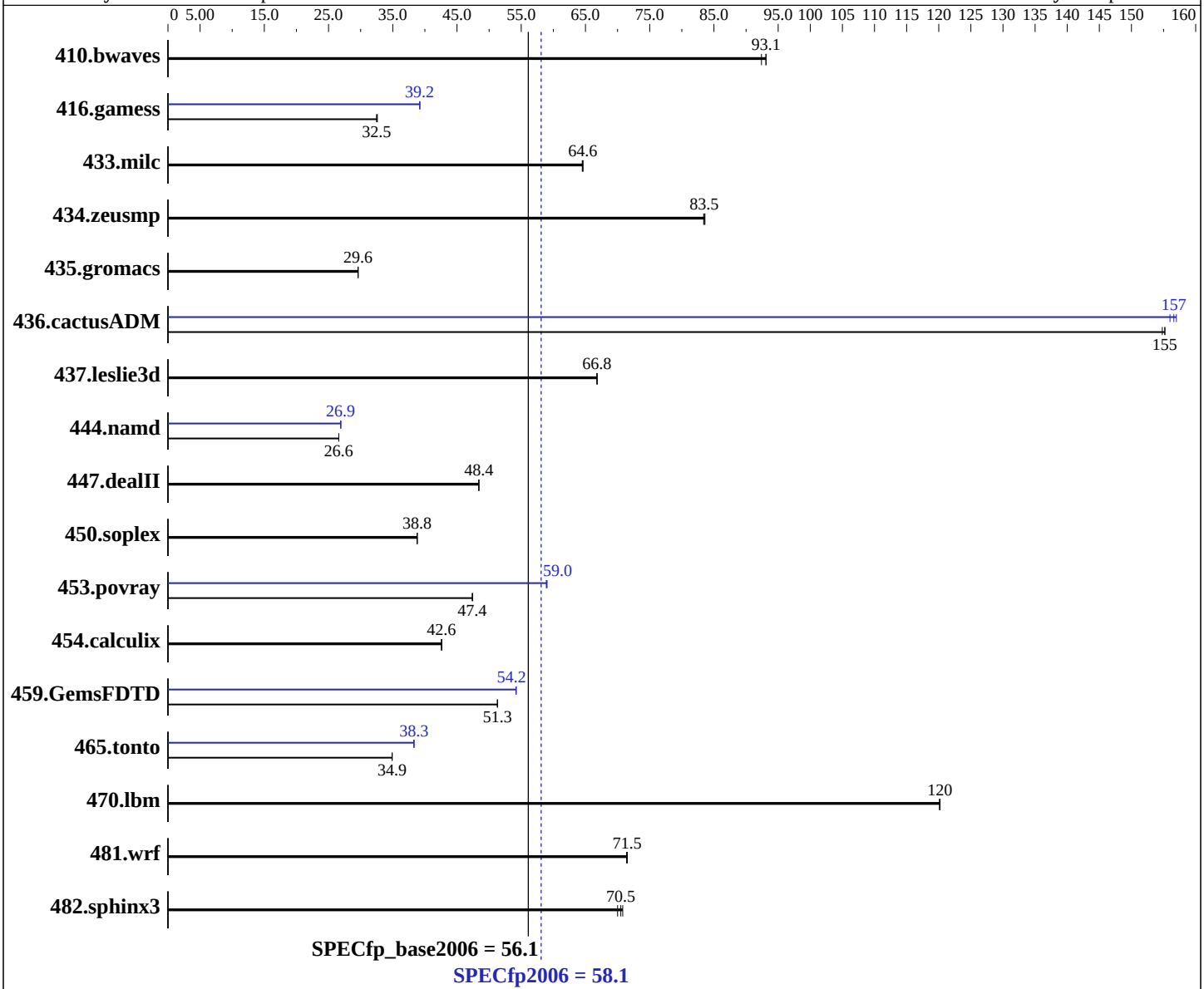
Intel DH67BLB3 motherboard (Intel Core i7-2700K)

SPECfp®2006 = 58.1

SPECfp_base2006 = 56.1

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

Test date: Nov-2011
Hardware Availability: Nov-2011
Software Availability: Apr-2011



Hardware

CPU Name:	Intel Core i7-2700K
CPU Characteristics:	Intel Turbo Boost Technology up to 3.90 GHz
CPU MHz:	3500
FPU:	Integrated
CPU(s) enabled:	4 cores, 1 chip, 4 cores/chip, 2 threads/core
CPU(s) orderable:	1 chip
Primary Cache:	32 KB I + 32 KB D on chip per core
Secondary Cache:	256 KB I+D on chip per core

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Software

Operating System:	Windows 7 Ultimate SP1 (64-bit)
Compiler:	C/C++: Version 12.0.3.176 of Intel C++ Studio XE for Windows; Fortran: Version 12.0.3.176 of Intel Visual Fortran Studio XE for Windows; Libraries: Version 15.00.30729.01 of Microsoft Visual Studio 2008 Professional SP1
Auto Parallel:	Yes
File System:	NTFS

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L3 Cache: 8 MB I+D on chip per chip
Other Cache: None
Memory: 8 GB (2 x 4 GB 2Rx8 PC3-10600U-11)
Disk Subsystem: Intel 160 GB SSD
Other Hardware: None

System State: Default
Base Pointers: 32/64-bit
Peak Pointers: 32/64-bit
Other Software: SmartHeap Library Version 9.01 from http://www.microquill.com/

Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	147	92.4	146	93.1	**146**	**93.1**	147	92.4	146	93.1	**146**	**93.1**
416.gamess	602	32.5	**602**	**32.5**	602	32.6	**500**	**39.2**	500	39.2	500	39.2
433.milc	142	64.6	**142**	**64.6**	142	64.5	142	64.6	**142**	**64.6**	142	64.5
434.zeusmp	109	83.6	**109**	**83.5**	109	83.4	109	83.6	**109**	**83.5**	109	83.4
435.gromacs	241	29.6	**241**	**29.6**	241	29.6	241	29.6	**241**	**29.6**	241	29.6
436.cactusADM	77.0	155	**77.0**	**155**	77.2	155	76.6	156	76.1	157	**76.3**	**157**
437.leslie3d	141	66.8	**141**	**66.8**	141	66.8	141	66.8	**141**	**66.8**	141	66.8
444.namd	301	26.6	301	26.6	**301**	**26.6**	298	26.9	298	26.9	**298**	**26.9**
447.dealII	236	48.4	**236**	**48.4**	236	48.4	236	48.4	**236**	**48.4**	236	48.4
450.soplex	215	38.8	215	38.8	**215**	**38.8**	215	38.8	215	38.8	**215**	**38.8**
453.povray	112	47.4	**112**	**47.4**	112	47.4	90.2	59.0	90.3	58.9	**90.2**	**59.0**
454.calculix	194	42.6	194	42.6	**194**	**42.6**	194	42.6	194	42.6	**194**	**42.6**
459.GemsFDTD	**207**	**51.3**	207	51.3	207	51.3	196	54.2	**196**	**54.2**	196	54.2
465.tonto	**282**	**34.9**	282	34.9	282	34.9	257	38.3	**257**	**38.3**	257	38.3
470.lbm	114	120	**114**	**120**	114	120	114	120	**114**	**120**	114	120
481.wrf	156	71.5	**156**	**71.5**	156	71.4	156	71.5	**156**	**71.5**	156	71.4
482.sphinx3	278	70.0	275	70.8	**276**	**70.5**	278	70.0	275	70.8	**276**	**70.5**

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

Component Notes

```
Tested systems can be used with Shin-G ATX case,
PC Power and Cooling 1200W power supply
System was configured with an ATI HD 6990 discrete graphics card
```

General Notes

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

Base Compiler Invocation

C benchmarks:
```
icl -Qvc9 -Qstd=c99
```

C++ benchmarks:
```
icl -Qvc9
```

Fortran benchmarks:
```
ifort
```

Benchmarks using both Fortran and C:
```
icl -Qvc9 -Qstd=c99 ifort
```

Base Portability Flags

410.bwaves: -DSPEC_CPU_P64 -names:lowercase
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
450.soplex: -DSPEC_CPU_P64
453.povray: -DSPEC_CPU_P64 -DSPEC_CPU_WINDOWS_ICL
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:
```
-QxAVX -Qipo -O3 -Qprec-div- -Qparallel -Qansi-alias -Qopt-prefetch
-Qauto-ilp32 /F1000000000
```

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

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

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Base Optimization Flags (Continued)

Benchmarks using both Fortran and C:
-QxAVX -Qipo -O3 -Qprec-div- -Qparallel -Qansi-alias -Qopt-prefetch
-Qauto-ilp32 /F1000000000

Peak Compiler Invocation

C benchmarks:
icl -Qvc9 -Qstd=c99

C++ benchmarks:
icl -Qvc9

Fortran benchmarks:
ifort

Benchmarks using both Fortran and C:
icl -Qvc9 -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: -QxAVX(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: basepeak = yes

453.povray: -QxAVX(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2) -Qipo
-O3 -Qprec-div- -Qunroll4 -Qansi-alias -Qauto-ilp32
/F1000000000 shlW64M.lib -link /FORCE:MULTIPLE

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Peak Optimization Flags (Continued)

Fortran benchmarks:

410.bwaves: basepeak = yes

416.gamess: -QxAVX(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: -QxAVX(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2) -Qipo -O3 -Qprec-div- -Qunroll2 -Qopt-prefetch -Qparallel /F1000000000

465.tonto: -QxAVX(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: -QxAVX(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2) -Qipo -O3 -Qprec-div- -Qopt-prefetch -Qparallel -Qunroll2 -Qauto-ilp32 /F1000000000

454.calculix: basepeak = yes

481.wrf: basepeak = yes

The flags files that were used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Intel-ic12-winx64-revC.20111012.html
http://www.spec.org/cpu2006/flags/Intel-Windows-Platform-Settings-revC.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic12-winx64-revC.20111012.xml
http://www.spec.org/cpu2006/flags/Intel-Windows-Platform-Settings-revC.xml

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Tested with SPEC CPU2006 v1.1.
Report generated on Thu Jul 24 01:23:04 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 6 December 2011.