SPEC® CFP2006 Result
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Intel Corporation

Intel DH57JG Motherboard (Intel Core i5-650)

$SPECfp^®2006 =$ 34.2

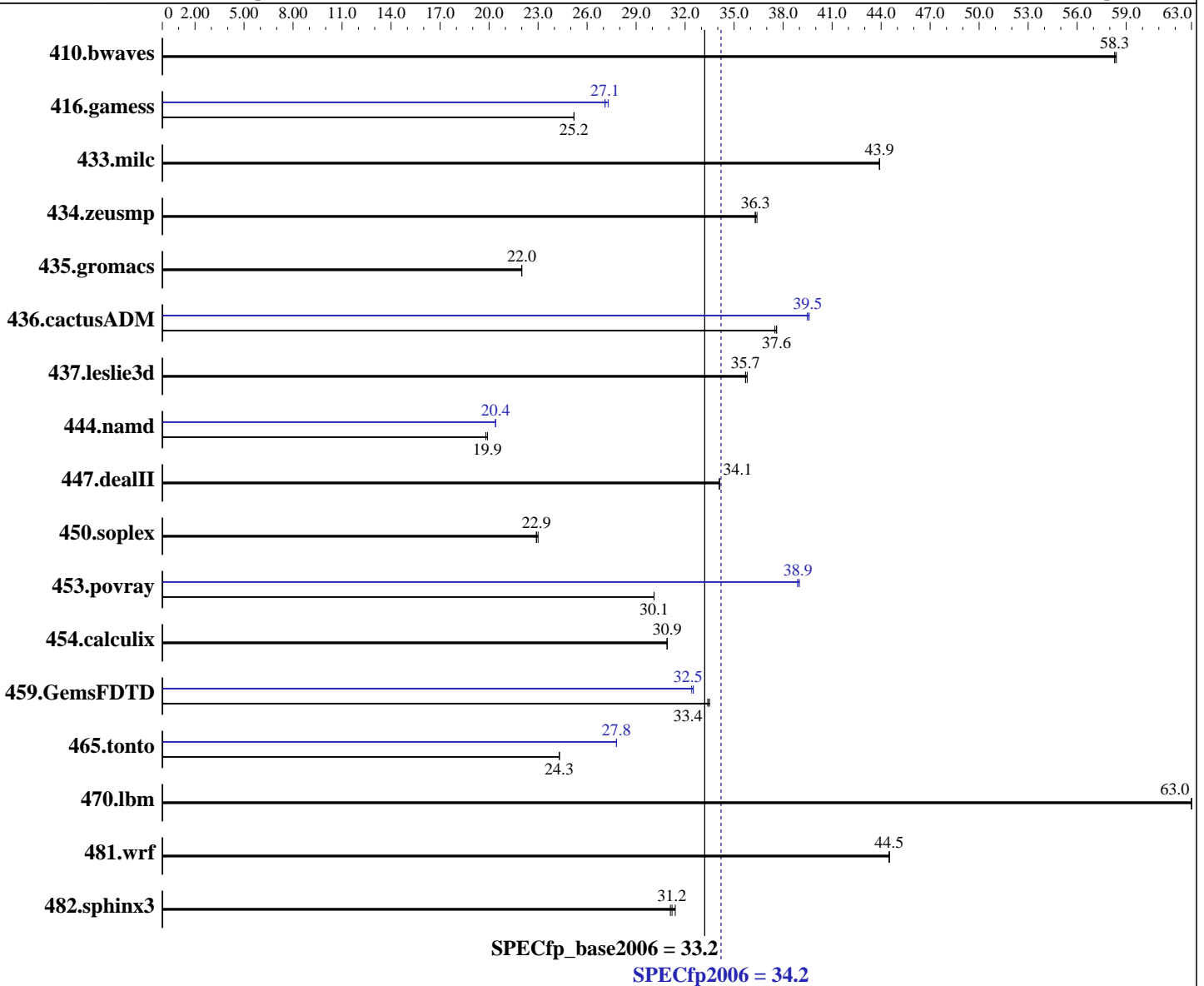$SPECfp\_base2006 =$ 33.2

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

Test date: Jul-2011
Hardware Availability: Jan-2010
Software Availability: Apr-2011

Benchmark	Value
410.bwaves	58.3
416.gamess	27.1 / 25.2
433.milc	43.9
434.zeusmp	36.3
435.gromacs	22.0
436.cactusADM	39.5 / 37.6
437.leslie3d	35.7
444.namd	20.4 / 19.9
447.dealII	34.1
450.soplex	22.9
453.povray	38.9 / 30.1
454.calculix	30.9
459.GemsFDTD	32.5 / 33.4
465.tonto	27.8 / 24.3
470.lbm	63.0
481.wrf	44.5
482.sphinx3	31.2

SPECfp_base2006 = 33.2
SPECfp2006 = 34.2

Hardware

CPU Name:	Intel Core i5-650
CPU Characteristics:	Intel Turbo Boost Technology up to 3.46 GHz
CPU MHz:	3200
FPU:	Integrated
CPU(s) enabled:	2 cores, 1 chip, 2 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

Continued on next page

Software

Operating System:	Windows 7 Ultimate (64-bit)
Compiler:	Intel C++ Compiler XE for Intel64 Version 12.0.3.176 Build 20110309 Intel Visual Fortran Compiler XE for Intel64 Version 12.0.3.176 Build 20110309 Microsoft Visual Studio 2008 Professional SP1 (for libraries)
Auto Parallel:	Yes
File System:	NTFS

Continued on next page

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L3 Cache:	4 MB I+D on chip per chip	System State:	Default
Other Cache:	None	Base Pointers:	32/64-bit
Memory:	4 GB (2 x 2 GB 2Rx8 PC3-10600U-9)	Peak Pointers:	32/64-bit
Disk Subsystem:	Seagate 1 TB SATA, 7200 RPM	Other Software:	SmartHeap Library Version 9.01 from
Other Hardware:	None		http://www.microquill.com/

Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	233	58.3	**233**	**58.3**	233	58.4	233	58.3	**233**	**58.3**	233	58.4
416.gamess	776	25.2	776	25.2	**776**	**25.2**	**722**	**27.1**	722	27.1	718	27.3
433.milc	209	43.9	**209**	**43.9**	209	43.9	209	43.9	**209**	**43.9**	209	43.9
434.zeusmp	**250**	**36.3**	250	36.3	250	36.4	**250**	**36.3**	250	36.3	250	36.4
435.gromacs	324	22.0	325	22.0	**324**	**22.0**	324	22.0	325	22.0	**324**	**22.0**
436.cactusADM	**318**	**37.6**	318	37.6	319	37.5	**303**	**39.5**	302	39.6	303	39.5
437.leslie3d	**263**	**35.7**	263	35.7	263	35.8	**263**	**35.7**	263	35.7	263	35.8
444.namd	**404**	**19.9**	404	19.8	404	19.9	393	20.4	**393**	**20.4**	393	20.4
447.dealII	**335**	**34.1**	335	34.1	335	34.1	**335**	**34.1**	335	34.1	335	34.1
450.soplex	364	22.9	363	23.0	**363**	**22.9**	364	22.9	363	23.0	**363**	**22.9**
453.povray	177	30.1	177	30.1	**177**	**30.1**	136	39.0	**137**	**38.9**	137	38.9
454.calculix	267	30.9	267	30.9	**267**	**30.9**	267	30.9	267	30.9	**267**	**30.9**
459.GemsFDTD	317	33.5	318	33.4	**317**	**33.4**	327	32.5	**327**	**32.5**	327	32.4
465.tonto	405	24.3	405	24.3	**405**	**24.3**	**354**	**27.8**	354	27.8	355	27.8
470.lbm	218	63.0	**218**	**63.0**	218	63.0	218	63.0	**218**	**63.0**	218	63.0
481.wrf	**251**	**44.5**	251	44.5	251	44.5	**251**	**44.5**	251	44.5	251	44.5
482.sphinx3	620	31.4	**624**	**31.2**	627	31.1	620	31.4	**624**	**31.2**	627	31.1

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

General Notes

```
   Tested systems can be used with Shin-G ATX case,
   PC Power and Cooling 1200W power supply
   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
```

Continued on next page

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$SPECfp2006 = 34.2$

$SPECfp\_base2006 = 33.2$

Base Compiler Invocation (Continued)

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:
```
-QxSSE4.2 -Qipo -O3 -Qprec-div- -Qparallel -Qansi-alias
-Qopt-prefetch -Qauto-ilp32 /F1000000000
```

C++ benchmarks:
```
-QxSSE4.2 -Qipo -O3 -Qprec-div- -Qparallel -Qansi-alias
-Qopt-prefetch -Qcxx-features -Qauto-ilp32 /F1000000000 shlW64M.lib
          -link /FORCE:MULTIPLE
```

Fortran benchmarks:
```
-QxSSE4.2 -Qipo -O3 -Qprec-div- -Qparallel -Qansi-alias
-Qopt-prefetch /F1000000000
```

Benchmarks using both Fortran and C:
```
-QxSSE4.2 -Qipo -O3 -Qprec-div- -Qparallel -Qansi-alias
-Qopt-prefetch -Qauto-ilp32 /F1000000000
```

SPEC CFP2006 Result

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$SPECfp2006 = 34.2$

$SPECfp\_base2006 = 33.2$

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: -QxSSE4.2(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: -QxSSE4.2(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
```

Fortran benchmarks:

```
 410.bwaves: basepeak = yes

 416.gamess: -QxSSE4.2(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2)
            -Qipo -O3 -Qprec-div- -Qunroll2 -Ob0 -Qansi-alias
            -Qscalar-rep- /F1000000000
```

Continued on next page

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Peak Optimization Flags (Continued)

```
    434.zeusmp: basepeak = yes

    437.leslie3d: basepeak = yes

  459.GemsFDTD: -QxSSE4.2(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2)
                -Qipo -O3 -Qprec-div- -Qunroll2 -Qopt-prefetch -Qparallel
                /F1000000000

    465.tonto: -QxSSE4.2(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: -QxSSE4.2(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.html
http://www.spec.org/cpu2006/flags/Intel-Windows-Platform-Settings.20110719.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic12-winx64-revC.xml
http://www.spec.org/cpu2006/flags/Intel-Windows-Platform-Settings.20110719.xml

For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

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