SPEC® CFP2006 Result
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Intel Corporation

Intel DH61WW motherboard (Intel Pentium G860)

$SPECfp^®\_rate2006 =$ 47.3

$SPECfp\_rate\_base2006 =$ 46.6
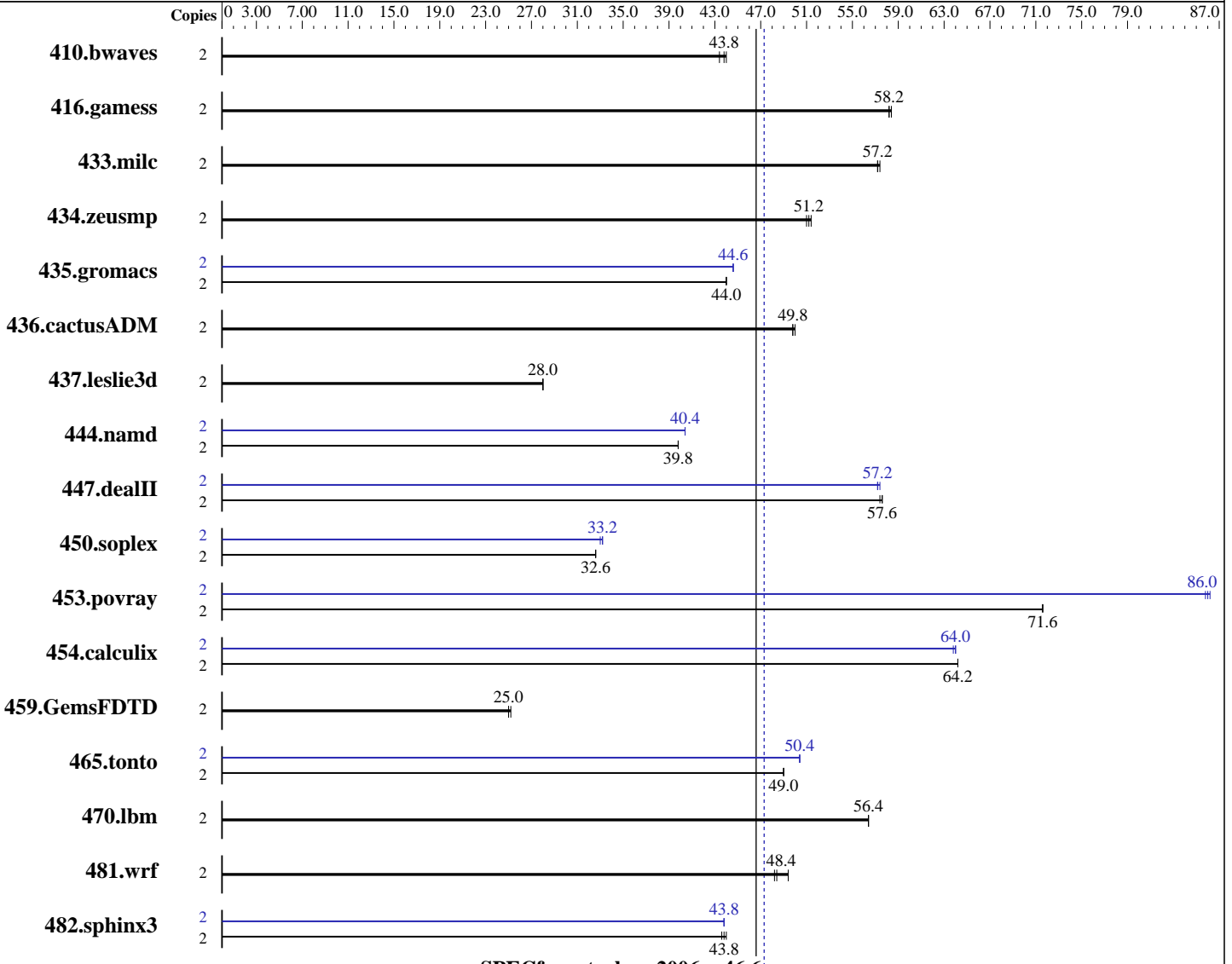
CPU2006 license: 13
Test sponsor: Intel Corporation
Tested by: Intel Corporation

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

Copies	Benchmark	Result
2	410.bwaves	43.8
2	416.gamess	58.2
2	433.milc	57.2
2	434.zeusmp	51.2
2 / 2	435.gromacs	44.6 / 44.0
2	436.cactusADM	49.8
2	437.leslie3d	28.0
2 / 2	444.namd	40.4 / 39.8
2 / 2	447.dealII	57.2 / 57.6
2 / 2	450.soplex	33.2 / 32.6
2 / 2	453.povray	86.0 / 71.6
2 / 2	454.calculix	64.0 / 64.2
2	459.GemsFDTD	25.0
2 / 2	465.tonto	50.4 / 49.0
2	470.lbm	56.4
2	481.wrf	48.4
2 / 2	482.sphinx3	43.8 / 43.8

SPECfp_rate_base2006 = 46.6

SPECfp_rate2006 = 47.3

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:	2 GB (2 x 1 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

Benchmark	Base Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Peak Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	2	618	44.0	**621**	**43.8**	626	43.4	2	618	44.0	**621**	**43.8**	626	43.4
416.gamess	2	674	58.2	**673**	**58.2**	671	58.4	2	674	58.2	**673**	**58.2**	671	58.4
433.milc	2	321	57.2	320	57.4	**321**	**57.2**	2	321	57.2	320	57.4	**321**	**57.2**
434.zeusmp	2	354	51.4	**355**	**51.2**	357	51.0	2	354	51.4	**355**	**51.2**	357	51.0
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	479	50.0	**479**	**49.8**	480	49.8	2	479	50.0	**479**	**49.8**	480	49.8
437.leslie3d	2	**672**	**28.0**	673	28.0	672	28.0	2	**672**	**28.0**	673	28.0	672	28.0
444.namd	2	403	39.8	**404**	**39.8**	404	39.8	2	**398**	**40.4**	398	40.4	397	40.4
447.dealII	2	397	57.6	398	57.4	**398**	**57.6**	2	399	57.4	400	57.2	**400**	**57.2**
450.soplex	2	512	32.6	**511**	**32.6**	511	32.6	2	505	33.0	**504**	**33.2**	503	33.2
453.povray	2	149	71.6	**149**	**71.6**	148	71.6	2	124	86.2	**124**	**86.0**	124	85.8
454.calculix	2	257	64.2	257	64.2	**257**	**64.2**	2	259	63.8	258	64.0	**258**	**64.0**
459.GemsFDTD	2	**846**	**25.0**	846	25.0	843	25.2	2	**846**	**25.0**	846	25.0	843	25.2
465.tonto	2	**401**	**49.0**	401	49.0	401	49.0	2	391	50.4	391	50.4	**391**	**50.4**
470.lbm	2	488	56.4	**488**	**56.4**	488	56.4	2	488	56.4	**488**	**56.4**	488	56.4
481.wrf	2	**462**	**48.4**	452	49.4	464	48.2	2	**462**	**48.4**	452	49.4	464	48.2
482.sphinx3	2	888	44.0	**890**	**43.8**	893	43.6	2	890	43.8	889	43.8	**890**	**43.8**

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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