SPEC® CFP2006 Result
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Intel Corporation

Intel DH61WW motherboard (Intel Pentium G860)

$SPECfp®\_rate2006 = \quad 58.0$

$SPECfp\_rate\_base2006 = \quad 57.2$
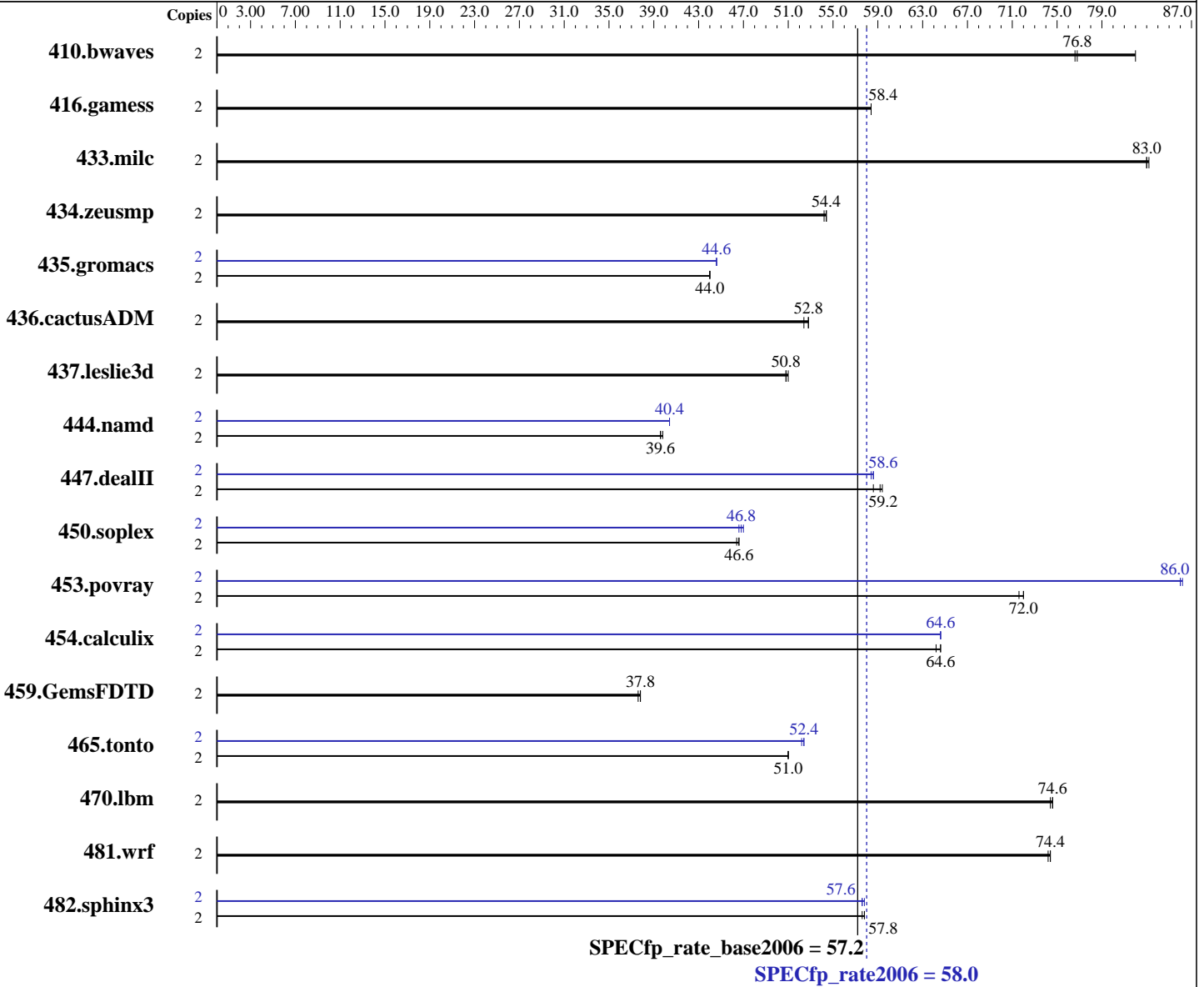
CPU2006 license: 13
Test sponsor: Intel Corporation
Tested by: Intel Corporation

Test date: Oct-2011
Hardware Availability: Sep-2011
Software Availability: Apr-2011

Copies		Result
410.bwaves	2	76.8
416.gamess	2	58.4
433.milc	2	83.0
434.zeusmp	2	54.4
435.gromacs	2	44.6
	2	44.0
436.cactusADM	2	52.8
437.leslie3d	2	50.8
444.namd	2	40.4
	2	39.6
447.dealII	2	58.6
	2	59.2
450.soplex	2	46.8
	2	46.6
453.povray	2	86.0
	2	72.0
454.calculix	2	64.6
	2	64.6
459.GemsFDTD	2	37.8
465.tonto	2	52.4
	2	51.0
470.lbm	2	74.6
481.wrf	2	74.4
482.sphinx3	2	57.6
	2	57.8

SPECfp_rate_base2006 = 57.2

SPECfp_rate2006 = 58.0

Hardware

CPU Name:	Intel Pentium G860
CPU Characteristics:	
CPU MHz:	3000
FPU:	Integrated
CPU(s) enabled:	2 cores, 1 chip, 2 cores/chip
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:	C/C++: Version 12.0.3.176 of Intel C++ Studio XE for Windows; Fortran: Version 12.0.3.176 of Intel Fortran Studio XE for Windows; Libraries: Version 15.00.30729.01 of Microsoft Visual Studio 2008 Professional SP1
Auto Parallel:	No
File System:	NTFS

Continued on next page

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L3 Cache:	3 MB I+D on chip per chip
Other Cache:	None
Memory:	4 GB (2 x 2 GB 2Rx4 PC3-10600U-9)
Disk Subsystem:	1 TB Seagate SATA, 7200 RPM
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

| | Base | | | | | | Peak | | | | | | |
Benchmark	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	2	332	82.0	354	76.6	**354**	**76.8**	2	332	82.0	354	76.6	**354**	**76.8**
416.gamess	2	671	58.4	**671**	**58.4**	670	58.4	2	671	58.4	**671**	**58.4**	670	58.4
433.milc	2	221	83.0	**221**	**83.0**	221	83.2	2	221	83.0	**221**	**83.0**	221	83.2
434.zeusmp	2	336	54.2	335	54.4	**335**	**54.4**	2	336	54.2	335	54.4	**335**	**54.4**
435.gromacs	2	325	44.0	325	44.0	**325**	**44.0**	2	320	44.6	**320**	**44.6**	320	44.6
436.cactusADM	2	452	52.8	455	52.4	**452**	**52.8**	2	452	52.8	455	52.4	**452**	**52.8**
437.leslie3d	2	369	51.0	**370**	**50.8**	370	50.8	2	369	51.0	**370**	**50.8**	370	50.8
444.namd	2	**405**	**39.6**	406	39.6	404	39.8	2	398	40.4	398	40.4	**398**	**40.4**
447.dealII	2	**386**	**59.2**	385	59.4	390	58.6	2	392	58.4	**390**	**58.6**	390	58.6
450.soplex	2	359	46.4	358	46.6	**359**	**46.6**	2	357	46.6	**356**	**46.8**	355	47.0
453.povray	2	148	71.6	148	72.0	**148**	**72.0**	2	**124**	**86.0**	123	86.2	124	86.0
454.calculix	2	257	64.2	255	64.6	**255**	**64.6**	2	256	64.6	**256**	**64.6**	256	64.6
459.GemsFDTD	2	564	37.6	562	37.8	**563**	**37.8**	2	564	37.6	562	37.8	**563**	**37.8**
465.tonto	2	**386**	**51.0**	385	51.0	386	51.0	2	377	52.2	375	52.4	**376**	**52.4**
470.lbm	2	369	74.4	**369**	**74.6**	368	74.6	2	369	74.4	**369**	**74.6**	368	74.6
481.wrf	2	**300**	**74.4**	300	74.4	301	74.2	2	**300**	**74.4**	300	74.4	301	74.2
482.sphinx3	2	**676**	**57.8**	675	57.8	677	57.6	2	**676**	**57.6**	677	57.6	675	57.8

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

Submit Notes

```
   The config file option 'submit' was used.
   The start command with the /affinity switch was used to bind processes to cores
```

Component Notes

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

General Notes

```
   Binaries compiled on a system with 1x Intel Core i7-860 CPU
+ 8GB memory using Windows 7 Enterprise 64-bit
```

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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:
        -QxSSE4.2 -Qipo -O3 -Qprec-div- -Qansi-alias -Qauto-ilp32
        /F1000000000   -link /FORCE:MULTIPLE

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

Fortran benchmarks:
        -QxSSE4.2 -Qipo -O3 -Qprec-div- -Qansi-alias /F1000000000
                  -link /FORCE:MULTIPLE

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Base Optimization Flags (Continued)

Benchmarks using both Fortran and C:
```
-QxSSE4.2 -Qipo -O3 -Qprec-div- -Qansi-alias -Qauto-ilp32
/F1000000000          -link /FORCE:MULTIPLE
```

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: `-QxSSE4.2 -Qipo -O3 -Qprec-div- -Qunroll2 -Qansi-alias -Qauto-ilp32 /F1000000000          -link /FORCE:MULTIPLE`

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: `-QxSSE4.2(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2) -Qipo -O3 -Qprec-div- -Qunroll2 -Qansi-alias -Qscalar-rep- -Qauto-ilp32 /F1000000000 shlW64M.lib -link /FORCE:MULTIPLE`

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Peak Optimization Flags (Continued)

> 450.soplex: -QxSSE4.2(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2)
> -Qipo -O3 -Qauto-ilp32 /F1000000000 shlW64M.lib
> -link /FORCE:MULTIPLE

> 453.povray: -QxSSE4.2(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: -QxSSE4.2(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: -QxSSE4.2(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2)
> -Qipo -O3 -Qprec-div- -Qopt-prefetch -Qauto-ilp32
> /F1000000000   -link /FORCE:MULTIPLE

436.cactusADM: basepeak = yes

> 454.calculix: -QxSSE4.2 -Qipo -O3 -Qprec-div- -Qauto-ilp32 /F1000000000
> -link /FORCE:MULTIPLE

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

Tested with SPEC CPU2006 v1.1.
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